

**CROSSING THE CARIBBEAN SEA:
TOWARDS A HOLISTIC VIEW OF
PRE-COLONIAL MOBILITY AND EXCHANGE**

Corinne L. Hofman
Faculty of Archaeology
Leiden University
P.O. Box 9515
2300 RA Leiden
The Netherlands
c.l.hofman@arch.leidenuniv.nl

Alistair J. Bright
Kaiserstraat 10
2311 GR Leiden
The Netherlands
caribbright@gmail.com

Reniel Rodríguez Ramos
Universidad de Puerto Rico
Recinto de Utuado
Programa de Ciencias Sociales
PO Box 2500
Utuado, Puerto Rico 00641-2500
reniel.rodriguez@upr.edu

Abstract

Pre-Colonial Caribbean communities participated in intensive interaction networks of human mobility and exchange of goods and ideas, guided by their cosmovision, technology, and socio-political organization. The urge to garner status, which reflected on the group and the individual, and the desire for access to a myriad of materials and products formed important motivations for articulating pre-Colonial interaction circuits. Through the adoption of a multi-disciplinary perspective, this paper seeks to develop a holistic view on the operation of interaction network(s) across a wide, socio-politically diverse region between 6000 BC and the early Colonial period. The adoption of a diachronic, macro-geographic perspective will help evaluate the structure through time of these social networks at archipelagic and pan-Caribbean scales.

Résumé

Guidées par leur vision du cosmos, leur technologie et leur organisation sociopolitique, les populations préhistoriques de la Caraïbe se sont inscrites dans des réseaux d'interaction de mobilité et d'échanges de biens et d'idées. Le besoin d'acquérir un statut reflétant l'identité communautaire et individuelle, ainsi que le désir d'accéder à une grande quantité de matériaux et de produits, ont constitué en soi des motivations importantes. Suivant une approche

pluridisciplinaire, cet article tente de développer une vision holistique des modalités de fonctionnement de ce(s) réseau(x) d'interaction au sein d'une vaste région, socialement et politiquement hétérogène, entre 6 000 av. J.-C. et les débuts de la période coloniale. Le choix d'une approche macro-géographique et diachronique devrait permettre d'évaluer la structure de ces réseaux sociaux sur un temps long et à une double échelle, archipélagique et pan-caribéenne.

Resumen

Los miembros de la comunidad prehistórica caribeña participaron en la red de interacción de movilidad humana e intercambio de mercancías e ideas, guiados por su cosmovisión, tecnología y organización sociopolítica. La ansia de obtener estatus, de modo a definir la identidad del grupo y del individuo, y el deseo de tener acceso a diferentes materiales y productos, formaron motivaciones importantes para articular circuitos de interacción precolonial. A través de adoptar una perspectiva multi-disciplinaria, este artículo intenta desarrollar una perspectiva holística a la funcionamiento de la red o de las redes de interacción a través de una amplia región de diversidad sociopolítica entre 6000 a. C. y el comienzo del período colonial. La adopción de una perspectiva geográfica amplia y diacrónica ayudará evaluar la estructura de estas redes sociales en escalas archipelágicas y pan-caribeñas a través del tiempo.

Communities in interaction

The highly variegated pre-Colonial Caribbean (is)landscape, always had a dynamic, inter-connected character thanks to the maritime orientation of its native (Amerindian) inhabitants and the region-wide interaction networks they maintained. It is now commonly accepted that human islanders were never socially isolated except in very extreme cases, but rather that the sea likely functioned as an 'aquatic motorway', a plane that the islanders would have traversed frequently, despite its occasional unpredictability (e.g., Boomert and Bright 2007; Broodbank 2002; Fitzpatrick (ed.) 2004; Rainbird 2007). Seen from this perspective, the Caribbean Sea actually linked communities instead of separating them, encouraging (micro-)regional mobility and exchange (e.g., Berman and Gnivecki 1995; Hofman et al. 2007; Keegan and Diamond 1987; Watters and Rouse 1989). Indeed, the pre-Colonial peoples of continental regions of Central and South America, having learned the skill of

seafaring, were able to move directly across the Caribbean Sea and between island passages as early as around 6000 BC (Callaghan 2001; Febles 1991; Wilson et al. 1998). The success of these early migrations and of later settlement and establishment of interaction networks undoubtedly depended greatly on the maintenance of contacts with the 'homeland(s)' and between communities throughout the region (Hofman et al. in press). These linkages or 'lifelines' would have acted as a safety net, crucial in times of environmental or social hazards, by ensuring that demographically unstable fledgling colonies would have sufficient access to suitable marriage partners (Keegan 2004; Kirch 2000; Moore 2001).

Upon first contact in 1492, the native inhabitants of the Caribbean astonished the Europeans with their voyaging skills and the elaborate interaction networks they maintained. Moreover, the Europeans were impressed by the high speed at which exchange objects were introduced into and circulated within these networks. As Chris-

topher Columbus noted in the diary of his first voyage, barely 72 hours after making landfall in the Americas:

*“Monday, October 15 [...] and while I was between these two islands i.e., Santa María [Rum Cay] and this large one which I named Fernandina [Long Island], I met a man alone in a pirogue [canoe] going from the island of Santa María to Fernandina. He had with him a small loaf, the size of his fist, a gourd of water, some red earth ground into powder and made into paste, and some dried leaves, which these people must greatly prize, for they presented me some of it on San Salvador. He had also a basket made in their native fashion in which he had a small string of glass beads and two blancas [Spanish coins]. From these things I knew that he had come from the island of San Salvador, had touched Santa María, and was now going to Fernandina”.*¹

Irving Rouse (1951, 1992), one of the founding fathers of Caribbean archaeology, advanced the perspective of interacting island communities as early as the 1950s. In positing that islands are not isolated contexts where cultures evolve without external influence, he defined several geocultural spaces (so-called passage areas) that acknowledged interaction between neighboring islands, yet envisaged little or no interactions with the adjacent continental regions after Ceramic Age settling with the exception of northeastern South America, the supposed Orinocan ‘homeland’ of

neo-Indian Antillean cultures. Thus Rouse opposed the concept of a ‘Circum-Caribbean culture area’, which united the Caribbean and Intermediate culture areas in terms of parallel socio-political developments (Steward 1947).²

Instead, following a specific framework of cultural taxonomy, cultural diffusion was envisioned as the outcome of population movement or migration, drawing on a combination of archaeological, linguistic and physical anthropological research. With the exception of some Lithic and Archaic Age peoples, the Caribbean archipelago was determined to have been settled from the mainland of South America in a phased, stepping-stone manner (see Curet 2005 for an extensive review of this issue). This perspective resulted in a diachronic focus on island settlement instead of a synchronic perspective on inter-community communication and exchange.

Various hypotheses were subsequently advanced to understand the motivations and mechanisms underlying migrations. Push and pull factors were invoked, with warfare and population pressure in the lands of origin on the one hand and the economic attractiveness of the insular territories on the other (Siegel 1991). Opportunism and flexibility were suggested to be inherent traits by which people were able to move into the Antilles through adaptation to the available resources. Recently, an Arawakan diaspora has been proposed (Heckenberger 2002). Migration in this sense is viewed as a unilinear event at the macro-scale of cultures or supra-cultures (known as series and subseries) and not traceable at the micro-scale of local groups identifiable by styles or complexes. Furthermore, the mental template of a sole origin for Ceramic Age island populations in northeastern South America still constrained these contributions, leaving potential macro-regional connections with other

neighboring continental areas like coastal Central America, Colombia and western Venezuela unconsidered (Rodríguez Ramos and Pagán Jiménez 2006; Wilson 2007).

Shifting paradigms

Recently, a multi-linear, reticulate model for island settlement and communication networks has been proposed that departs from the traditional unilinear view of migration (Callaghan 2003; Keegan 2004; Hofman et al. 2007, Fitzpatrick 2009; Rodríguez Ramos 2007). In addition, the paradigm has shifted away from establishing cultural frameworks and pinpointing migration events and large population movements towards analysing the processes underlying human mobility and material culture distributions (e.g., Boomert 2000; Hofman et al. 2007; Keegan and Maclachlan 1989) as well as focusing on social organisation to explain culture changes and shifting interaction spheres (e.g., Crock and Petersen 2004; Curet and Oliver 1998; Hofman and Hoogland 2004; Siegel 1999).³ In this perspective migration is regarded primarily as a continuous process of mobility involving, amongst others, exploratory expeditions, small-scale movement of local groups and colonization from various parts of continental America (Rodríguez Ramos 2007; Ulloa Hung and Valcárcel Rojas 2002)⁴, activity-driven or seasonal mobility and movement between communities triggered by marriage alliances, feasting, and enmity.⁵ Taken together, these multi-scalar forms of mobility give rise to complex networks within which people move, circulate, and exchange goods and ideas. Exchange can thus be regarded as the reciprocal movement of (im)material goods through human interaction embedded in a complex web of symbiotic social relationships and meanings (Hofman et al. 2007). Apart from ensuring

demographic fitness, permitting access to a range of basic needs and promoting the formation and maintenance of socio-political alliances through marriage and ritual services, exchange is a form of communication. The exchange of utilitarian wares and socially valued goods would for instance frequently be accompanied by the sharing of myths, tales, songs, dances, ritual knowledge and experience, embedded in native cosmovision.⁶ Seen in this light, we would fully expect the maintaining of 'symbiotic relationships', initially between Archaic and Ceramic Age communities and later between Ceramic Age communities originating from the disparate areas facing the Caribbean Sea.

A pan-Caribbean perspective

Such a new paradigm necessitates the re-evaluation of the trans-Caribbean vectors of interaction from a multi-scalar perspective.⁷ Archaeological evidence suggests that we need to view the wider Caribbean or circum-Caribbean region as potentially one large arena within which Amerindians could have established and maintained local and regional circuits of mobility and exchange as they traversed water passages and islands, without downplaying their cultural, social, biological, or linguistic particularities.⁸ This pan-Caribbean approach demands a pan-regional, diachronic, multi-scalar and cross-culturally comparative perspective on mobility and exchange between manifold communities with varying forms of socio-political organisation. In the following examples focus will be laid on the diachronic social dynamics and mechanisms at play throughout the larger arena of the Caribbean Sea. This is not to downplay the importance of the synchronic developments at the local scale of the community but rather to highlight the overarching setting in which local communities (inter) acted, forming variably interlocking larger

and smaller networks of mobility and exchange.

Archaeological lines of evidence

Increasingly in the last few years, evidence has surfaced for a myriad of regional interactions between the Antilles and continental America (see also Figure 1). Contact lines between the Antilles, Colombia, and Central America (Harlow et al. 2006, but see García-Casco et al. 2009 for counter arguments; Newsom and Wing 2004; Rodríguez Ramos 2007), exchanges between the Antilles and lower Central America (Rodríguez Ramos 2007; Sued-Badillo 1979), links between Puerto Rico, the Dominican Republic and Cuba on the one hand and Colombia on the other (Cooper et al. 2008; Rodríguez Ramos and Pagán Jiménez 2006; Siegel and Severin

1993; Valcárcel Rojas and Rodríguez 2003), connections between the Antilles, the southern Caribbean islands and lower Central America (Rodríguez Ramos 2007; Veloz Maggiolo and Angulo Valdez 1982; Versteeg 1999) and between the southern Caribbean islands and the hinterland of central Venezuela (Antczak 1998) have all recently been advanced. These interactions also include those between the Antilles and northeastern South America and between the Greater and Lesser Antilles that were established at an earlier stage (e.g., Allaire 1999; Boomert 2000; Curet 2005; Helms 1987; Hofman and Hoogland 2004; Keegan and Maclachlan 1989; Versteeg 1999; Watters and Scaglione 1994; Zucchi 1991). While these specific studies have provided positive evidence of contacts between various areas across the Caribbean



Figure 1. The dynamics of mobility and exchange at play across the Caribbean Sea during precolonial and early Colonial times illustrating the diversity of interaction networks active at multiple scales (object photographs courtesy of Roberto Valcárcel Rojas, Alice Samson, Alistair Bright, Arie Boomert, Menno Hoogland, map drafted by Menno Hoogland and Alistair Bright after an original by Corinne Hofman).

Sea, they almost exclusively provide evidence for a one-way traffic into the insular Caribbean. As such, the available data are in many cases too fragmentary and limited in scope to unravel the intricacies of human mobility, regional communication networks and the reciprocal mechanisms underlying them. Joint consideration of detailed studies of non-local signatures in human skeletal remains, provenancing of source areas and raw materials as well as the study of shared iconographic themes has the potential to furnish a more comprehensive, well-founded framework of mobility and exchange throughout the circum-Caribbean and possibly, pan-Caribbean exchanges. This potential will now be highlighted through the examination of a number of case studies within the realm of the three research themes mentioned above.

Biogeochemical analysis of human skeletal remains

In recent decades the development of various biogeochemical methods has allowed inferring patterns of mobility and migration from the archaeological record. Recent studies of ancient-DNA and of morphological traits of human skeletal remains from the Caribbean have proved that migratory movements took place from mainland South America into the Antillean archipelago and from northwestern Venezuela into the southern Caribbean islands, as evidenced by a study on recent DNA on Aruba (Lalueza-Fox et al. 2003; Toro-Labrador 2003). However, genetic research has yet to be refined so as to either include or rule out other areas of origin of the island populations such as Central America.⁹ More recently, studies of strontium isotopes have also proved to be successful in determining past movements, geographic origins and cultural affinity (Booden et al. 2008). Results from biogeochemical analysis combined with demographic data as

well as information on mortuary practices, palaeopathology, distribution of diseases (for example the spread of the *Treponema* bacteria), health conditions and diet provide a solid base for the interpretation of social relationships and mobility throughout the region.

Strontium isotopes vary regionally according to a limited number of factors and as strontium can often be found in a variety of archaeological materials such as human, faunal, and plant remains this approach has widespread utility. A database is currently being created with local signatures obtained from plant, faunal and geological samples in order to establish a baseline for the measurements of the human remains from assemblages across the Caribbean (Laffoon and Hoogland 2009). The Caribbean coast of Central America remains a blank spot as not many skeletal assemblages are available from that area to date.

Strontium isotope analysis carried out on skeletal remains from the archaeological site of Anse à la Gourde (AAG), located on the limestone island of Grande Terre, Guadeloupe, has revealed that at least one fourth of the population was non-local. The site was inhabited between AD 500 and 1400, but the major occupation concentrates between AD 1000 and 1400. Thus far 24 round and oval house structures have been documented surrounded by an oval shaped midden (Hofman et al. 2001; Morsink 2006). The houses vary between eight and twelve meters in diameter and the habitation area also served as a burial ground. Eighty-three burials containing 103 individuals have been found in and around the houses, suggesting the repeated interment of ancestors close to and among the living. Burials occur in clusters and mortuary practices are varied and complex. The majority of the burials was inhumed in a flexed position, which is characteristic of Late Ceramic Age burial assemblages. Ma-

nipulation of the bones after decomposition of the weak parts indicates that the graves were left open after interment of the dead persons and emphasized the role ancestors played in day-to-day social life (Hoogland et al. 1999).

The strontium values of 28% of the AAG individuals do not match the values of the island of Grande Terre, indicating that they spent their childhood in another island (Hoogland and Hofman 2010). On the basis of their strontium isotope heterogeneity, it is unlikely that they represent one single group of migrants. The non-local individuals, randomly distributed over the habitation area, mainly consist of females. This trend may be indicative of a preference for virilocal residence. It is noteworthy that tools and ornaments manufactured from non-local materials (greenstone and calci-rudite from St. Martin and flint from Antigua) were only found in the grave inventory of non-local females. One of the female burials was found with more than 1000 shell beads on her pelvis. The beads were manufactured from *Eustrombus gigas* shell, but as no production debris was found at the site, it is assumed that the beads were also imported from another place. The unique occurrence of non-local females buried with non-local grave goods may offer a rare insight into direct transmission, i.e., the transporting of material culture directly by the people concerned as opposed to a down-the-line exchange of goods.

Provenancing source areas and raw materials

The varied geological make-up of the circum-Caribbean region means that the distribution of various natural resources, such as lithics, clays, pottery temper materials, shell, fiber and wood differs from island to island and between the various continental regions. Over the past decades, ar-

chaeometric research (e.g., X-Ray Fluorescence (XRF), X-Ray Diffraction (XRD), Inductively coupled plasma Mass Spectrometry (ICP-MS) and Instrumental Neutron Activation Analysis (INAA) has positively identified the provenance areas of a number of pre-Colonial artifacts from the Caribbean (e.g., Descantes et al. (eds) 2008; Fitzpatrick et al. 2009a; Harlow et al. 2006; Knippenberg 2006; see Hofman et al. 2008 for a summary).

This research implies that raw materials and finished products circulated within a vast network, underpinned by direct procurement at the source but also by extensive exchange of semi-finished or finished objects. In a number of cases we may also assume that the communities who had access to certain raw materials became specialized in the manufacture of certain goods over others, as has been ethnographically documented among many lowland South-American groups (cf. Butt Colson 1973). Also, as on the continent, social mechanisms aimed at maintaining relationships between communities must have been an important factor in the exchange of goods.

There is ample evidence that exchange of various materials occurred within the archipelago and also between the Greater and Lesser Antilles at different points in time. We also have confirmation that ceramics, lithics and *guanín* (gold-copper alloy) objects as well as tools and ornaments of coral, shell and bone reached the islands from continental America and vice versa (Boomert 2000; Cooper et al. 2008; Rodríguez Ramos 2007). There are examples of ornaments made of armadillo, opossum, deer and jaguar bone, there are shell objects of the Unionidae family (a fresh water mollusk possibly endemic to the riverine environments of mainland Venezuela) and a large number of exotic beads and pendants are found on the islands made

of semi-precious stones (agate, amber, amethyst, aventurine, barite, carnelian, malachite, nephrite, and olivine among others) not indigenous to these islands (Boomert 2000; Fitzpatrick et al. 2009b; Grouard 2001; Serrand 2001). In the same vein there is evidence that *Eustrombus gigas* shells (*botutos*) from the southern Caribbean islands were transported to the hinterland of central Venezuela to be exchanged with inland communities (Antczak 1998).

Initially, X-Ray diffraction analysis of (fragments of) jadeite axes or adzes from the Lesser Antilles suggested that either the raw material itself or objects manufactured from this material were transported from Central America (i.e., Guatemala) into the islands (Harlow et al. 2006). However, the recent discovery of jadeite sources in Cuba and Hispaniola decreases the likelihood of a Central American connection and rather points to a Greater Antillean origin (i.e., García Casco et al. 2009; Rodríguez Ramos, this issue). Similar adzes have been found throughout the Greater and Lesser Antilles both during the Early and Late Ceramic Ages suggesting that a vast network existed in which these objects circulated.

Petrographic analysis also positively identified Guyanese affiliation of the Cayo ceramics in the Windward Islands of the Lesser Antilles. Additional confirmation of the South American origin of this pottery is found in its stylistic affiliations to Koriabo ceramics of that area of the mainland and in part of it being tempered with caraipe, the burned bark of the South American 'kwepi' tree (*Licania* sp.), which does not occur on the islands. Cayo pottery in the Windward Islands is dated to the late pre-Colonial and early Colonial periods and has been found from Grenada to Basse Terre, Guadeloupe. Cayo pottery has been correlated with the so-called Kallinago or Island Carib, whose presence in the south-

ern portion of the Lesser Antilles during the Late Ceramic Age is debated, though they are certainly firmly established by the early Colonial period, as described in the ethnohistorical sources (Allaire 1984; Boomert 1986).

A last case-study concerns XRF analysis on a number of gold and *guanín* objects from the Greater Antilles. Fragments of hammered ornaments made of a gold (placer gold) and pendants made of a gold-copper alloy or *guanín* are known from Puerto Rico and Vieques from Saladoid times onwards and from the Dominican Republic and Cuba from the Late Ceramic Age (see Cooper et al. 2008). Combined archaeometric and iconographic analysis confirmed the origin of some of the *guanín* pieces on the South American mainland (Colombia) and they probably reached the Greater Antilles via Central America. Two main areas of origin have been pinpointed for the Cuban *guanín* in Colombia, namely Tairona and Zenu. A similar piece is known from the Mazaruni river area in Guyana (Whitehead 1990) which suggests that trade of these objects also took place along the coast or the rivers of northern South America.

It is very likely that the Spanish continued the trade in *guanín* gold with the Colombian ateliers during the early Colonial period. This is best evidenced from the contact site of Chorro de Maíta in Cuba (AD 1400-1600) excavated by Cuban archaeologists during the 1980s and currently being analyzed by Roberto Valcárcel Rojas. Numerous ornaments as well as European brass objects have been found at the site buried as grave goods among the 120 individuals (Cooper et al. 2008; Valcárcel Rojas and Rodríguez Arce 2005).

Iconographic analysis of shared themes and ideas

A number of iconographic themes are

also clearly shared between the islands and continental America, pointing to the recursive flow of ideas across the region. The circum-Caribbean Amerindian world revolved around the circulation of goods and ideas, from the distribution of raw materials, preforms and finished products to the spread of ideas and social valuables¹⁰ by means of exchange and/or gift-giving. Specific pottery objects and items made of guanín, semi-precious stones and other rock materials, shell, coral, bone and wood, were imbued with multiple meanings that extended beyond their function. Social valuables continued to accrue symbolic and codified connotations upon entering networks of interaction as items of exchange and communication sometimes becoming heirlooms over time (Hofman et al. 2008; Fitzpatrick et al. 2009a). These meanings and associations all derived from the natural and cultural surroundings, ultimately encompassed in Amerindian cosmovision, and expressed in oral traditions transmitted through stories, tales, songs and dances.

The following cases point to such a recursive relationship between material culture and cosmovision. Exotic lithic materials with non-insular iconographic representations associated with the Huecoid/Huecan Saladoid ceramics in Puerto Rico and the northern Lesser Antilles have been ascribed a Costa Rican and Panamanian origin (Rodríguez Ramos and Pagan-Jiménez 2006; see also Rodríguez Ramos this issue). On the other hand, greenstone frog-shaped pendants (known as Muiraquitã in Brazil) and other exotic rock materials point to connections with the tropical lowlands of South America (Boomert 1987). Furthermore, the mainland iconography of jaguars, king vultures, peccaries and caimans on insular Saladoid ceramics, microlapidary work, and ceremonial paraphernalia underscores the continuing affiliations with the South American mainland, or at

least the endurance of a mental template of the homeland environment (Boomert 2003; Hofman et al. in press; Roe 1989).

During the Late Ceramic Age, there is a sudden appearance of female figurines or statue(tte)s in Suazan Troumassoid assemblages throughout the southern Lesser Antilles. Petitjean Roget suggests that their appearance denotes a realignment of society and potentially traces the roots of this phenomenon back to the late Saladoid (Petitjean Roget 1993, 2005). However, it is more likely that the phenomenon is connected to that of the sitting or standing female figurines that feature so prominently in the Late Ceramic Age Marajoaroid (Roosevelt 1991), Arauquinoid (Rostain and Versteeg 2004) and Valencioid (Antczak and Antczak 2006) series that feature across large swaths of coastal north-eastern South America.

Although these examples are likely just the tip of the iceberg, research in this field is the least developed of the three avenues discussed above, and much work remains to be done, particularly in the realms of comparing material culture assemblages throughout the circum-Caribbean, comparative mythology and materiality.

Discussion

In this paper we have explored different strands of multi-disciplinary research that can be fruitfully drawn together to explore the circum-Caribbean as a meaningful entity, whose inhabitants constructed social and trade networks by maintaining extensive circuits of mobility and exchange. Evidently, over a period of some 6000 years the Caribbean islands witnessed a continual coming and going (i.e., to-ing and fro-ing; sensu Hofman et al. 2007) of a differentiated flux of populations with a high degree of mobility, with a range of motives, and with various origins and destinations. In time, people, perishable and non-perishable

goods, ideas and information as well as cultural and social practices from numerous ‘homeland(s)’ amalgamated. This led to a growing number of local communities of heterogeneous composition and the ultimate diversification within the archipelago in late pre-Colonial times, amounting to what has been called a ‘mosaic of cultures’ (Wilson 1993). The plurality of this region, mirrored in today’s societies, had initially been downplayed by the adoption of an uni-linear approach, raising the spectre of a non-dynamic or rather slow-moving migratory pattern that runs counter to everything we know of how these societies live in continental America (Hofman and Carlin 2010). Goods, ideas, and cultural and linguistic traits were most likely exchanged through the Caribbean islands at a high speed. Boundaries and alliances were doubtlessly being constantly shifted and negotiated, adopted and rejected. More extensive research into the archaeological and anthropological reflection of cultural interactions should allow the identification of many more contact lines, and the contextualisation of such nodes as to their position within an overarching pan-Caribbean network system, or within the various larger and smaller interaction spheres that constitute it.

Acknowledgments

We would like to thank Benoît Roux for correcting our French abstract and Alex Geurds for correcting our Spanish abstract. The Netherlands Foundation for Scientific Research (NWO) is thanked for providing the financial support (VICI grant #016084621) which made the research for this article possible.

1. “[...] y estando a medio golfo d’estas dos islas, es de saber, de aquella Sancta Maria y d’esta grande a la cual pongo nombre la Fernandina,

hallé un hombre solo en una almadía que se pasaba de la isla de Sancta Maria a la Fernandina, y traía un poco de su pan, que sería tanto como el puño y una calabaza de agua, y un pedazo de tierra bermeja hecha en polvo y después amasada, y unas hojas secas, que debe ser cosa muy apreciada entrellos, porque ya me truxeron en San Salvador d’ellas en presente; y traía un cestillo a su guisa en que tenía un ramalejo de cuentezillas de vidrio y dos blancas, por las cuales cognoscí qu’él venía de la isla de San Salvador, y avía pasado a aquélla de Sancta María y se pasaba a la Fernandina” (Columbus 1992(1):55, according to Las Casas).

2. The Caribbean culture area includes eastern Venezuela, the coasts of the Guianas, and the Antilles. The Intermediate area encompasses the coastal areas of Central America, west Venezuela and the islands offshore its coast such as the Dutch Caribbean Islands (see Rodríguez Ramos, this volume). Steward’s framework was adopted by Meggers and the group of ‘social archaeologists’. See Fonseca 1988; Meggers 1979; Vargas Arenas and Sanoja 1999; Veloz Maggiolo 1980.

3. Research in this line was also carried out under the auspices of Hofman and Bright within the Netherlands Foundation for Scientific Research (NWO)-funded ASPASIA project ‘*Socio-political complexity in the pre-Columbian Caribbean: an integral approach to inter-insular and inter-regional relationships*’.

4. Recently Archaic Age sites in the Greater Antilles have yielded evidence of pottery making independent of the later ceramic tradition known as Saladoid, which has traditionally been interpreted as the earliest pottery of the region introduced by the alleged first ceramic-producing migrants from northern South America (Rímoli and Nadal 1983; Rodríguez Ramos et al. 2008; Veloz Maggiolo 1974).

5. For different types of mobility, see e.g., Bellwood 2004; Curet 2005; Hofman et al. 2006; Kelly 1995; Manning 2005; Moch 2003; Moore 2001; Sellet et al. (eds) 2006.

6. This definition of exchange has been adapted from Boomert 2000 and Arvelo-Jiménez and Biord 1994.

7. See Nassaney and Sassaman (eds) 1995 for a multi-scalar approach to the archaeology of the American Southeast.

8. E.g., Bentley 1999; Lewis 1999; Rodríguez Ramos 2007; Vidal 2003.

9. Although there is some preliminary data about central and western Cuban populations being related to Central America (Schurr and Sherry 2006).

10. See Mol 2007 for this adaptation of the concepts of socially valued goods (Spielmann 2002), social goods (Siegel pers. comm.) and primitive valuables (Earle and Ericson 1977).

References cited

- Allaire, L.
1984 A reconstruction of early historical Island Carib pottery. *Southeastern Archaeology* 3: 121-133.
1999 Archaeology of the Caribbean Region. In *The Cambridge history of the Native peoples of the Americas, Vol. III, Part 1*, edited by F. Salomon and S. B. Schwartz, pp. 668-733. Cambridge: Cambridge University Press.
- Antczak, A.
1998 *Late prehistoric economy and society of the islands off the coast of Venezuela: a contextual interpretation of the non-ceramic evidence*. Unpublished Ph.D. dissertation. London: Institute of Archaeology, University College London.
- Antczak, M. M., and A. Antczak
2006 *Los ídolos de las islas prometidas: arqueología prehispánica del archipiélago de Los Roques*. Caracas: Editorial Equinoccio.
- Arvelo-Jiménez, N., and H. Biord
1994 The impact of conquest on contemporary indigenous peoples of the Guiana Shield: the system of Orinoco regional interdependence. In *Amazonian Indians from prehistory to the present: Anthropological perspectives*, edited by A. C. Roosevelt: pp. 55-78. Tuscon: University of Arizona Press.
- Bellwood, P.
2004 *First farmers: the origins of agricultural societies*. Oxford: Blackwell Publishing.
- Bentley, J. H.
1999 Sea and Ocean Basins as Frameworks of Historical Analysis. *Geographical Review* 89(2): 215-225.
- Berman, M. J., and P. L. Gnivecki
1995 The Colonization of the Bahama Archipelago: a reappraisal. *World Archaeology* 26(3): 422-441.
- Booden, M. A., R. Panhuysen, M. L. P. Hoogland, H. de Jong, G. Davies and C. L. Hofman
2008 Tracing human mobility with 87Sr/86Sr at Anse à la Gourde, Guadeloupe. In *Crossing the borders. New methods and techniques in the study of archaeological materials from the Caribbean*, edited by C. L. Hofman, M. L. P. Hoogland and A. L. van Gijn, pp. 214-225. Tuscaloosa: University of Alabama Press.
- Boomert, A.
1986 The Cayo Complex of St. Vincent: Ethnohistorical and Archaeological Aspects of the Island Carib Problem. *Antropológica* 66: 3-68.
1987 Gifts of the Amazons: "Green Stone" Pendants and Beads as Items of Ceremonial Exchange in Amazonia and the Caribbean. *Antropológica* 67:33-54.
2000 *Trinidad, Tobago and the lower Orinoco interaction sphere. An archaeological / ethnohistorical study*. PhD dissertation, Leiden University. Alkmaar: Cairi Publications.
2003 Raptorial birds as icons of shamanism in the prehistoric Caribbean and Amazonia. In *Proceedings of the XIXth International Congress for Caribbean Archaeology (2)*, edited by L. Alofs and R. A. C. F. Dijkhoff, pp. 121-157. Publication of the Archaeological Museum Aruba 9. Oranjestad: Archaeological Museum Aruba.
- Boomert, A., and A. J. Bright
2007 Island Archaeology: In Search of a

- New Horizon. *Island Studies Journal* 2(1): 3-26
- Broodbank, C.
2002 *An Island Archaeology of the Early Cyclades*. Cambridge: Cambridge University Press.
- Butt Colson, A.
1973 Inter-tribal trade in the Guiana Highlands. *Antropológica* 34: 1-70.
- Callaghan, R.T.
2001 Ceramic Age Seafaring and Interaction Potential in the Antilles: A Computer Simulation. *Current Anthropology* 42(2): 308-313.
2003 Comments on the Mainland Origins of the Preceramic Cultures of the Greater Antilles. *Latin American Antiquity* 14(3): 323-338.
- Columbus, C.
1992 *The Journal Account of the First Voyage and Discovery of the Indies. Volume I, Part 1*. Instituto Poligráfico e Zecca dello Stato. Rome: Libreria dello Stato.
- Cooper, J., M. Martín-Torres and R. Valcárcel Rojas
2008 American gold and European brass: metal objects and indigenous values in the cemetery of El Chorro de Maíta, Cuba. In *Crossing the borders. New methods and techniques in the study of archaeological materials in the Caribbean*, edited by C. L. Hofman, M. L. P. Hoogland and A.L. van Gijn, pp. 34-42. Tuscaloosa: University of Alabama Press.
- Crock, J. G., and J. B. Petersen
2004 Inter-island exchange, settlement hierarchy, and a Taino-related chiefdom on the Anguilla Bank, Northern Lesser Antilles. In *Late Ceramic Age Societies in the eastern Caribbean*, edited by A. Delpuech and C. L. Hofman, pp. 139-158. Paris Monographs in American Archaeology (E. Taldadoire, series ed.). BAR International Series 1273. Oxford: Archaeopress.
- Curet, L. A.
2005 *Caribbean paleodemography. Population, culture history and socio-political processes in ancient Puerto Rico*. Tuscaloosa: University of Alabama Press.
- Curet, L. A., and J. R. Oliver
1998 Mortuary practices, social development, and ideology in Precolumbian Puerto Rico. *Latin American Antiquity* 9(3): 217-239.
- Descantes, C., R. J. Speakman, M. D. Glascock, and M. T. Boulanger (eds)
2008 An exploratory study into the chemical characterization of Caribbean ceramics: an introduction to a special volume of the Journal of Caribbean Archaeology in memory of James B. Petersen. *Journal of Caribbean Archaeology Special Publication Number 2: An Exploratory Study into the Chemical Characterization of Caribbean Ceramics*.
- Earle, T. K., and J. E. Ericson
1977 Exchange systems in archaeological perspective. In *Exchange Systems in Prehistory*, edited by T. K. Earle and J. E. Ericson, pp. 3-12. New York: Academic Press.
- Febles, J.
1991 Estudio Comparativo de las Industrias de Piedra Tallada de Aguas Verdes (Baracoa) y Playitas (Matanzas): Probable Relación de estas Industrias con otras del S.E. de los Estados Unidos. In *Arqueología de Cuba y otras Áreas Antillanas*, edited by M. A. Rodríguez, pp. 312-370. La Habana: Editorial Academia.

- Fitzpatrick, S. M. (ed.)
2004 *Voyages of Discovery: The Archaeology of Islands*. Westport: Praeger.
- Fitzpatrick, S. M.
2009 *Saladoid seafarers: on the origins and migrations of Early Ceramic Age Amerindian populations*. Paper presented at the symposium: The Caribbean basin before Columbus. The Pre-Columbian Society of Washington, D.C., September 19, 2009.
- Fitzpatrick, S. M., Q. Kaye, J. Feathers, J. A. Pavia, and K. M. Marsaglia
2009a Evidence for Inter-Island Transport of Heirlooms: Luminescence Dating and Petrographic Analysis of Ceramic Inhaling Bowls from Carriacou, West Indies. *Journal of Archaeological Science* 36(3): 596-606.
- Fitzpatrick, S. M., M. Kappers, Q. Kaye, C. Giovas, M. LeFebvre, M. Hill Harris, S. Burnett, J. A. Pavia, K. M. Marsaglia, and J. Feathers
2009b Precolumbian Settlements on Carriacou, West Indies. *Journal of Field Archaeology* 34: 247-266.
- Fonseca Zamora, O. M.
1988. Reflexiones sobre la arqueología como ciencia social. In *Hacia una Arqueología Social*, edited by O. M. Fonseca Zamora, pp. 13-21. San José: Universidad de Costa Rica.
- García-Casco, A., A. Rodríguez Vega, J. Cárdenas Párraga, M. A. Iturralde-Vinent, C. Lázaro, I. Blanco Quintero, Y. Rojas Agramante, A. Kröner, K. Núñez Cambra, G. Millán, R. L. Torres-Roldán, S. Carrasquilla
2009 A new jadeitite jade locality (Sierra del Convento, Cuba): first report and some petrological and archaeological implications. *Contributions to Mineral Petrology* 158: 1-16.
- Grouard, S.
2001 *Subsistance, Systèmes Techniques et Gestion Territoriale en Milieu Insulaire Antillais Précolombien. Exploitation des Vertébrés et des Crustacés aux époques Saladoïdes et Troumassoïdes de Guadeloupe (400 av. J.-C. à 1 500 ap. J.-C.)*. Ph.D. dissertation, U.F.R. Sciences Sociales et Administration. Paris: Université de Paris X-Nanterre.
- Harlow, G. E., A. Reg Murphy, D. J.
Hozjan, C. N. de Mille and A. A. Levinson
2006 Pre-Columbian jadeite axes from Antigua, West Indies: description and possible sources. *The Canadian Mineralogist* 44(2): 305-321.
- Heckenberger, M. J.
2002 Rethinking the Arawakan Diaspora: Hierarchy, Regionality, and the Amazonian Formative. In *Comparative Arawakan Histories: Rethinking Language Family and Culture Area in Amazonia*, edited by F. Santos-Granero and J. D. Hill, pp. 99-121. Illinois: University of Illinois Press.
- Helms, M. W.
1987 Art styles and interaction spheres in Central America and the Caribbean: polished black wood in the Greater Antilles. In *Chiefdoms in the Americas*, edited by R. D. Drennan and C. A. Uribe, pp. 67-83. New York: University of America Press.
- Hofman, C. L., and E. B. Carlin
2010 The ever-dynamic Caribbean: exploring new approaches to unraveling social networks in the pre colonial and early colonial periods. In *Linguistics and Archaeology in the Americas: The historization of language and society*, edited by E. B. Carlin and S. van de Kerke, pp. 107-122. Brill's Studies in the Indigenous Languages of the Ameri-

- cas. Leiden: Brill.
- Hofman, C. L., and M. L. P. Hoogland
2004 Social dynamics and change in the Northern Lesser Antilles. In *Late Ceramic Age Societies in the eastern Caribbean*, edited by A. Delpuech and C. L. Hofman, pp. 47-58. Paris Monographs in American Archaeology (E. Taladoire, series editor). BAR International Series 1273. Oxford: Archaeopress.
- Hofman, C. L., M. L. P. Hoogland, and A. Delpuech
2001 Social organization at a Troumassoid settlement, the case of Anse à la Gourde, Guadeloupe. In *Proceedings of the XIXth International Congress for Caribbean Archaeology (1)*, edited by L. Alofs and R. A. C. F. Dijkhoff, pp. 124-131. Publications of the Archaeological Museum Aruba 9. Oranjestad: Archaeological Museum Aruba.
- Hofman, C. L., M. L. P. Hoogland, and A. Delpuech (eds)
2001 *Le site de l'Anse à la Gourde. St. François, Grande-Terre, Guadeloupe. Fouille programmée pluriannuelle 1995-2000. Rapport de synthèse 2000*. Basse-Terre/Leiden: Direction Régionale des Affaires Culturelles/Université de Leiden.
- Hofman, C. L., A. J. Bright, and M. L. P. Hoogland
2006 Archipelagic resource mobility. Shedding light on the 3000 years old tropical forest campsite at Plum Piece, Saba (Northern Lesser Antilles). *Journal of Island and Coastal Archaeology* 1(2): 145-164.
- Hofman, C. L., A. J. Bright, A. Boomert, and S. Knippenberg
2007 Island Rhythms. The web of social relationships and interaction networks in the pre-Columbian Lesser Antilles. *Latin American Antiquity* 18(3): 243-268.
- Hofman, C. L., A. J. D. Isendoorn, M. Booden, and L. Jacobs
2008 In tuneful threefold. Combining conventional archaeological methods, archaeometric techniques and ethnoarchaeological research in the study of pre-colonial pottery of the Caribbean. In *Crossing the borders. New methods and techniques in the study of archaeological materials in the Caribbean*, edited by C. L. Hofman, M. L. P. Hoogland, and A. van Gijn, pp. 21-33. Tuscaloosa: University of Alabama Press.
- Hofman, C. L., A. Boomert, A. J. Bright, M. L. P. Hoogland, S. Knippenberg, and A. V. M. Samson
in press Ties with the 'Homeland': archipelagic interaction and the enduring role of the South American mainland in the pre-Columbian Lesser Antilles. In *Islands in the Stream: Interisland and Continental Interaction in the Caribbean*, edited by L. A. Curet and M. W. Hauser. Tuscaloosa: University of Alabama Press.
- Hoogland, M. L. P., and C. L. Hofman
2010 Island dynamics. In *Island Shores, Distant Pasts: Archaeological and Biological Approaches to the Pre-Columbian Settlement of the Caribbean*, edited by S. M. Fitzpatrick and A. H. Ross, pp. 148-162. Gainesville: University of Florida Press.
- Hoogland, M. L. P., T. Romon and P. Bras-selet
1999 Troumassoid burial practices at the site of Anse à la Gourde, Guadeloupe. In *Proceedings of the 18th International Congress for Caribbean Archaeology (2)*, pp. 173-178. Basse-Terre: Association Internationale d'Archéologie de la

- Caraïbe, Région Guadeloupe, Mission Archéologique
- Keegan, W. F.
2004 Islands of chaos. In *Late Ceramic Age societies in the Eastern Caribbean*, edited by A. Delpuech and C. L. Hofman, pp. 33-44. Paris Monographs in American Archaeology (E. Taladoire, series ed.). BAR International Series 1273. Oxford: Archaeopress.
- Keegan, W. F., and J. M. Diamond
1987 Colonization of Islands by Humans: A Biogeographical Perspective. *Advances in Archaeological Methods and Theory* 10:49-92.
- Keegan, W. F., and M. D. Maclachlan
1989 The evolution of avunculocal chiefdoms: a reconstruction of Taino kinship and politics. *American Anthropologist* 91(3): 613-630.
- Kelly, R. L.
1995 *The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways*. Washington: Smithsonian Institution Press.
- Kirch, P. V.
2000 *On the road of the winds: an archaeological history of the Pacific Islands before European contact*. University of California Press, Berkeley.
- Knippenberg, S.
2006 *Stone Artifact Production and Exchange among the Northern Lesser Antilles*. Ph.D. Dissertation, Faculty of Archaeology, Leiden University. Utrecht: DPP.
- Laffoon, J., and M. L. P. Hoogland
2009 *An Application of Strontium Isotope Analysis to Caribbean Contexts: Promises and Problems*. Paper presented at the 23rd Congress of the International Association for Caribbean Archaeology, June 29 – July 3, 2009, Antigua.
- Lalueza-Fox, C., M. T. P. Gilbert, A. J. Martínez-Fuentes, F. Calafell and J. Bertranpetit
2003 Mitochondrial DNA from pre-Columbian Ciboneys from Cuba and the prehistoric colonization of the Caribbean. *American Journal of Physical Anthropology* 121: 97-108.
- Lewis, M. W.
1999 Dividing the Ocean Sea. *Geographical Review* 89(2): 188-214.
- Manning, P.
2005 *Migration in World History*. London: Routledge.
- Meggers, B. J.
1979 *Prehistoric America: An Ecological Perspective (2nd edition)*. New York: Aldine.
- Moch, L. P.
2003 *Moving Europeans: Migration in Western Europe since 1650*. Bloomington: Indiana University Press.
- Mol, A. A. A.
2007 *Costly Giving, Giving Guaízas. Towards an organic model of the exchange of social valuables in the Late Ceramic Age Caribbean*. MPhil Thesis Faculty of Archaeology, Leiden University. Leiden: Sidestone Press.
- Moore, J. H.
2001 Evaluating five models of human colonization. *American Anthropologist* 103(2): 395-408.
- Morsink, J.,
2006 *(Re-)Constructing Constructions; Quotidian life and social practice at Anse à la Gourde*. Unpublished MPhil thesis, Faculty of Archaeology, Leiden University, Leiden.
- Nassaney, M. S., and K. S. Sassaman (eds)
1995 *Native American Interactions: Multiscalar Analyses and Interpretations in the Eastern Woodlands*.

- Knoxville: University of Tennessee Press.
- Newsom, L. A., and E. S. Wing
2004 *On Land and Sea: native American uses of biological resources in the West Indies*. Tuscaloosa: University of Alabama Press.
- Petitjean Roget, H.
1993 La Vénus impudique de Point des Pies, Saint François, Guadeloupe. Contribution à l'étude de l'art ancien des Antilles. In *Proceedings of the 14th Congress of the International Association for Caribbean Archaeology*, edited by A. Cummins and P. King, pp. 476-491. Bridgetown: Barbados Museum and Historical Society.
- 2005 Une collection archéologique des Petites Antilles entre au Musée Régional d'Histoire et d'Ethnographie de la Martinique. *La Revue des Musées de France. La Revue du Louvre*: 37-46.
- Rainbird, P.
2007 *The archaeology of islands*. Cambridge: Cambridge University Press.
- Rímoli, R. O., and J. Nadal
1983 *El Horizonte Ceramista Temprano en Santo Domingo y Otras Antillas*. Santo Domingo: Editora de la Universidad Autónoma de Santo Domingo.
- Rodríguez Ramos, R.
2007 *Puerto Rican Precolonial History Etched in Stone*. Unpublished Ph.D. Thesis, University of Florida, Gainesville.
- Rodríguez Ramos, R., E. Babilonia, L. A. Curet, and J. Ulloa
2008 The Pre-Arawak Pottery Horizon in the Antilles: A New Approximation. *Latin American Antiquity* 19 (1): 47-63.
- Rodríguez Ramos, R., and J. Pagán Jiménez
2006 Interacciones multivectoriales en el Circum-Caribe precolonial: un vistazo desde las Antillas. *Caribbean Studies* 34(2): 103-143.
- Roe, P. G.
1989 A Grammatical Analysis of Cedrosan Saladoid Vessel Form Categories and Surface Decoration: Aesthetic and Technical Styles in Early Antillean Ceramics. In *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*, edited by P. E. Siegel, pp. 267-382. Oxford: British Archaeological Reports International Series.
- Roosevelt, A. C.
1991 *Moundbuilders of the Amazon: Geophysical Archaeology on Marajo Island, Brazil*. San Diego: Academic Press.
- Rostain, S., and A. H. Versteeg
2004 The Arauquinoid tradition in the Guianas. In *Late Ceramic Age Societies in the Eastern Caribbean*, edited by A. Delpuech and C. L. Hofman, pp. 233-250. Paris Monographs in American Archaeology 14 / BAR International Series 1273. Oxford: Archaeopress.
- Rouse, I.
1951 Areas and periods of culture in the Greater Antilles. *Southwestern Journal of Anthropology* 7: 248-265.
- 1992 *The Tainos: rise and decline of the people who greeted Columbus*. New Haven: Yale University Press.
- Schurr, T. G., and S. T. Sherry
2004 Mitochondrial DNA and Y Chromosome Diversity and the Peopling of the Americas: Evolutionary and Demographic Evidence. *American Journal of Human Biology* 16: 420-

- 439.
- Sellet, F., R. Greaves and P.-L. Yu (eds)
2006 *Archaeology and ethnoarchaeology of mobility*. Gainesville: University Press of Florida.
- Serrand, N.
2001 Occurrence of exogenous freshwater Bivalves (Unionoida) in the Lesser Antilles during the first millennium A.D.: example from the Hope Estate Saladoid site (St. Martin, French Lesser Antilles). In *Proceedings of the 18th International Congress of the Association for Caribbean Archaeology*, pp. 136-152. Basse-Terre: Association Internationale d'Archéologie de la Caraïbe, Région Guadeloupe, Mission Archéologique.
- Siegel, P. E.
1991 Migration research in Saladoid archaeology: a review. *The Florida Anthropologist* 44(1): 79-91.
1999 Contested Places and Places of Contest: The Evolution of Social Power and Ceremonial Space in Prehistoric Puerto Rico. *Latin American Antiquity* 10(3): 209-238.
- Siegel, P. E., and K. P. Severin
1993 The First Documented Prehistoric Gold-Copper Alloy Artefact from the West Indies. *Journal of Archaeological Science* 20: 67-79.
- Spielmann, K. A.
2002 Feasting, Craft Specialization, and the Ritual Mode of Production. *American Anthropologist* 104: 195-207.
- Steward, J. H.
1947 American Culture History in the Light of South America. *Southwestern Journal of Anthropology* 3(2): 85-107.
- Sued-Badillo, J.
1979 *La mujer indígena y su sociedad*. Rio Piedras: Edit. Antillana.
- Toro-Labrador, G., O. R. Wever, and J. C. Martínez-Cruzado
2003 Mitochondrial DNA Analysis in Aruba: Strong Maternal Ancestry of Closely Related Amerindians and Implications for the Peopling of Northwestern Venezuela. *Caribbean Journal of Science* 39(1): 11-22.
- Ulloa Hung, J., and R. Valcárcel Rojas
2002 *Cerámica temprana en el centro del oriente de Cuba*. Santo Domingo: Viewgraph.
- Valcárcel Rojas, R., and C. A. Rodríguez Arce
2005 El Chorro de Maíta: Social Inequality and Mortuary Space. In *Dialogues in Cuban Archaeology*, edited by L. A. Curet, S. L. Dawdy and G. La Rosa Corzo, pp. 125-146. Tuscaloosa: The University of Alabama Press.
- Vargas Arenas, I., and M. Sanoja
1999 Archaeology as a social science: its expression in Latin America. In *Archaeology in Latin America*, edited by G. G. Politis and B. Alberti, pp. 57-73. London / New York: Routledge.
- Veloz Maggiolo, M.
1980 *Las sociedades Arcaicas de Santo Domingo*. Museo del Hombre Dominicano, Serie Investigaciones Antropológicas No. 16. Santo Domingo: Fundación García Arévalo.
- Veloz Maggiolo, M., and C. A. Angulo Valdés
1982 La aparición de un ídolo de tres puntas en la tradición Malambo (Colombia). *Boletín del Museo del Hombre Dominicano* 10: 15-20.
- Veloz, M., E. Ortega, and P. Pina P.
1974 *El Caimito: Un Antiguo Complejo Ceramista de las Antillas Mayores*. Santo Domingo: Ediciones Fun-

- dación García Arévalo, Inc.
 Versteeg, A. H.
 1999 Archaeological records from the Southern and Eastern Caribbean Area. How different and how similar are they? In *Proceedings of the XVIIIth International Congress for Caribbean Archaeology*, edited by J. H. Winter, pp. 86-104. New York: Rockville Centre.
- Vidal, A.
 2003 La región geohistórica del Caribe. *Revista Mexicana del Caribe* 15: 7-37.
- Watters, D. R., and I. Rouse
 1989 Environmental diversity and maritime adaptations in the Caribbean area. In *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*, edited by P. E. Siegel, pp. 129-144. Oxford: British Archaeological Reports.
- Watters, D. R., and R. Scaglione
 1994 Beads and pendants from Trants, Montserrat: implications for the prehistoric lapidary industry of the Caribbean. *Annals of Carnegie Museum* 63(3): 215-237.
- Whitehead, N. L.
 1990 The Mazaruni Pectoral: A Golden Artifact Discovered in Guyana and the Historical Sources Concerning Native Metallurgy in the Caribbean, Orinoco and Northern Amazonia. *Journal of the Walter Roth Museum of Anthropology* 7: 19-38 .
- Wilson, S. M.
 1993 The Cultural Mosaic of the Indigenous Caribbean. *Proceedings of the British Academy* 81: 37-66.
 2007 Stone Pavements, Roads, and Enclosures in Central America and the Caribbean. In *Proceedings of the XXIst Congress of the International Association for Caribbean Archaeology (1)*, edited by B. Reid, H. Petitjean Roget, and L. A. Curet, pp. 381-389. St. Augustine: The University of the West Indies, School of Continuing Studies.
- Wilson, S. M., H. B. Iceland, and T. R. Hester
 1998 Preceramic connections between Yucatan and the Caribbean. *Latin American Antiquity* 9(4): 342-352.
- Zucchi, A.
 1991 Prehispanic connections between the Orinoco, the Amazon and the Caribbean area. In *Proceedings of the XIIIth International Congress for Caribbean Archaeology (I)*, edited by E. N. Ayubi and J. B. Haviser, pp. 202-220. Reports of the Archaeological-Anthropological Institute of the Netherlands Antilles, no. 9. Willemstad: Archaeological-Anthropological Institute of the Netherlands Antilles.