





Communities in Contact

Essays in archaeology, ethnohistory & ethnography of the Amerindian circum-Caribbean

^{edited by} Corinne L. Hofman & Anne van Duijvenbode

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Foreground image: Coral artefact with human face in relief found at the site of Anse à la Gourde, Guadeloupe, AD 1000-1400 (Photo by J. Pauptit).

Background image: Detail of feature layer with postholes cut into the bedrock at the site of El Cabo, Dominican Republic, AD 1000-1500 (Photo by A.V.M. Samson).

Back cover, left to right: Artistic, life-sized interpretation of the archaeological site El Chorro de Maíta, Cuba , AD 1200-1600 (Photo by A. van Duijvenbode). / Wooden stool or duho recovered from the island of Dominica, dated between AD 1315-1427. Catalogue number ECB40669, Economic Botany Collection, Royal Botanic Gardens, Kew, UK (Photo by J. Ostapkowicz). / Clay Figurine found at the Lavoutte site, St. Lucia, AD 1200-1500 (photo by M.L.P. Hoogland).

Front cover, left to right: Map of Guadeloupe published by Champlain in 1859 (Photo by A.J. Bright). / The Trio-Okomoyana village of Amotopo in the midwest of Suriname in 2007 (Photo by J.L.J.A. Mans). / Frontal view of the upper incisors and canines of individual 72B from the site of El Chorro de Maíta, Cuba, AD 1200-1600, showing intentional dental modification (Photo by H.L. Mickleburgh).

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PREFACE

Communities in contact is the outcome of the fourth edition of Leiden in the Caribbean, a series of symposia organized by the Caribbean Research Group of Leiden University with the aim of bringing together researchers from all over the world to discuss methodological and theoretical advances in Caribbean research. The first edition was organized in Leiden and Paris in 2002 in collaboration with André Delpuech, then associate of the French Ministry of Culture in Paris. This symposium culminated in the edited volume entitled *Late Ceramic Age Societies in the Eastern Caribbean* published by the British Archaeological Reports in 2004. The second and third editions both took place in Leiden in 2006 and 2007 and focused on current archaeological research in the Lesser and Greater Antilles. Special guests to these symposia were William F. Keegan, John Crock, David Watters, Glenis Maria Tavarez, André Delpuech and Jago Cooper.

Leiden in the Caribbean IV has taken a somewhat broader regional perspective (Caribbean islands, Amazonia, Central America) and brought together archaeological, ethnohistorical, and ethnographic studies. The symposium hosted many internationally renowned scholars and students and served as a platform to discuss the diverse and complex topics with which Caribbean archaeologists are confronted today. These topics are elaborated upon and reflected in the three sections constituting this volume: *mobility and exchange, culture contact* and *settlement and community*. The symposium and the volume have been financed by the Netherlands Foundation for Scientific Research (NWO) in the context of the VICI project "Communicating communities" (NWO-no.-277-62-001).

We are grateful to all international participants of the Leiden in the Caribbean IV symposium for their stay in Leiden during which they shared their expertise, ideas and knowledge with us. These are: Emilie Chatrie, Jago Cooper, André Delpuech, Eugenie De Zutter, Sonia Duin, Bernard Grunberg, Michael Heckenberger, José Oliver, Joanna Ostapkowicz, Jaime Pagán Jiménez, Reniel Rodríguez Ramos, Stéphen Rostain, Eric Roulet, Benoît Roux, and Roberto Valcárcel Rojas. Two presenters could unfortunately not participate in the volume, i.e. Eithne Carlin who presented on nested identities in the Guianas and José Oliver who discussed a framework for his upcoming research in the northwestern Dominican Republic. We are, however, delighted that José Oliver has accepted our proposition to write a foreword to the volume. We were also particularly honored with Michael Heckenberger's presence at the symposium and would like to thank him for 'wrapping up' the sessions and critically accessing each of the presentations and the many new ideas that were put forward. His appreciations and critiques are provided in the epilogue to this volume.

The papers presented here have been submitted for review and editorial comments by the Caribbean Research Group (UL). In this respect we would like to thank in particular Arie Boomert, Alex Geurds, Jason Laffoon, Hayley Mickleburgh, Angus Mol and Alice Samson for their excellent job. We would like to acknowledge Stéphen Rostain, Micheline Blancaneaux and Anna Blancaneaux-Flores for their translations of the abstracts to French and Alex Geurds and Isabel Rivera Collazo for revising the Spanish abstracts. Finally, we thank the many students who helped to organize the symposium in March 2010. Special thanks in this respect go out to Rachel Schats, Floris Keehnen, Samantha de Ruiter, Marlieke Ernst and Hedwig van den Berg.

The editors Corinne L. Hofman and Anne van Duijvenbode

Foreword

A key objective of the Leiden in the Caribbean series of symposia is to share and exchange information of current research interests on wide-ranging topics among scholars working in the circum-Caribbean. It is the informal and lively face-to-face exchanges that take place in between and around the formal presentations that are a valuable contribution to Caribbean archaeology. This symposia series affords not only an opportunity for Europeanbased scholars and research students to interact but, equally stimulating, selected guest scholars based in the New World add significantly in what otherwise would be a local exchange. It is in such an informal and international ambiance that ideas are debated; strategies and plans for new angles or insights to on-going projects are gestated or strengthened. The lively question/discussion period that follows each of the symposia sessions gives it a seminar/workshop ambiance.

The twenty-seven different contributions contained within the present volume are an outcome of the Leiden in the Caribbean IV symposium, entitled 'From prehistory to ethnography in the circum-Caribbean and Amazonia' and are representative of the current scholarly activity in the Caribbean and its neighbouring mainland regions.

For the better part of the twentieth century the notion of 'mobility' was largely debated in terms of a dichotomy between diffusion and migration and based entirely on comparative ceramic analyses to the point where ceramic styles 'migrated' from region to region. Peoples were defined largely as a passive vessel or container, a vehicle for the movement or diffusion of ceramic potsherds and styles. From the 1990s the social, political and economic dimensions and the dynamics of the mobility of both human beings and material culture (not just potsherds) through time and space, however, have become central to a much more enriched understanding of the pre- and post-Columbian history of the Caribbean. Moreover trade and exchange, instead of merely the 'diffusion' of things from one place to another, are now firmly rooted in Maussian theories of reciprocity, of what must be kept or be given, on the circulation of not only prestige valuables but also more mundane commodities, and on the effects of this circulation over different scales of time and of space. And, of course, all such exchanges are transactions that engage human beings in social relations.

The archaeological evidence, once focused almost exclusively on pottery, is now of the most diverse nature: stable isotopic analyses of human remains to ascertain whether individuals are local or exotic and to document diet preferences; sourcing the petrological and mineralogical signatures of ceramic and lithic materials to infer patterns of distribution; starch residues to identify and trace the origin and distribution of plant resources. Interest is not only on teasing out the nature of the mobility and exchange, but on the consequences, such as contacts between traders and exchange parties as a process of socio-cultural and bio-cultural transformations. Syncretism, transculturation, assimilation (mimicry, masking) are conceptual tools wielded to contextualize fundamental questions about continuity and change, the rejection or resistance to the new and exotic at one end and/or its negotiated adoption, transformation and incorporation. These are all topics addressed in this volume. In this first decade of the twenty-first century, and clearly reflected in this

volume, a key consequence of all of this re-invigorated approach to mobility and exchange and the resulting cultural contact has resulted in the reopening of the West Indian 'insularized theatre' to a truly pan-Caribbean scope, and not just looking at the north-eastern Venezuela and Guiana as the only theatre of interaction. This opening-up of the radius of action and reaction of the Amerindian Caribbean, to some extent restoring Julian Steward's original Circum-Caribbean theatre, is one of the most exciting aspects of the symposium and captured in various papers in this volume.

Indeed, the contributors to the Culture Contact section in this volume further expand the pan-Caribbean theatre to consider the European and African actors and their material culture, not just on what their impact was upon the indigenous societies but as well how the latter were perceived and portrayed to diverse European audiences. Issues of personhood, embodiment, ethnicity, individual as well as cultural and even multicultural identities of all the actors pre-colonial, colonial and even post-colonial are themes explored by various papers in this book. And by 'actors' I do not mean only human beings, but also the sentient objects (cemis in the shape of duhos, iconic figures) that form part of the socialising network of the Amerindians, as is explored by some of the contributors to this volume. The analyses of ethnohistoric text and narratives by French, English and Spanish colonial authors, are concerned with a number of the issues of culture contact (and impact) just mentioned. In this volume the re-examination of the well-known texts, such as Bishop Las Casas, are given a fresh outlook by focusing not so much on what the text comments about the Caribbean Amerindians, but on why the writer portraved and interpreted them in this or that way. The texts and documentation gathered by the team at the University of Reims and presented in this volume, further enriches our understanding of the complexities of cultural contact in the Caribbean and in the European metropolis.

Mobility, trade, exchange, the circulation of materials, peoples, and ideas and the transformations that can result from cultural contacts, of course, do take place in the context of communities and their settlements, the third topic of research interest covered in this volume. And settlements, of course, are embedded in a natural as well as culturally constructed landscape, not just a sociological one. The papers on this topic do reflect these concerns in terms of expressions of community, of their engagement with each other in their settlements and with their history-laden land-and-seascapes.

I am confident that you, the reader, will find within this pages food for thought, a range of refreshing (multi-dimensional and multi-scalar) perspectives that will resonate with your own research interests.

José R. Oliver University College London

Mobility

and

Exchange

UNRAVELLING THE MULTI-SCALE NETWORKS OF MOBILITY AND EXCHANGE IN THE PRE-COLONIAL CIRCUM-CARIBBEAN

Corinne L. Hofman and Menno L.P. Hoogland

This paper broaches the topic of mobility and exchange from a pan-Caribbean perspective. Using a multi-disciplinary and multi-scalar approach the research presented here attempts to map the movement of people throughout the Caribbean archipelago. It further aims to assess the establishment of local, regional and pan-regional networks of interaction for human mobility and the trade and exchange of goods and ideas at multiple scales in one of the world's prime insular domains. It also highlights the variability and changes that can be observed in the web of social relationships among islanders through time and between communities of varying socio-political complexity. This contribution outlines the VICI project: Communicating Communities, financed by the Netherlands Organisation for Scientific Research (NWO).

Este artículo aborda el tema de la movilidad y del intercambio desde una perspectiva pan-Caribeña. Utilizando un enfoque multidisciplinario y de múltiples escalas, esta investigación intenta de reconstruir el movimiento de poblaciones en el archipiélago. Además, tiene como objetivo evaluar el desarrollo de redes locales, regionales y pan-regionales de interacción para movilidad humana, el comercio y el intercambio de materiales e ideas a múltiples escalas en una de los principales áreas insulares a nivel mundial. También subraya la variabilidad y los cambios que se pueden observar en la red de relaciones sociales entre los isleños a través del tiempo y entre comunidades de diferente complejidad socio-política. Esta contribución describe el proyecto VICI: Communicating Communities, financiado por la Fundación Neerlandesa de Investigación Científica (NWO).

Cet article aborde le sujet de la mobilité et de l'échange selon la perspective pan-caraïbe. En utilisant une approche pluridisciplinaire et à différentes échelles, la recherche présentée ici tente de cartographier les mouvements de population à travers l'archipel de la Caraïbe. Son objectif suivant vise à évaluer l'établissement de réseaux d'interaction locaux, régionaux et pan-régionaux, pour la mobilité humaine ainsi que le commerce et l'échange de biens et d'idées à différentes échelles, dans l'un des principaux domaines insulaires du monde. Il met également l'accent sur la variabilité et les changements qui peuvent être observés dans le tissu de relations sociales des insulaires à travers le temps et entre les communautés de complexités socio-politiques différentes. Cette contribution expose enfin le projet VICI : Communautés Communiquantes, financé par la Fondation Néerlandaise pour la Recherche Scientifique (NWO).

Migration and interaction in the Caribbean: a retrospective

As early as the 1950's, Benjamin Irving Rouse, one of the founding fathers of Caribbean archaeology, basing himself on a framework of cultural taxonomy, envisioned that the Caribbean islands were settled in a stepping-stone mode from north-eastern South America around 6000 BP (see Curet 2005 for an extensive review of this issue). He suggested that cultural diffusion was the outcome of population movement or migration from the mainland into the islands, drawing on archaeological, linguistic and biological lines of evidence. Excepting the colonization by early Lithic and Archaic Age peoples from different areas in South and Central America (Belize), Rouse claimed that the islanders originated in the South American coastal zone. Besides population movement and local development Rouse also recognized the idea of interaction to explain changes in the archaeological record (Rouse 1951, 1992). In this sense, he defined so-called passage areas in which interaction between neighbouring islands existed within what he called the 'Caribbean Culture Area' (Rouse 1986, 1992). However, operating at the macro-scale of cultures or supra-cultures (known as 'series' and 'subseries') hampered the observation at the micro-scale of local groups or communities identifiable by 'styles' or 'complexes' (see also Curet 2005; Curet and Torres 2010). Michael Heckenberger (2005) suggested that this massive population movement was the outcome of a diaspora of Arawakan-speaking people out of the Amazon via the floodplain areas of the Negro and Orinoco rivers, and from the Amazon river into the Caribbean and Guiana. His ideas corresponded in general to the distribution patterns drawn by Donald Lathrap (1970). Several hypotheses have been put forward over the past decades as an explanation for migration from the mainland into the islands. Warfare and population pressure on the mainland were suggested as possible push factors (Roe 1989), the economic attractiveness of the new island territories was advanced as a pull factor (Keegan 1985) and the flexible adaptation to available resources was proposed as a more opportunistic model (Siegel 1991). The upholding of a lifeline with coastal South America to shape and maintain demographic and social fitness among the colonizing islanders, comparable to the Lapita situation in Oceania, has been used to explain the quick dispersion of Saladoid ceramics in the Lesser Antilles and Puerto Rico as well as the manifestation of island imagery and mainland material items in the archaeological record of the early Ceramic Age insular Caribbean (Hofman et al. 2011; Keegan 2004; Kirch 1988, 2000; Watters 1982).

Migration in the Caribbean has thus long been perceived as a rather uni-linear or unidirectional event. Breaking away from the unidirectional hypothesis a multi-linear, reticulate and more chaotic model for island settlement has been proposed by Keegan (2004) by which direct crossing from the South American mainland to Puerto Rico and the northern Lesser Antilles are envisioned, downplaying the traditional stepping stone-model via the Lesser Antilles (e.g. Curet 2005; Hofman *et al.* 2010, 2011; Fitzpatrick and Callaghan 2009; Keegan 2004, 2009).

However, the mental template of a sole north-eastern South American origin has blinded the potential of macro-regional connections with other neighbouring continental areas like coastal Central America, Colombia and Western Venezuela advocated by Julian H. Steward (1948) and followed by others (see Meggers 1979; Sanoja and Vargas Arenas 1999; Veloz Maggiolo 1980 and see Angula Valdés 1988; Hoopes and Fonseca 2003 for the concept of Isthmo-Colombian area). Steward defended the concept of a 'Circum-Caribbean culture area', which united the Caribbean and Intermediate Culture Areas which directly derived one from the other, and believed in a more heterogeneous dispersal of people into the Caribbean (see also Geurds, this volume).

The idea of a circum-Caribbean area (Figure 1) to study the mainland-island connections and the web of interlocking social networks that may have been at play across the Caribbean Sea recently had a revival (Hofman and Bright 2010, Hofman and Carlin 2010). For Rodríguez Ramos (2010) this geohistorical area, which he had called the Greater Caribbean area would emphasize the idea of potentially stronger relationships having existed between the Antilles and the Ishtmo-Columbian area rather than with north-eastern South America. We would rather leave this open for discussion and it is our contention here, to draw a much more dynamic picture of the communities that entered the archipelago more than 6000 years ago through a continuous process involving exploratory expeditions, exchange of goods, ideas and information, and small-scale movements from the various areas in continental America culminating in the upholding of social relationships between Archaic and Ceramic Age (or pre-Arawak and Arawak, see Keegan and Rodríguez Ramos 2004) communities and later between Ceramic Age communities throughout the region (Hofman et al. 2006). Human mobility and the exchange of goods and ideas were at the basis of the interaction networks which functioned at local, regional and pan-regional scales (e.g. Berman and Gnivecki 1995; Curet 2005; Curet and Hauser 2011; Hofman and Bright 2010; Hofman et al. 2007; Keegan and Diamond 1987; Watters and Rouse 1989).

A pan-Caribbean web of social relationships

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 the islands (see also Hofman 2006; Hofman and Bright 2010; Hofman and Carlin 2010; Rodríguez Ramos 2010). This would have initiated processes which are recognized as colonizing migrations, resource and seasonal mobility, cross-community mobility, residential mobility, inter-community mobility (feasting, raiding and exchange and also including post-mortem mobility) to name a few (see e.g. Bellwood 2004; Curet 2005; Hofman et al. 2006; Keegan 2006; Kelly 1995; Manning 2005; Moch 2003; Moore 2001; Sellet et al. 2006). Perishable and non-perishable goods, ideas and information as well as cultural and social practices would have been transported over long distances and webs of social relationships were established at various scales amalgamating over time to become the landscape of plurality encountered by the Europeans in the late fifteenth century (see also Rodríguez Ramos 2010). Processes of fission and fusion and changing socio-political organization would have echoed fluid social ties reflecting communities most likely based on kinship, marriage or community membership. Through these networks social, political and economic relationships were created, maintained and abolished and these were continuously subject to shifting and expanding group territories. Apart from ensuring demographic fitness, the social networks would have provided access to a range of basic needs and have promoted the formation and maintenance of socio-political alliances through marriage and ritual services, but on the contrary could also have entailed anti-social strategies such as negative reciprocity (see Mol, this volume). The exchange of utilitarian wares and socially valued goods would have been accompanied in



Figure 1 The Caribbean (is)landscape.

these interaction spheres by the sharing of myths, tales, songs, dances, ritual knowledge and experience embedded in native cosmovision (see also Arvelo-Jiménez and Biord 1994; Boomert 2000; Morey 1976; Mansutti Rodríguez 1986).

A multi-disciplinary approach towards the multi-scale networks of mobility and exchange

In order to comprehend the mechanisms at play in building and maintaining the multiple networks in which human mobility and the exchange of goods and ideas took place at various scales in the archaeological record of the Caribbean, a multi-disciplinary approach has been designed within the VICI project combining archaeology, archaeometry, bioarchaeology, ethnohistory and ethnography (Hofman 2006). Recently, the integrated application of pioneering archaeometric methods and techniques has provided promising results in field of Caribbean archaeology (see Hofman *et al.*, eds 2008, for an extensive review and Curet and Stringer 2010).

The aim of our approach is to broaden the understanding of the socio-cultural parameters that may have influenced the movement of people and the establishment of interaction patterns throughout the circum-Caribbean. This approach is being applied to map artefact distribution patterns on local, regional and pan-regional scales as well as to contextualize the origin of people and goods from a site level perspective. The combination of the resulting data is expected to expand our knowledge on the nature of the networks, how they interlock, as well as on the variability and changes that would have occurred in such social relationships through time and how these were articulated between communities of differing socio-political complexity. The multi-disciplinary approach includes studies of the iconography, cultural associations and spatial distributions of material culture remains, studies into mortuary practices and palaeopathology, starch grain analysis, functional analysis of artefacts and the application to determine the provenance of raw materials and stable isotope analysis to determine the dietary patterns and the origin of buried populations. Such data on burial assemblages representative both in time and space are imperative to map the network of human mobility and thereby begin to fathom the mechanisms at play (e.g. exchange of marriage partners, capture of enemies, post-mortem mobility) over time, across different socio-political settings and at multiple scales.

Networks of the circum-Caribbean: pan-regional, regional and local distributions of material culture remains

Several types of (raw) material such as ceramics, lithics, shell, bone, wood and *guanín* (a gold-copper alloy) likely circulated within local, regional and pan-regional networks throughout the circum-Caribbean synchronically or at various points in time. Ceramics, lithics and *guanín* are the most viable categories for analysis given their ubiquitous (ceramics/lithics) or highly informative nature (*guanín*). However, much of the research until now has relied on formal stylistic similarities between such objects, leaving a void as to their social meaning (see also Geurds, this volume), but suggesting some degree of community interaction and the existence of networks at various scales. The social meaning and value of such objects in a particular interaction network is dependant on the nature and type of the social sphere they are part of and used in, i.e. the kind of social distance (Mol, this volume).

In order to study the movement of objects and the identification of distribution patterns in their raw state or as finished objects it is imperative to combine artefact style studies with provenance data at all scales of analysis. Although the current knowledge on the provenance of raw materials and objects is still in its infancy in the circum-Caribbean region when compared to other regions worldwide (e.g. Bishop *et al.* 1988; Dickinson *et al.* 2000; Stoltman 1989), there are some notable exceptions (e.g. Boomert 2000; Cooper *et al.* 2008; Curet 2005; Harlow *et al.* 2006; Helms 1987; Hofman *et al.* 2008; Knippenberg 2006; Newsom and Wing 2004; Rodríguez Ramos 2007; Rodríguez Ramos and Pagán Jiménez 2006; Pagán Jiménez 2006, this volume; Siegel and Severin 1993; Valcárcel Rojas *et al.* 2008; Valcárcel Rojas *et al.*, this volume; Watters and Scaglion 1994). The outcome of these studies has started to advance a holistic perspective to the patterns of artefact distribution, interaction and inter-societal engagements that existed at different scales through time as illustrated by the following examples.

Pan-regional distributions (Figure 2)

The earliest Ceramic Age lapidary items in the Antilles made of greenstone materials such as nephrite, jadeitite and serpentinite (referred to as 'true jade' and 'social jade' by Rodríguez Ramos 2010) have obvious iconographic counterparts in the Costa Rica area. They represent condors or king vultures (see Boomert 2000 and Rodríguez Ramos, this volume) with trophy heads. On the basis of the similarities in the two areas, Rodríguez Ramos (2010) hypothesized that macro-regional social interactions existed between the Isthmo-Colombian area and Puerto Rico and maybe the Lesser Antilles during early Huecoid and Saladoid times, representing either the movement of people, commodity exchange or the flow of ideas. In the period following the emergence of the Huecoid and Saladoid, the majority of the exotic raw materials were replaced by local rock types and foreign iconographic themes, very often representing mainland fauna were substituted by insular motifs (see also Hofman *et al.* 2007; Roe 1989).



Figure 2 Pan-regional distributions of greenstone and guanín objects.

Another example is that of the distribution of greenstone (often nephrite) frog pendants or *muiraquitão* which circulated between Amazonia, the Guianas and the Antilles from Saladoid times onwards (Boomert 1987; Rostain 2006).

The presence of jadeite at Greater and Lesser Antillean sites has been documented for early to late Ceramic times (Rodríguez Ramos 2010, this volume). By means of X-ray diffraction Harlow et al. (1996) postulated a possible Guatemalan provenance for celts from Antigua and Vieques. Recently, however, jadeite sources have also been identified in Hispaniola and Cuba raising doubts over the Guatemalan origin (Cárdenas Párraga et al. 2010; Garcia Casco et al. 2009). Nevertheless, it is obvious that jade moved through the Greater and Lesser Antilles throughout the Ceramic Age, linking communities in these places. The absence of production debris suggests that celts and axes circulated as finished objects. The occurrence of jadeite celts all the way down to the island of St. Lucia and maybe even further south during Late Ceramic Age times suggests that a network in which these objects circulated was in place and even expanded in the centuries prior to colonization. The axes may have formed part of a circulation system by which they were transferred between elites. In the latter case they most likely formed part of an exchange network tying together the Greater and Lesser Antilles as supported by the many ritual items which circulated through the islands at the same time (Hofman and Hoogland 2004; Oliver 2009; see also Ostapkowich et al., this volume).

A last example is that of the occurrence of *guanín* objects in the Greater Antilles. The distribution of these items also evinces long-distance relationships with the Isthmo-Colombian area (Valcárcel Rojas *et al.* 2008). Fragments of hammered ornaments made of a type of gold and pendants made of *guanín*, are found in Puerto Rico and Vieques in Saladoid deposits and in the Dominican Republic and Cuba during the Late Ceramic Age (Siegel and Severin 1993). Stylistic analysis places the origin of some of the *guanín* pieces in mainland South America, namely in the Tairona and Zenú areas of Colombia. A comparable piece is known from the Mazaruni River area in Guyana (Whitehead 1996) which may suggest that trade of these objects also took place along the coast or rivers of northern

South America. It is very likely that the trade of *guanín* with the Colombian ateliers continued during the early colonial period as is evidenced by the site of Chorro de Maíta in north-eastern Cuba where numerous gold objects have been found as grave goods in burials (Valcárcel Rojas *et al.* 2008; Cooper *et al.* 2008; see also Valcárcel *et al.* this volume).

Regional distributions (Figures 3 and 4)

The spread of Chican Ostionoid ceramics and ritual items from Puerto Rico and Hispaniola into the Lesser Antilles is suggestive of the existence of firm social relationships between these two areas during the Late Ceramic Age (Hoogland and Hofman 1999; Crock 2000; Crock and Petersen 2004). Objects as shell inlays (mostly of Lobatus sp. [formerly known as Strombus sp.]), masks (guaizas), stone three-pointers, and ritual paraphernalia associated with the cohoba ritual are found throughout the Lesser Antilles as far south as the Grenadines. The large stone three-pointers, often referred to as *zemis*, showing anthropozoomorphic features, considered to be the representations of ancestral spirits, were used by the Taíno caciques as legitimizing devices, advocating esoteric relationships with Greater Antillean shamans and ideology (see also Allaire 1990; Crock 2000; Curet 1992; Hofman 1997; Hofman et al. 2007; McGinnis 1997; Pané 1999 [1571]). Some of the objects could be imitations or copies of Taíno items and would reflect the syncretic assimilation of Taíno iconographic features into the stylistic norms of the area (Allaire 1990; Hofman 1997; Hofman et al. 2007). Such imitations or copies have been recovered from the islands of Martinique and St. Lucia. One of these artefacts is a seated female pottery figurine, interpreted as a drug-inhaling stand, found at the Lavoutte site in north-eastern St. Lucia (Bullen and Bullen 1970; Hofman and Branford 2009), which may be a local imitation of the wooden cohoba stands of the Greater Antilles. The transportation of a fair number of these ritual objects towards the Lesser Antilles has been seen as reflecting alliance building, feasting or esoteric interaction, but might also be an expression of antagonism (raiding, appropriation) (Hofman et al. 2008; Oliver 2009).



Figure 3 Regional distributions of Taíno ritual paraphernalia.



Figure 4 Regional distributions of mainland related Cayo pottery in the southern Lesser Antilles.

The identification of *caraípe* (burned bark) temper ceramics of the Cayo complex in the southern Lesser Antilles presumes contacts with the mainland of South America during the Late Ceramic Age and early colonial period (Boomert 1986, this volume). Cayo pottery is distributed between Grenada and Basse-Terre, Guadeloupe, with St. Vincent and Dominica being the central nodes of this interaction sphere (Allaire 1994; Boomert 1986, 1995, 2009; Bright 2011; Kirby 1974). Caraípe is not native to the islands but to the South American mainland and stylistically Cayo pottery is affiliated to the Koriabo ceramics of the Guianas. Its distribution in the Antilles suggests relationships with northern South America. On the other hand, some stylistic affiliations also exist between particular Cayo vessel shapes and decorative motifs and Chican Ostionoid ceramics. In addition, the presence of Taíno ritual paraphernalia, i.e. a snuff inhaler of manatee bone in the Cayo assemblage of Rivière de Roseau in Basse-Terre, Guadeloupe, suggests that relationships also existed with the north-eastern Caribbean (Hofman et al. 2007; Richard 2001). This pottery complex has been associated with the enigmatic Island Carib occupation of the Windward Islands. Their presence on the islands is seen as the result of a dual process of population movement and interaction with communities on the South American mainland on the one hand and the taking on of local traits on the other. The Island Carib were ethnically and socio-politically fully mainlanders, but were linguistically and to a certain extent culturally deviated from the mainland Carib. Their patterns of settlement, kinship and political authority were fully identical to those of the latter (Boomert 2000; Whitehead 2005).

Local distributions (Figure 5)

Flint was procured from Long Island, Antigua as early as the Archaic Age. Using Inductively coupled plasma mass spectrometry, Knippenberg (2006) has provided a detailed analysis of the local or micro-regional distribution of this raw material through time. Its exploitation and supply commenced during the Archaic Age in the area between Antigua and Anguilla with a few pieces known from Puerto Rico. This network expanded during the Saladoid/



Figure 5 Local distributions of raw materials (flint, St. Martin greenstone and calci-rudite) in the northern Lesser Antilles in the Archaic and Ceramic Ages.

Huecoid and post-Saladoid periods as far south as Martinique, St. Lucia and potentially St. Vincent. However, in these islands only small quantities of flint have been found among the otherwise abundantly represented jasper, which is locally available there. The Long Island flint source can be considered a major node in the north-eastern Caribbean interaction network (including the northern Lesser Antilles and Puerto Rico). The source must have been discovered by the earliest insular settlers who traversed and explored the area around 4000 to 3000 BP. It has been suggested elsewhere that the sites on Antigua, Barbuda, Saba, St. Martin, Anguilla and possibly also Puerto Rico, formed part of a yearly cycle in which communities to-and-froed between the islands in a form of archipelagic resource mobility and in which the Long Island flint source assumed major importance (Hofman and Hoogland 2003; Hofman *et al.* 2006). The high concentration of Archaic Age sites on Antigua and Long Island themselves testify to the intensity of flint exploitation around the source (de Mille 2005; Knippenberg 2006, this volume; Nodine 1990; van Gijn 1993).

Subsequent Huecoid and Saladoid communities which partially developed locally out of the former and amalgamated with newcomers from various parts of South and Central America. These mainland communities maintained regular social relationships with the north-eastern Caribbean through expeditions, explorations and voyages before colonizing the area (see also Curet 1995; Hofman *et al.* in prep.). It is not surprising that the Early Ceramic Age sites are located in exactly this same area (Punta Candelero, El Convento, Teclá and Hacienda Grande (Puerto Rico), La Hueca/Sorcé (Vieques), Hope Estate (St. Martin), Trants (Monserrat), Morel (Grande Terre, Guadeloupe), Cathédrale and Gare Maritime in Basse-Terre (Guadeloupe) Talisseronde and Folle Anse (Marie-Galante). Both the Huecoid and Saladoid are known to have exploited the Long Island flint source extensively, each employing their own technique (Bérard 2008; Rodríguez Ramos 2010). Competition over the flint sources would have brought about emulative behaviour expressed in the abundant stylistic repertoire and material culture in both cases (Hofman *et*

al. in prep.). During this same time period sources of greenstone and calci-rudite started to be exploited on the island of St. Martin. The Hope Estate site appears to have been an important production site for the greenstone source at Hope Hill. Knippenberg (2006) postulated that a vast interaction network existed for this material and others within the north-eastern Caribbean throughout the Ceramic Age, though with shifting boundaries over time. Based on the presence and absence of raw materials and fabrication debris he identified the core areas of production and redistribution of the finished objects. This area coincides with that of the Long Island flint. Crock (2000) hypothesized on the basis of similar data that at the end of the Ceramic Age, Anguilla would have formed the core of an exchange system that would have functioned as a political authority or peer polity encompassing a number of settlements or even a number of islands. Crock (2000) suggests that one of these polities was formed around the islands of Anguilla and Saba together with Montserrat, Nevis and possibly St. Barths and St. Kitts. Using network analysis, Mol (2010) recently argued that not Anguilla but Saba may have been the major node in this multi-island system from which control was exercised over the St. Martin and Anguilla sources as well as over the distribution of the raw materials and finished objects throughout the region. The site of Kelbey's Ridge 2 on Saba is known to have been an outpost of a Hispaniolan cacicazgo in the fourteenth century (see Hoogland 1996; Knippenberg 2006), and one of the single sites which was still occupied in the northern Lesser Antilles during that time (Hofman and Hoogland 2004; Hoogland and Hofman 1999)

Mobility and exchange in the Lesser Antilles: a site level perspective

Recent research in the Lesser Antilles has provided detailed site level information on the provenance of people and (raw) materials, procurement strategies, and technological skills. These data have proved crucial in getting to grips with the underlying mechanisms, socio-cultural parameters and choices that may have influenced intra-and intercommunity social relationships in space and time. The following three case studies from Guadeloupe and Saba illustrate the various types of mobility and exchange that have operated in the area during the Archaic and Ceramic Ages and the possible nature of the underlying social relationships.

Archipelagic resource mobility (Figure 6)

The Archaic Age site of Plum Piece dates to 3200 cal BP and is situated at an elevation of 400 m amsl in the interior forest of the island of Saba in the northern Lesser Antilles. The restricted exploitation of seasonally bound species (i.e. the mountain crab (*Gercarcinus ruricola*) and the *Audubon* shearwater (*Puffinus lherminieri lherminierii*), the remains of non-durable shelters, and the number of abandoned tools (large grinding stones) in the refuse midden indicate that Plum Piece was a home-base campsite that was probably successively occupied during a particular season when the main subsistence resources could easily be caught. The limited investment in building and refuse disposal behaviour, the low energy expended on exploiting food resources, and a forest-oriented subsistence suggest that specific resources were being targeted. Based on the location of the site and the type of artefacts recovered (flint scrapers, shell adzes, multi-purpose stone tools), it is suggested that woodworking for the making of canoes and the gathering and managing of plant resources was taking place. Flint at Plum Piece was imported from Long Island, Antigua



Figure 6 Yearly mobility cycle in which the Plum Piece occupants moved between Antigua and Puerto Rico.

(Knippenberg personal communication). The near total lack of cortex on the flint material suggests that cores arrived at the site in pre-worked condition. However, the scarcity of cores suggests that they were transported further to enable the tools to be made at other locations (Barbuda, St. Martin, Anguilla and possibly Puerto Rico) visited by the early Archaic Age peoples who were part of a yearly mobility cycle. From this time on, the source on Long Island functioned as a major node in a micro-regional network which included part of the Lesser Antilles and Puerto Rico and which operated into pre-contact times.

Plum Piece likely functioned alternately and complementarily with campsites and settlements on other islands. The occupants would have maintained a yearly mobility cycle that took advantage of the seasonality of biotic resources across the archipelago in those areas that could be targeted for non-subsistence activities: a form of archipelagic resource mobility in its broadest sense. Seasonality markers such as animal cycles (breeding season of birds, nesting of turtles, migration of land crabs and spawning time of reef fishes), the succession of dry, moderately humid and wet seasons, hurricanes, the navigability of the open sea, and the changing configuration of the sun, moon, and stars, all probably contributed to shape the northern Lesser Antilles as a 'geo-cycle' in which Archaic Age subsistence, settlement, and specific resource procurement rotated (Hofman *et al.* 2006).

Inter-community mobility (Figure 7)

The Late Ceramic Age occupation at the site of Anse à la Gourde dates from AD 1000 until 1350. An earlier component dates to the late Saladoid period, i.e. AD 500; burned posts and ash layers suggest the sudden abandonment of the settlement after this period and a subsequent re-occupation later on in time. The Saladoid settlement was located closer to the seafront and coastal erosion has erased large parts of it. The site of Anse à la Gourde is situated on a limestone plateau in the north-eastern part of the island of Grande-Terre, Guadeloupe in the northern Lesser Antilles. The peninsula of Pointe des Chateaux and the islands of La Désirade and Iles de la Petite Terre are dotted with smaller and larger settle-



Figure 7 Networks in which the Anse à la Gourde inhabitants were involved during the Late Ceramic Age.

ments as well as special activity sites (de Waal 2006). The rocky island of La Désirade is located at visible distance and in front of the site there is the outcrop of L'Eperon. Both have been interpreted as important meteorological and astronomical features for the inhabitants of the site, particularly for predicting hurricanes (Duin in prep.). Radiocarbon dates point to three occupation phases during the Late Ceramic Age time span, i.e. around cal AD 900-1100, 1100-1250, and 1250-1350. The ceramic assemblage belongs to the Mamoran/Troumassan Troumassoid to early and late Suazan Troumassoid subseries and a small portion of the ceramics bears Cayo and Morne Cybèle traits (Delpuech *et al.* 1999; Hofman *et al.* 1999, 2001). The ceramics obviously reflect a diversity of influences from both the northern and southern Lesser Antilles suggesting that Anse à la Gourde was situated in the transition zone between two influence spheres, where ceramic styles of different origins amalgamated.

The settlement is surrounded by a doughnut shaped refuse midden. Houses and other domestic structures, hearths and refuse pits as well as a number of auxiliary structures such as drying racks, hammock supports and *barbacoas* made up the habitation area which borders a vacant space, possibly used as a *plaza*. There were approximately 24 round and oval houses, with diameters between 5 and 12 m and the palimpsest of these structures imply intensive rebuilding in the same area over many centuries. Around 83 burials containing 92 individuals are located in clusters near postholes indicating that some of them were situated under house floors and others just outside the houses. However, there is no firm evidence so far that the postholes and burials were contemporaneous. Some of the burials are located in postholes suggesting that they were purposely deposited in older (ancestral) constructions. The diverse and complex mortuary behaviour (primary, secondary, single, and composite burials, manipulation of bones) reflects internal differentiation and personalized treatment of the dead (Hoogland *et al.* 2001). The deceased individuals mostly comprise adult individuals; children seemingly belonged to another category of social persons or to no category at all and therefore received a different mortuary treatment than the adults

and were possibly buried outside the village. A quarter of the females and males is of nonlocal origin, and originated from one of the neighbouring limestone or volcanic islands (Hoogland et al. 2010; Laffoon and de Vos, this volume). There is no differentiation in burial practices between the local and non-local individuals. However, some of the non-local females are buried with non-local goods such as greenstone from St. Martin, flint from Long Island, Antigua, and one female was found with more than a thousand shell beads of Lobatus gigas (formerly Strombus gigas), all of similar size. The latter are assumed to be of non-local fabrication because no production debris for these beads was found at the site (Hoogland et al. 2010). Their origin is not known, but there is evidence in the region that specific sites were specialized in the production of such beads (Carlson 1995). Strings of hundreds to several thousands of small, flat shell beads of equal size known as uruebe or quirípa formed a major social valuable exchanged during early colonial times between the *llanos* of Colombia and Venezuela to as far as Trinidad, the Lesser Antilles and the coast of the Guianas (Gassón 2000). Whether the pre-colonial specimens represent objects that formed part of an exchange cycle such as the early colonial quirípa is of course not self-evident but plausible (see also Boomert 2000; Hofman et al. 2007).

Next to these foreign burial goods, a range of non-local lithic artefacts such celts, axes, adzes, scrapers and polishing stones made of greenstone and calci-rudite from the St. Martin/Anguilla region, flint from Antigua and green pebbles from La Désirade were transported to the site as raw materials or finished objects (Knippenberg 2006). Also tools and ornaments made of exotic animal bone dog (Canis familiaris), agouti (Dasyprocta leporina), opossum (Didelphis sp.), armadillo (Dasypus sp.), and manatee (Trichechus manatus manatus) likely originated from the mainland (Grouard 2001). Such objects may have been part of a shaman's ritual regalia (see also S. Duin, this volume). These are probably to be considered common exchange items as they have also been encountered at other sites in the region (Fitzpatrick et al. 2009; Newsom and Wing 2004). Several ceremonial items are reminiscent of the Greater Antillean communities and the same is true for fragments of jadeite celts and axes. The fair number of broken three-pointers at the site of Anse à la Gourde has been hypothesized as the neutralization of instruments of Taíno cacical power acquired through looting or raiding (Hofman et al. 2008). Similar objects with the tips broken off are known from the contemporaneously occupied site of Morel, also on Guadeloupe, and from the so-called *batey del cemí* in Tibes, Puerto Rico (Walker 2010). Here they have been found associated with the Elenan Ostionoid occupation of this ceremonial centre and were found beneath the stone pavements of the *batey*. They may have been intentionally broken or 'killed' in ritual sacrifice and deposited as caches under the pavement.

The layout of the Late Ceramic Age settlement at Anse à la Gourde, distribution of burials and mortuary treatment and the nature of the material culture remains sketch a picture of a small-scale community in which a close relationship between the living and the dead persisted over time. The worship of ancestors was an important aspect of the worldview of this and other insular communities and this may be reflected in the continuous occupation and re-occupation of the same locales, the rebuilding of structures and the interment of kin on ancestral grounds in the context of the household. This would strengthen the idea of social memory whereby people rebuild their houses and bury their dead in the same location for many centuries (Climo and Cattell 2002; Hodder and Cessford 2004; see also Morsink 2006; van den Bel and Romon 2010; Hofman and Branford 2009 for application to the Caribbean). The multi-stylistic pottery repertoire and the recurrent presence of foreign lithic materials and artefacts from long used source areas accentuate the integration of the Anse à la Gourde community in a regional social network thousands of years old. This network was made up of smaller and larger interaction spheres in which people, perishable and non-perishable goods, ideas and information as well as cultural and social practices merged over time. Kinship systems and residence rules would have played an important role in determining pre-mortem and possibly also post-mortem mobility patterns. Anse à la Gourde could well have functioned as an ancestral burial ground where people from the neighbouring villages and hamlets were buried next to the inhabitants of the settlement over a long period of time.

The rise and decline of an outpost colony (Figure 8)

The small Saban pre-contact site of Kelbey's Ridge 2 dates to AD 1250-1400. Due to its elevated position, at 140 m amsl, the site provides a good view of the neighbouring islands of the northern Lesser Antilles and control can be exercised over a fair stretch of sea. The 2000 m² Saba Bank, known for its rich fishing grounds, is situated in the vicinity of the island. The site consists of a long curved scatter along the ridge with dirt swept towards the back of the residential area. The core of the habitation area comprises a trajectory of five small round houses and cooking huts and four large hearths containing large numbers of partly burned faunal remains of terrestrial animals, fish and shell. This suggests that they were used as cooking or roasting fires: *barbacoas*. Many of the fish species identified were indeed caught on the Saba Bank (Hoogland 1996).

The seven burials are located under the house floors. They comprise ten individuals, namely three adults and seven children, pointing to a high infant mortality. The burial ritual is varied and complex and consists of both primary and secondary burials; two of the seven burials are composite, containing an adult with the remains of one or two children. Strontium isotope analysis suggests a heterogeneous origin of the Kelbey's Ridge 2 population (Laffoon and Hoogland 2011). One of the burials is that of a female individual of more than 30 years old showing several examples of trauma throughout the skeleton (Weston, personal communication). The individual had four well-healed depressed fractures on the cranial vault, which all displayed a similar degree of healing, suggesting that they were contemporaneous. In addition, there are bilateral fractures of the radius and ulna, which were also well-healed and displayed a similar degree of healing, suggesting they also happened at the same time. If the latter fractures occurred simultaneously, one can visualize a scenario whereby the forearms were fractured as they were raised and crossed, distal right shafts over left proximal shafts, to protect the head from a succession of blows. Depressed skull fractures are caused by blunt-force trauma and usually result from being struck on the head by a weapon, though punches and kicks of sufficient force can also cause these injuries. This kind of trauma infers that interpersonal violence has occurred.

The many non-local artefacts coming from the neighbouring islands of Antigua, Anguilla and St. Martin suggest integration into the local north-eastern Antilles network, similar to what was evidenced for the earlier Anse à la Gourde site. At this point in time the network only operated in the Leeward Island area, and only a few islands were occupied. The ceramic assemblage is stylistically affiliated to the Chican Ostionoid subseries of the Greater Antilles and more specifically to the Boca Chica style from eastern Hispaniola. Compositional analysis using X-ray fluorescence revealed that the majority of the pottery is manufactured of local volcanic clays from Saba and neighbouring island St. Eustatius. A



Figure 8 Networks in which the Kelbey's Ridge 2 inhabitants were involved.

few fragments, though, are probably Greater Antillean imports (Hofman *et al.* 2008). The ceremonial paraphernalia include a snuff inhaler of manatee bone in the shape of a fish clearly reminiscent of the Greater Antillean snuffing tubes (Hoogland and Hofman 1999). The shape of the fish may be suggestive of the importance of fishing for the inhabitants of this site (see also Oliver 2009).

On the basis of its material culture affiliations, the provenance of certain materials and goods, the demographic composition of the population and the heterogeneity of the isotope signatures of the buried population, the settlement at Kelbey's Ridge 2 can be seen as an outpost of one of the Taíno cacicazgos. The reasons for occupying the tiny island of Saba during this episode may be fourfold (see also Hoogland and Hofman 1999). First, a group originating from the Greater Antilles and fleeing social and/or political instability in the area could have settled in the northern Lesser Antilles. This movement would have involved a small group of Taíno colonists or pioneers and would have entailed the incorporation of this small island into the Taíno social sphere. The trauma found on one of the buried individuals points to interpersonal violence which occurred at least five years prior to death. Although domestic violence cannot be discounted, it is very well possible that the trauma was the result of violent aggression from outside (warfare). A second option may have been the desire to establish a supportive base or gateway community in the Leeward Islands in order to control one of the major routes of exchange and communication between the Greater Antilles and the South American mainland. This matches the general Late Ceramic Age settlement pattern also seen on other islands. It is noteworthy that several sites in south-central Puerto Rico equally present Boca Chica style ceramics. These sites are situated in the hills and along the coast, and the occurrence of this pottery has been interpreted as the result of exchange or possibly as reflecting the character of these sites as Hispaniolan outposts (Lundberg 1985; Torres 2010). Third, economic motivations could have evolved from a need to obtain specific resources through the exploitation of the more extensive fishing grounds of the Saba Bank and similarly the Anguilla Bank and the Virgin Islands. Anegada provides a complementary situation where salt apparently was collected for preserving fish (Lundberg 1985). A last possibility entails the combination of all these factors, in which the first option represents an incentive for colonization, whereas the second and third options legitimize the existence of this small outpost largely socio-politically and economically dependent on the Taíno heartland. The high infant mortality and the relatively short occupation span of the site (approx. 150 years), however, suggest that this outpost ultimately failed.

Discussion

The existence of highly mobile communities and interlocking interaction networks in the Caribbean mirrors the cultural plurality of the pre-colonial social (is)landscape, formerly downplayed in a uni-linear approach which postulated a non-dynamic or rather slow-moving migratory pattern that in fact goes against all we know of how these societies lived on the mainland (Hofman and Carlin 2010; Duin 2009, R. Duin, this volume; Mans, this volume). People, goods and ideas moved at high speed through the Caribbean at various moments in time during which cultural boundaries between communities were doubtless being constantly shifted and negotiated, adopted and rejected. Some social networks were created, altered and rapidly abandoned; others persisted for thousands of years. The mechanisms underlying this complex of contacts are often difficult to grasp but they are certainly diverse, dynamic and multi-linear.

The diverse geological structure of the Caribbean, reflected in its irregular distribution of natural resources, may have necessitated procurement strategies targeting the wider region for less easily attainable materials but stimulated craft specialization on those materials to which communities had easy access. Although communities were economically rather independent and self-sufficient, they obviously specialized in certain products for the purpose of exchange and maintaining social relationships with neighbouring communities, comparable to the situation in the Guiana's (e.g. Rostain 2006).

The presence of raw materials, tools, ornaments and iconographic themes in the islands originating from the mainland(s) during the initial occupational phases of the islands may reflect linkages or 'lifelines' that were considered to be crucial in times of environmental hazards or just to provide the demographically unstable colonies with suitable marriage partners, thus acting as a safety net (Hofman et al. 2007; Keegan 2004; Kirch 2000; Moore 2001). The establishment of firm interaction networks in the Antilles during the Archaic Age, such as is the case around Long Island for the sourcing of flint material, has proved to be essential in the colonization and development of the north-eastern Caribbean micro-region (Leeward Islands to Puerto Rico). Huecoid and Saladoid communities developed and settled in this region from 400 and 200 BC onwards. They participated in an extensive network of social relationships operating over long distances, i.e. the Antilles, northern South America, the Isthmo-Colombian area and coastal Central America (Hofman et al. 2007; Rodríguez Ramos 2010; Rodríguez Ramos and Pagán Jiménez 2006; Siegel and Séverin 1993). The cultural transformations associated with the end of the Saladoid era are crucial for understanding the socio-political, economic, and ideological situation of the succeeding periods. At first, stabilized living conditions afforded by adaptation to the natural and social environment led to an increase of settlement stability and a differential use of the landscape and the formation of localized micro-regions. Communities acted independently with respect to resource procurement and social matters. Local artefact styles developed across the archipelago and ceramic style zones emerged reflecting ties between communities on a single island but also across multiple islands. An important web of social relationships was established between the northern Lesser Antilles and Puerto Rico and Hispaniola. The role of jadeite celts and axes within this circulation system persisted. The absence of production debris suggests that these items were transported as finished objects either through direct procurement or down-the-line exchange and most likely formed part of an exchange network tying together communities on a regional level. This is also supported by the many ritual items which circulated throughout the islands (see also Ostapkowicz et al., this volume). These items, whether exchange objects or copies, may be regarded as social valuables (probably in the same vein as the jadeite celts and axes) and would have gained prestige while they were handed over across large distances (see also Mol 2007, this volume). The exact mechanisms underlying the spread of these goods and/or ideas to the Lesser Antilles of course remain shrouded in uncertainty but the distribution all the way down to the southern Lesser Antilles strongly suggests incorporation in the Taíno realm (Allaire 1990; Hoogland and Hofman 1991; Rouse 1992). In multi-village polities and regional settlement hierarchies, such as in the Guiana's, goods would regularly move within and between communities (see also R.S. Duin, this volume) and communities would extend beyond one village. As Wilson (1990) pointed out, the flow of tribute and the trade and exchange of goods were important in the Greater Antillean cacical societies, particularly in negotiating alliances. Symbolically laden objects were moving through exchange networks tying together the wider region. Local community headmen or shaman-leaders could have used 'Taínan' esoteric materials in community ceremonies to reinforce their position as intermediaries between the natural and supernatural worlds (see also Curet 1996; Helms 1979). On the other hand, these relationships simultaneously may have given rise to antagonistic enterprises in which raiding and appropriation were important tenets, as may be reflected by the broken or ceremonially 'killed' zemis at Anse à la Gourde (Hofman et al. 2008).

Communities in the southern Antilles on the other hand were in permanent contact with northern South America, as suggested by the material culture affiliations. They remained so until the early colonial period based on the early colonial accounts, but also recently corroborated by archaeological research on the island of St. Vincent where Koriabo related Cayo ceramics were found inlaid with colonial seed beads (Boomert, this volume; Bright, this volume). The presence of *guanín* in Cuba and Hispaniola demonstrates the far reaching contacts that were maintained with western Venezuela and Colombia in the era of Amerindian-European encounter, but which has its roots as early as Saladoid times.

All in all the data suggest that Caribbean communities partook in a vast pan-regional network system from the onset of their discovery of the insular world in which alliances and hostilities alternated, creating a scene of social, political and ideological communication across the Caribbeanscape similar to what is known from the ancient and contemporary South American mainland (e.g. Alexiades 2009; Boomert 2000; R.S. Duin, this volume; Gassón 2000; Heckenberger 2005, this volume; Heinen and García-Castro 2000; Mans, this volume; Rostain 2006; Whitehead 1993). For now it remains to be unravelled how the multiple networks that were operating at various scales within this overarching system interlocked and how the social engagements among the communities of differing socio-political complexity within the networks were articulated through time. The further application of this multi-disciplinary and multi-scalar approach is expected to make great strides in advancing our understanding of the mechanisms that underlay human mobility and the exchange of goods and ideas in the circum-Caribbean (see also Curet and Stringer 2010; Curet and Hauser 2011; Fitzpatrick and Ross 2010; Hofman and Bright 2010).

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THE SOCIAL IN THE CIRCUM-CARIBBEAN Toward a transcontextual order

Alexander Geurds

Past archaeological interpretations of the pre-Colonial occupation on the Greater and Lesser Antilles sketch indigenous societies as relatively isolated from the pan-regional circum-Caribbean. This model is disputed in the recent proposals for pan-regional interaction in the Caribbean; a more seaward oriented perspective, incorporating large parts of the Central American and South American Caribbean coast. This article reflects on the ideas put forward in this cultural configuration to examine how they incorporate material culture from these mainland regions. This reflection will be used to show that these studies show an imbalance emphasizing homogeneity and similarity at the level of the individual object at the expense of diversity and difference in regional and local-level contexts, and to propose the integration of contextual information from the Caribbean littoral in analyzing the resemblance and meaning of objects.

Interpretaciones arqueológicas existentes de la ocupación prehispánica en las Antillas Mayores y Menores representan a las sociedades indígenas como aisladas del Mar Caribe. Este modelo es discutido en propuestas recientes de interacciones pan-regionales en el Caribe, una perspectiva más orientada al mar, que incorpora gran parte de las costas Caribeñas de América Central y el Norte de Sur América. En este artículo se reflexiona sobre las ideas presentadas en esta configuración cultural para examinar cómo incorporan la cultura material de estas regiones continentales. La reflexión se aprovechará para mostrar que dichos estudios muestran un desequilibrio en enfatizando la homogeneidad y la similitud a nivel del objeto individual a costa de la diversidad y la diferencia en los contextos regionales y locales, y de proponer la integración de la información contextual del litoral Caribe en el análisis de la semejanza y el significado de los objetos.

Jusqu'à présent, les interprétations archéologiques de l'occupation préhistorique des Antilles dressaient le portrait de sociétés amérindiennes relativement isolées du reste de la région circum-caraïbe. Ce modèle a été remis en question par les récentes modélisations de l'interaction pan-régionale dans les Caraïbes, davantage orientées vers l'interface maritime et intégrant une grande partie des côtes caraïbes de l'Amérique centrale et du nord de l'Amérique du Sud. Cet article s'intéresse aux théories développées dans ce cadre culturel et examine la manière dont elles intègrent la culture matérielle de ces régions continentales. Cette réflexion aboutira, à la fois, à une mise en relief du déséquilibre montré par ces études, privilégiant l'homogénéité et la similarité à l'échelle de l'objet individualisé au détriment de la diversité et des différences observées aux échelles régionales et locales, mais aussi à proposer la prise en compte d'informations contextuelles sur le littoral caraïbe dans l'analyse des similitudes et de la signification des objets.

Introduction

The puzzle of how to perceive the relation between indigenous societies that surrounded the Caribbean Sea during the pre-Colonial era remains vexing. Now, more than sixty years after Julian Steward proposed a solution to this pan-regional problem to which he referred as the Circum-Caribbean thesis, this pan-regional perspective has seen a renaissance of some magnitude in the concept of a Greater Caribbean culture area (in line with Rodríguez Ramos 2007a,b; Rodríguez Ramos and Pagán Jiménez 2007; Wilson 2007; Callaghan 2001; Curet 2004). This chapter will discuss the progress made since the mid-twentieth century regarding trans-Caribbean comparisons (see also Hofman and Hoogland, this volume), and analyse some of the recently proposed evidence for pan-regional contact across the Caribbean littoral.

Cultural diversity in the circum-Caribbean

Recently, the archaeology of pre-Colonial societies in the regions surrounding the Caribbean Sea has witnessed an important trend. Diversity and fragmentation are no longer perceived as an epistemological problem, but rather acknowledged as a longstanding feature of cultural interaction. In the context of the lower Central American countries for example, Robert Drennan proposes to put "the diversity of the Intermediate Area to good use" (Drennan 1996:115). This is good advice when investigating the Caribbean area which is united in unforeseen ways. We can speak of a cultural mosaic united, in spite of the fragmentary aspects, by identities formed through object and people movement rather than *stasis*; through contact rather than isolation. Such a perspective of frequent and durable contact between socio-politically comparable communities makes more sense in view of the diverse material culture recovered in the region. Flexibility or 'cultural pluralism' (Rodríguez Ramos and Pagán Jiménez 2007) is likely to have been a core trait in the region, between communities, with long-distance traders, or when obtaining non-local objects. The ability to understand more than one language, the willingness to interpret non-local objects in different ways, and the freedom to translate cultural difference were probably defining characteristics in the circum-Caribbean.

Until now, all of the proposals for pan-regional frameworks of indigenous cultural developments in the circum-Caribbean emphasize comparability. Scholars implicitly pave the way for the presence of a certain cultural form, whether this is called the Circum-Caribbean Culture Area, the Chibchan Area, Greater Antilles, or Greater Caribbean. In doing so, these concepts conceal the cultural practices of engagement of difference and strategic behaviour in light of others.

Culture-Historical beginnings

Julian Steward was well aware of the complex task of evidencing his 'Circum-Caribbean thesis', as he informs the reader during the introduction to Volume 4 of the Handbook of South American Indians: "[...] few of the aboriginal tribes survive today; ethnologists have largely ignored the area. Archaeologists have done little but make surveys, except in the West Indies" (Steward 1948:xvi). Steward is clearly troubled in his introductory text; according to him ethnohistoric sources are poorly described, archaeological work is limited and fragmented; ethnologists have visited only a few localities in the region. In his analysis, the contemporary indigenous cultural scene, used for historical analogies, suffers from

similarly challenging issues: villages are small; weaving is simple, pottery plain, political leadership absent, and social structures from the past gone with the exception of the continued presence of the shaman. In spite of viewing these cultural traits as discouraging, Steward managed to develop his 'Circum-Caribbean thesis', strongly basing it on comparable socio-political organization both on the mainland and the (Greater) Antilles (Steward 1948:1-4). The proposal however did not stand the test of time. During the heyday of classificatory-descriptive archaeology, quickly questions arose about the practical implications of such similar social and political patterns. Says William Coe suspiciously: "One can only ponder whether or not the stimulation of actual contact is necessary to account for such similarities" (1957:280).

The developmental trajectory proposed by Steward, which saw the emergence of chiefdom-level societies along the Caribbean Sea, was quickly overshadowed by an alternative model proposed by Irving Rouse (1953, 1992). Rouse's conclusion that the cultural and linguistic origins of indigenous societies were to be found in the Amazon and Orinoco river basins quickly became the favoured model in insular Caribbean archaeology. In Central America, archaeologists looked for local developmental trajectories and underscored boundaries and frontiers in analyzing the links to the neighbouring Mesoamerican and Andean culture areas instead (Sheets 1992:36; Willey 1971:254). The idea of a 'Circum-Caribbean Culture Area', united through its similar ecological settings, implicitly stated by Paul Kirchhoff (Steward 1948:note 1) and developed by Julian Steward, never gained a foothold in subsequent publications. Even though shared trait complexes were recognized and the socio-political nature of Circum-Caribbean societies seemed comparable, the archaeology on the Caribbean islands, in Central America, and Colombia went their separate ways. Archaeologists focused on either the Greater and Lesser Antilles or the region comprising most of the Central American countries. The end result was that 'Caribbean Archaeology' or 'The Caribbean' and 'Lower Central America', 'the Intermediate Area' and currently the Isthmo-Colombian Area (e.g. Hoopes and Fonseca 2003) are now referential shorthand in the discipline.

In recent years, the pan-regional concept of the Greater Caribbean has regained some of the interest it had lost for more than half a century. Certainly the rate and frequency at which goods and people moved around at a pan-regional scale has been underestimated, and an explicit focus on such social dynamics holds potential to disclose them. Hofman and Hoogland (this volume) address this complex task by proposing a multi-scalar approach and considering regional or pan-regional solutions to local necessities. I consider it an evocative concept since it enables research to look across regional disciplinary boundaries in exciting new ways and since it traces back pan-regional dynamics to local origins. Resulting research can benefit by going beyond a reliance on formal and stylistic similarities observed in certain material culture categories and semiotically between some of those categories. To argue for object circulation is one thing, to interpret what this meant socially is another. In this chapter I suggest that circum-Caribbean interaction studies can benefit from the current insights from social theory regarding the flexibility and flux of cultural values of material culture. Encounters, travel, and contact are emphasized as discrete events for acting out these interpretations and establishing 'same' and 'other' (Butler 1990; Keane 1997; Latour 1993; Munn 1986). In addition, formulations on practice theory (Bourdieu 1977; Schatski 1996) emphasize that artefacts must be used in order to be effective; and preceding understanding is needed to use them - they must become part of local social

practice. The practical understanding is the defining element in the links between individuals (or communities) and the object at hand. I suggest that these findings from social theory are suitable in better understanding mobility and exchange in the circum-Caribbean. In considering that particular objects do not allow just any practical use and interpretation – they cannot be suitable for arbitrary practices – we can analyse and compare practices and potentially their change through time through investigations of archaeological contexts.

The relevance for invoking a pan-regional perspective is to illustrate what kind of relation mobility and exchange at this scale had with the local context at hand. Paradoxically then, debating whether a site, region or object belonged to a macro-region is a debate which is far removed from understanding social contexts in the pre-Colonial circum-Caribbean. I believe that the recent focus on wider regional contexts of archaeological settings have provided a stimulating answer to the proverbial island perspectives which had become a central tenet of archaeologies around the Caribbean Sea in the second half of the twentieth century. In contrast to these separated regional archaeologies, research into circum-Caribbean interaction promises to regroup the micro-level locus of analysis to form part of the wider pan-regional focus. It is the relations between micro segments (e.g. domestic settlements, ceremonial sites, river valley settlement systems) of these macro regions which can best serve to illustrate the use of non-local objects.

A view from the Central American mainland

When viewing for example lower Central America (e.g. Panama, Costa Rica, Nicaragua and parts of Honduras) the regional perspectives in looking at the archaeology of this region is enlightening. In recent years, the unifying rationale argued for defining for example the Isthmo-Colombian area, which builds a link between long-lasting diachronic symbolic principles and synchronic social relations in potentially useful ways for circum-Caribbean investigations.

Zooming in on the regional level of southern Central America it becomes clear that researching a contextualized model of pan-Caribbean interaction is considerably restricted by the neglect in research projects that the Caribbean watershed has suffered when compared to the Pacific side (Lange 1996). The reasons for this neglect relate to poor infrastructure and climatic conditions that do not favour archaeological research, in particular when compared to the significantly drier and more accessible Pacific, featuring the Pan-American Highway and all of the major modern cities dating to early colonial times. In many parts of Central America the Caribbean – referred to as *El Atlántico* – is poorly accessible by means of motorized transport; dense tropical forests cut by major rivers have impeded research during much of the twentieth century. Heavy rainfall, occurring throughout most of the year, makes traversing this part of the Caribbean littoral a decidedly complicated affair. The presumed scarcity of archaeological sites on the Caribbean side of the isthmus though, is not merely caused by a data imbalance. In central Panama, the most extensively researched region in this regard, habitation on the Pacific side has consistently been shown to have started earlier and was more intensive than on the Caribbean coast (e.g. Cook and Ranere 1992; Drolet 1980). Thus the paucity of settlements cannot be explained by data imbalance alone, it does seem to have been the less densely populated side of Central America.

This data imbalance has impeded investigating the proposed model of pan-regional mobility and exchange in the Caribbean, but in recent years a handful of archaeological survey projects (Griggs 2005; Geurds 2009) and excavations (Gassiot and Ballbé 2004;

Wake *et al.* 2004) have started work on the Caribbean littoral or in the riverine coastal hinterlands, building on pioneering research projects (e.g. Drolet 1980; Magnus 1974). Early research hypothesized comparable patterns in material culture stretching along the Central American Caribbean coast (Epstein 1957; Stone 1941; Strong 1948); yet more recent studies that take regional questions into consideration were unsuccessful in confirming this idea by more local testing. Instead, archaeological and linguistic data point toward a social and economic integration with the more inland regions (Constenla 1991; Magnus 1974; Snarskis and Ibarra 1985) rather than a form of coastal Caribbean archetype. Overall, the evidence points to contact and exchange from the Caribbean coast to the Pacific side, as is argued in the example of central Panama (Linares and Ranere 1980; Chavez *et al.* 1996; Cooke 2005).

Evidence for circum-Caribbean interaction

"The Mesoamerican ball game seems to have leapt the Yucatan Channel in the Classic [Period] and quickly spread eastward from island to island" (Canter 2006: 2).

A focus on the formal similarities of architectural features between Middle America and the Greater Antilles forms the basis for recent suggestions of contact across the Caribbean Sea (Canter 2006; Wilson 2007). The ceremonial site of Rivas, documented in Costa Rica (Quilter 2004), is contrasted to ceremonial sites on Puerto Rico (i.e. Caguana and Tibes) and a number of similarities are observed in the intra-site layout of the sites and materials used in the construction of the ceremonial areas. In a similar vein, the cultural practice of ritual ball games is argued to have diffused from the Yucatán peninsula to the Greater Antilles (Canter 2006). Wilson concludes his comparisons by stating that interaction across the Caribbean Sea is "a question that deserves to be taken seriously, even with the difficulties in making sense of the archaeological evidence for long distance contact" (Wilson 2007:384).

Where Steward's description of 'Circum-Caribbean tribes' was mainly defined by means of similar ecological habitats and socio-political character, the present push for a wider Caribbean interaction perspective is more particular in its approach in focusing on culture contact rather than culture comparability. The 'Circum-Caribbean Culture Area' was a classic example at an attempt to identify a culture – in this case determined by its environment – and portraying the people pertaining to this culture as behaving along the patterns prescribed by it (e.g. chiefly authority). The problem of essentialism looms large in this approach. Scholars behind the recent renewed interest in a pan-regional perspective for the Caribbean Sea are aware of these essentialist notions and instead stress the mobility of cultural formations across geographical and perhaps political boundaries (*sensu* Clifford 1997). The Caribbean Sea forms such a boundary and, increasingly, links spanning this body of water are hypothesized.

A full survey of all hypothesized links across the Caribbean Sea is beyond the scope of this chapter, but they can roughly be subdivided into three strands: (1) contact hypothesized on geographical grounds, for example favourable maritime currents; (2) contact hypothesized on ground of comparative similarity, for example three-pointers encountered in both the Antilles and the South American mainland; and (3) chemical provenience studies, for example on greenstone objects.

The geographical reasoning is based on a number of publications dealing with the maritime currents and viewshed analyses in the Caribbean Sea (Callaghan 1993, 2001; Torres and Rodríguez Ramos 2008). It argues in favour of a crossing by means of canoes between the Guajira peninsula on the eastern coast of Colombia and the southern coast of Puerto Rico, in addition to other maritime 'shortcuts' along the coast of the Central and South American mainland as well as between Costa Rica and Colombia (Callaghan and Bray 2007). These maritime current studies, involving evaluations of travel duration, time during the year, vessel types used, propulsion, and likely direction have their background in comparisons made to indigenous seafaring in Oceania (see Thomas 2001 for a recent overview). For pan-regional Caribbean inquiries they are an often quoted source and represent the only line of reasoning that looks at the potential location of communication routes in combination with patterns in the archaeological record rather than comparing those patterns. In the latter studies, to which we will now turn, the patterns are used to identify endpoints of interaction routes.

Hypotheses based on comparative resemblance in material culture, both from the mainland and the Antilles, are the most commonly encountered type of hypothesis and have the longest history. An early example was based on the qualities of brilliance encountered on polished wooded artefacts in both the Antilles and Central America (Helms 1987). This research was subsequently expanded upon in a thesis on the importance of brilliance as an aspect of objects materiality (Saunders 1999, see also Keehnen, this volume).

Using a diachronic perspective with examples from Mesoamerica, Lower Central America, Amazonia and the Andean culture area, the central argument in Nicholas Saunders' discussion on the sacrality of object brilliance is that indigenous peoples appeared to share a common disposition toward shiny things. Saunders locates this disposition (or 'indigenous philosophy') in a primordial timeless past. The importance of shininess of objects is induced from their frequency in the archaeological record (often in fact unprovenienced objects in museum collections) and references from ethnographic contexts. The conclusion is that these objects were valued through age-old notions passed on through time in a universe conceived and governed by continuity of symbolic meaning (Saunders 1999).

Much in the same way, the stylistic resemblance of particular objects is by far most frequently utilized to hypothesize ties across the Caribbean Sea. Looking principally at stylistic and semiotic data, these resemblances are taken as indications of contact and coherence in a geographically and linguistically diverse area. Comparisons of macro-blade technology for the time-period of earliest occupation between the Greater Antilles and lithic data from Belize are presumed to suggest some form of contact given the perceived likeness of the Belizean materials and the lithics from the Greater Antilles (Wilson *et al.* 1998, but see Callaghan 2003).

The perspective of comparison has a longer history than the recent surge in publications. An early example is the reference to a single three-pointer stone discovered in the Santa Marta region of north-eastern coastal Colombia. Marcio Veloz Maggiolo and Bernardo Vega drew on this Malaboide series three-pointer to suggest a relation between the tradition of three-pointers from the Greater and Lesser Antilles (Veloz Maggiolo and Vega 1982). It is noteworthy that the views of researchers are almost exclusively from the Greater Antilles toward particular areas of Central America or Caribbean South America with objects flowing from the latter regions to the islands and hardly vice versa. Also, the comparisons are usually made solely for one object category at a time. Finally, the exchange of greenstone between Central America and the Antilles has been approached along similar lines of reasoning. Greenstone, a vernacular concept for a complex of lustrous minerals and rocks, is ubiquitous in Central America and has a long history of stylistic as well as geomorphological and chemical analysis (for an overview see Lange 1993). Jadeitite, with its limited amount of potential points of departure in regional exchange networks, is invoked as a form of material desired throughout the circum-Caribbean (Petit 2006). Rodríguez Ramos has argued that lustrous stones that visually resembled jadeitite were used interchangeably and valued for similar purposes. Drawing on a distinction proposed by Lange (1993), Rodríguez Ramos distinguishes between 'true jades' (being jadeitite and nephrite) and 'social jade' being an array of other greenstones (Rodríguez Ramos 2007a) and considers that the latter is fundamental in analyzing potential exchange networks in the wider Greater Caribbean, a term proposed by Rodríguez Ramos.

The proposition to incorporate the 'social jade' concept has opened new avenues of analysis for pan-regional analyses. However, the concept in my view also raises an ontological problem. In essence, this concept presupposes a lack of emic distinctions between lustrous stones dating back to the pre-Colonial time under investigation. In other words, it is assumed that indigenous societies surrounding and navigating the Caribbean Sea, perceived no fundamental distinction between the greenstones grouped under those of the social jades. This then naturally facilitates the – etic – recognition of some form of Greater Caribbean common experience, which is begging the initial question under consideration. It seems that, in order to come to a more contextualized understanding of jades, social or not, more localized contextual studies are called for which provide insights into the practical situations in which particular qualities of these stone objects were valorized and how some of those qualities diachronically shifted in importance.

Keane (2003) refers to this aspect of object materiality as the 'condition of possibility' and it is closely related to Kopytoff (1986) and Appadurai's (1986) biography of things. The utility and value of objects in different settings and time periods tends to shift. Objects exchanged throughout the Greater Caribbean are 'flexible', analogical to the regional flexibility mentioned by Drennan, and should not be viewed as hostile to local systems of knowledge in the Durkheimian sense. Newly arrived 'strange' objects then, synthesize cultural elements at their place of arrival, reminiscent of the *bricolage* mechanism proposed by Claude Lévi-Straus ([1949] 1969). However, I consider the exchanged material things neither only as containers of meaning, nor as its ultimate determinants. They can be a conduit of meaning, but may be just as powerful in enabling new ones.

Discussion

It seems reasonable to assume that contact occurred across the Caribbean Sea at some stage during the two millennia of habitation along its littoral. Even if only by chance, it is likely rather than unlikely that at some stage people from different extremes or regions established contact with each other, initiating a motion of objects. The matter at hand then becomes how to go about this likelihood; can we attest this contact archaeologically and avoid the pitfall of only arguing it through object resemblance? The answer cannot be *not* to compare, for archaeological investigations are in essence always comparative. The question then is how similar two objects must be, to be considered the 'same', in the sense of being related either through contact or influence (Geurds and Van Broekhoven 2010).

The thesis of a primordial cultural scheme as bearing responsibility for these resemblances undermines the function of 'similarity = contact' (see McGinnis 1996 for a discussion of primordialism as examined for circum-Caribbean material culture).

The reasoning entailed in many of the comparative investigations of circum-Caribbean mobility and exchange is suggestive of some form of interaction. However, in all cases, except for the arguments based on provenance studies of artefacts, they are not based on samples of a particular data-set; they are a form of probable argument, perhaps a conjecture. In essence, the growing list of publications arguing pan-Caribbean interaction is predominantly built around comparisons of resemblance. This resemblance is deemed sufficient to warrant these conjectures. This is *abduction*, in Peircian terms.¹ By themselves, abductions cannot warrant any particular conclusion, they need to be accompanied by follow-up research taking a regional and site level perspective (see Boomert, this volume; Hofman and Hoogland, this volume; Knippenberg, this volume; Mans, this volume). If surprising resemblances between objects across the Caribbean Sea are observed in pre-Colonial material cultures, and if we assume that these resemblances coincided with the existence of a Greater Caribbean interaction sphere (sensu Rodríguez Ramos 2007a), or a primordially shared Caribbean worldview (sensu McGinnis 1996) and so forth, such resemblances are rendered obvious, and we can assume that the Greater Caribbean thesis is true. Whilst archaeological reasoning holds abduction as part of its essence of reasoning about the past, not furthering initial probable arguments by means of local scale case studies will have the Greater Caribbean thesis fall short of being convincing.

The problem with cultural primordialism is exemplified by the explanation offered by Saunders concerning the comparability of objects through space and time. This is attractive since we *do* see these similarities through form and iconicity, and we *do* consider that they are somehow related. However, the explanation presented here strikes as oddly circular in nature: Shininess was important to many indigenous peoples and communities throughout Central America because that is the way it has always been. The question one is left with here is *how* this importance came about in the first place, and *how* it maintained its importance. Is this shininess a deep, permanently internalized element of indigenous societies in Central America and perhaps in the circum-Caribbean? What to do with the relevance of shininess in the Andean region or Mesoamerica in this regard?

As Latour mentioned, for an object to have relevance to an individual, it needs to be handled. It is not primarily a question of interpretation by that individual (1993:Chapters 3 and 4). This handling occurs in contexts of practice, which in turn are in part accessible through archaeology. I consider that we need to first study these contexts, in order to learn how these exchanged objects were used. Through excavations, archaeology has access to these social practices. In these practices, material things are routinely drawn upon and applied by different agents in different situations. The objects handled again and again endure, thus making social reproduction beyond temporal and spatial limits possible. This endurance can also be approached through archaeology and it is perhaps the closest to what scholars can look for when they conceptualize mobility and exchange in the Caribbean.

¹ Charles Peirce introduced the concept of abduction to deal with the initial stages of the scientific method (Eco *et al.* 1984). Abductions can only be proven meaningful when they are followed by deductive inferences and finally inductive testing of the hypotheses, in this case the thesis of the Greater Caribbean.

Human perception is a continuous process of creating categories of 'others'. All that is strange and unknown is inherently different from all existing frames of perceptual reference, thus becoming alien, rare, exotic, and perhaps desirable and prestigious. This is essentially Mary Helms' thesis (1979), and the relation she draws between converting such 'esoteric knowledge' into political potential is often cited in pan-regional Caribbean arguments.

The objects mentioned in arguments in favour of circum-Caribbean interaction (i.e. ball courts, jade celts, copper/gold alloy figurines, stone three-pointers and others) are more than conveyors of cultural 'representations' of exotic foreignness (*sensu* Helms 1979): they are used and have effects through their materiality. Future research into the pan-regional interaction in the Caribbean would benefit from seeking out objects holding a highly specific materiality (see for example Mol, this volume), for example a particular form of tool for a particular technology - one which cannot simply be replaced by some other arbitrary 'symbolic object' to which the same 'meaning' is ascribed. I consider comparing contexts of usage of resembling objects throughout the circum-Caribbean to lead to more inductive reasoning than merely individual (decontextualized) objects.

Conclusion

The archaeologies of respectively Central America, Colombia, Venezuela, and the Greater and Lesser Antilles only infrequently exchange data. Other than a handful of scholars who have had the opportunity to address interregional topics between for example the archaeology of Colombia and Costa Rica, archaeologies are 'nationalist' and distinctively local in focus. There is no professional conference for an 'archaeology of the Caribbean Sea', nor is there a peer-reviewed journal explicitly offering a forum for investigations into Greater Caribbean topics.² To a large degree, a comparable situation exists in Central American archaeology. Despite an archaeological history that is largely fragmented, the lower Central American region and Colombia were recently associated in the definition of a Chibchan area (Hoopes and Fonseca 2003). This constituted a major conceptual shift in comparison to past projects and studies. Until now, the difficulties of evaluating contextual data were primarily caused by a lack of communication between archaeologists working in Central America and those working in the Antilles. Notes Antonio Curet: "Without a general frame of reference about [Lower Central America] it is difficult to recognize possible evidence of interaction" (Curet 2004:95, my translation).³ This current lack of interaction between scholars working in either area is indeed a major impediment toward a critical evaluation of evidence for interaction during the pre-Colonial era.

Debates on the existence of a pre-Colonial network of interaction spanning the Caribbean fall into two opposing perspectives: many scholars have no regard for its potential existence, while some visualize a Caribbean Sea dotted with trading canoes hitchhiking on the currents. This paper did not seek to either validate or discredit a Greater Caribbean notion. Nonetheless, a subtle reflection on the relationships that would constitute panregional networks in the Caribbean seems in order. The supposed movement of material culture at a significant scale does not show up with convincing frequency in the Caribbean

² The annual conference of the International Association for Caribbean Archaeology occasionally features speakers from the Caribbean coast of Central America. Still, it is essentially a venue for papers on insular Caribbean archaeology and studies on the South American tropical lowlands.

³ Original quote in Spanish: "Sin un marco general sobre la [*sic*] otra área es difícil reconocer posibles evidencias de interacción".

archaeological record, complicating definitions of contact. It might be more beneficial to take pre-Colonial regional and local human geographies around the Caribbean Sea into consideration, and consider them to be made up of societies united in their inclination and technological expertise toward navigating rivers and crossing different contexts by seafaring (sensu Boomert and Bright 2007). As mentioned, these societies will have been inclined to explore new horizons on the Caribbean Sea or along its coastline, and this predisposition necessitates the multi-scalar approach proposed here (Hofman and Hoogland, this volume). On the question how this occurred, sea current studies can provide suggestions, but the fundamental understanding is to be found in the social dynamics entailed in the arrival of a canoe bringing objects to new shorelines. Are these objects restricted to serving as carriers of an exotic symbolism, having arrived from beyond meaningful horizons, or do they add to the establishment of a transcontextual social order, for example through gift-giving? For now the latter remains questionable (Mol, this volume). Referring to these exchanged objects as meaningful structures or symbols alone cannot offer a satisfactory answer to this question. Contextualized studies of such objects do hold the potential to reveal the effect of trans-Caribbean objects in a receiving setting. For now the majority of the referenced artefacts do not yet qualify for this requirement, but with scholars increasingly beginning to collaborate and tying different scales of research together around the Caribbean Sea the opportunity for a better understanding lies ahead.

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BRINGING INTERACTION INTO HIGHER SPHERES

Social distance in the Late Ceramic Age Greater Antilles as seen through ethnohistorical accounts and the distribution of social valuables

Angus A.A. Mol

This paper starts out with a brief overview of the use of "interaction theory" by Caribbean archaeologists, which is suggested to be a connecting element in many academic works. Following this I will present a model of Greater Antillean Late Ceramic Age social interaction based on a recombination of three theoretical models from anthropological archaeology: "interaction sphere", "exchange sphere" and "social sphere." Using ethnohistorical sources and an overview of Late Ceramic Age social valuables I will illustrate how a social interactional model contributes to our understanding of the social realities behind the distribution of material culture complexes in the Antilles.

Este artículo comienza con una breve reseña del uso de la "teoría de la interacción" por arqueólogos Caribeńistas, la cual se puede observar como elemento de conjunción entre muchos de los trabajos académicos. Siguiendo esta línea, presentaré un modelo de interacción social durante el Período Cerámico Tardío de las Antillas Mayores, basado en la recombinación de tres modelos teóricos de la arqueología antropológica: "esfera de interacción", " esfera de intercambio" y "esfera social." Utilizando fuentes etnohistóricas y un vistazo a los bienes de valor social durante el Período Cerámico Tardío, ilustraré la manera en que el modelo de interacción social contribuye a nuestra comprensión de las realidades sociales sobre las que se basa la distribución de complejos de cultura.

Cet article débute par un court panorama de l'utilisation de la « théorie de l'interaction » par les archéologues caribéens, qui est considérée être un élément de connexion dans beaucoup de travaux académiques. En suivant cette idée, je vais présenter un modèle d'interaction sociale de l'Âge Céramique Récent des Grandes Antilles basé sur la recombinaison des trois modèles théoriques de l'archéologie anthropologique : la « sphère d'interaction », la « sphère d'échange » et la « sphère sociale ». En utilisant des sources ethnohistoriques et une vue d'ensemble des valeurs sociales de l'Âge Céramique Récent, je vais illustrer comment le modèle interactionnel social contribue à notre compréhension des réalités sociales derrière la distribution des complexes de culture matérielle des Antilles. Winston Churchill is attending an English upper-class party. While standing in a corner, puffing away on his "Romeo y Jullietta" cigar, he spots a good-looking socialite in the crowd. He boldly walks up to her, takes a 6-carat diamond ring out of his pocket and asks: "My dear lady, would you spend the night with me in exchange for this ring?" The ladies eyes widen with surprised delight: "Oh my! Mr. Churchill, of course I would spend the night with you!" "Well, then, would you also sleep with me for the sum of 10 pounds?" Churchill asks cheekily. "Mr. Churchill! What kind of woman do you take me for!" the scandalized socialite cries out. Churchill replies: "We've already established that, madam; we are just establishing the depth of your commitment."¹

Introduction

Pre-Columbian Caribbean archaeology is in a state of transformation. Where this discipline once focused on studying neatly boxed archaeological cultures that followed the clear-cut steps of the socio-political evolutionary ladder (Curet 1992; Rouse 1992; Siegel 1992), researchers are now critically reviewing such long-held beliefs. This is reflected, for example, in the recent development of and shift in high-level theories (Keegan 2007: Chapter 1; Keegan and Rodríguez Ramos 2004; Mol 2007; Torres 2010), methodologies (Fitzpatrick *et al.* 2009; Hofman *et al.* 2008; Reid 2008; Torres 2005), (re)interpretations of archaeological and ethnohistorical datasets (Hofman *et al.* 2007; Keegan 2007; Oliver 2009; Siegel 2010), and the geographic and cultural refocusing of research to the Caribbean basin as a whole (Harlow *et al.* 2006; Hofman and Hoogland, this volume; Keegan in press; Rodríguez Ramos 2007, 2008; Rodríguez Ramos *et al.* 2008). Although some of the proposed changes will neither stand the test of time nor that of falsification, the face of Caribbean archaeology has already changed for good.

Even with all the recent upheaval, there is a single idea to which every Caribbean archaeologist subscribes and will subscribe to in the future: the idea that culture-historical processes of the Caribbean are best described through its interactions, both internal and external. In that sense when Caribbean archaeologists discuss pre-Columbian culture history it reminds me of the above anecdote. Analogously to Churchill and the socialite lady, we are already willingly or unwillingly committed to the principle — interaction as an extensive and intensive mechanism and practice in pre-Columbian social and cultural life (Hofman *et al.* 2007; Rouse 1986; Torres and Rodríguez Ramos 2008; Watters 1997) but we are still debating how deep our commitment to this principle should be. A debate which centres mainly on the extent of the interactions and the areas to and from which they flow (Hofman and Bright 2008).

Historically, inquiries into the social nature of pre-Columbian interaction have been few, however, despite being one of the main principles of Caribbean archaeology. So, while there are many studies that take interaction as a key element, the structuring principles underlying the social practice of interaction remain unaddressed.² Due to this lacuna it remains largely unclear what forms interactions would have taken in terms of the social

¹ This old story takes Churchill as protagonist in this case, but it is attributed to various historical figures such as Oscar Levant and Bernard Shaw — the latter is used as protagonist for the same story as recounted in one of those famous discussions between the Real Mesoamerican Archaeologist and his Skeptical Graduate Student (Flannery 1976:251-253).

² Notable exceptions are the recent book by José Oliver (2009) and some of the work of the Latin American Social Archaeology School. I share the former, but not the latter's theoretical framework.

behaviour and practice of pre-Columbian communities and individuals and what their material reflections might be.

This is not to say that there are no works at all addressing the nature of pre-Columbian interactions. The concept of exchange in particular has seen some theoretical elaboration.³ Most notable in this regard are ideas that see the exchange of various social valuables as a functional medium for prestige based competition in the socio-political arena (Curet 1996; Oliver 2009). The idea of exchange as a lifeline, whereby migrants continue their interactions with their mother communities in order to ensure biological and cultural survival, is also encountered as an interactional theory in Caribbean archaeology (Hofman *et al.* 2011; Keegan 2004; Kirch 1988; Watters 1997; Watters and Rouse 1989).⁴

These are indeed prime examples of important types of social interaction, but they only represent a small fraction of the whole gamut of possible practices. The most complete overview of forms of interaction to date is by Boomert (2000:Chapter 11), who devotes a chapter to various Saladoid/Barrancoid interactions. He discusses a variety of weak and strong interactions, i.e. peaceful exchange and exchange of violence (cf. Lévi-Strauss 1943), that would have played an important role among the Early Ceramic Age communities of the Windward islands and the South American mainland. Although the overview is quite extensive, it does nothing to increase our understanding of social interaction in other Caribbean regions and time periods.

The most prevalent theories of pre-Columbian interaction are those that explain cultural and stylistic origins and diffusion, a type of thinking which ultimately stems from the works of early culture-historical archaeologists (Childe 1925; Montelius 1899). Recently, Rodríguez Ramos has been working from an "interaction paradigm" (Schortman and Urban 1998), which holds that "interactions between societies are the rule rather than the exception, and these have a vital place in their reproduction, evolution, and/or collapse" (Rodríguez Ramos 2007: 46). How these interactions would have been structured in social practice remains unclear from Rodríguez Ramos' work, however.

In that sense the work of Irving Rouse remains the best Caribbean example of an attempt at a theory of interaction (Rouse 1939, 1986, 1992), Rouse's main drive was to explain the origin of and change in pre-Columbian culture (Siegel 1996), so, together with population movement and local development, interaction was the only other logical explanation for the changes he and others witnessed in the archaeological record. Rouse did not focus on interaction as a key concept for his investigations, relying more often on population movements to explain diachronic and geographical shifts in style. Nevertheless, strong ideas about the role of interaction in the pre-Columbian Caribbean are present in his work: "Interaction is the mechanism whereby cultural norms diffuse internally among the members of a local population [...] and the means of external diffusion from the members of one local population or people to another" (Rouse 1986: 11).

³ Whenever authors discuss exchange, they are clearly talking about intentional exchange. So, since no intentional exchange takes places without interaction, this term is used here as nearly homologous or as a sub-variant of interaction.

⁴ Although it has been predominantly used for the Early Saladoid, the lifeline theory could to my mind also be applied to other situations — e.g. the Late Ceramic Age spread of Chican Ostionoid (Hoogland and Hofman 1999).

At first glance a Rouseian version of interaction seems rather outdated, being solely concerned with mechanisms that explain the sharing of so-called "cultural" stylistic traits in the archaeological record. Nonetheless, there are implications in using this theory and possible updates and revisions which make this theory's principles a bit less monothetic.

Three spheres in interaction theory

Rouse and others were inspired by the concept of "the interaction sphere" issuing from work done on Hopewellian cultures in the early 1960s (Boomert 2000; Haviser 1991; Rouse 1986). Caldwell proposed to interpret the so-called Hopewellian phenomenon - a pattern of shared material culture traits in a large area of Eastern North America, consisting of various distinct environmental zones and cultural traditions, during the 200 BC to AD 400 Middle Woodland period (Dancey 2005) - as the effect of different regional traditions that were linked through a religious interaction sphere (Caldwell 1964).

Although there is a slight variation in meaning and use (Altschul 1978; Binford 1965; Caldwell 1964; Fitzpatrick 2008; Garcea and Hildebrand 2009; Glatz 2009; Haviser 1991; Hayden and Schulting 1997; Schortman 1989; Struever and Houart 1972), an interaction sphere may be broadly defined as "information and exchange networks through which status-specific artefacts as well as stylistic concepts and other norms circulate" (Boomert 2000:1). Still, there exist some principles of the initial theory that have not always been taken up by subsequent works. For example, Caldwell states that it is to be expected that spheres with a high degree of interaction display a greater similarity in socio-cultural patterns than areas with a low degree of interaction. In addition, it is to be expected that spheres with a high degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction display a higher rate of innovation than areas with a low degree of interaction.

Although they appear to be commonsense, these are important subsidiary theories of the interaction sphere theory and should be partially adopted when making use of it. Still, there is some criticism to be given to both of them. Regarding the "interaction entails innovation" theory it is important to note that innovation may also spring forth from various other factors, such as societal stress, affluence, exceptional qualities of individual agents and simple happenstance. In addition, it is often a matter of controversy whether innovations spring forth from interactions or could have been invented locally, such as in the case of the so-called "Pre-Arawak pottery horizon" in the Greater Antilles (Rodríguez Ramos *et al.* 2008). In sum, one could best say that "interaction assists innovation" instead of enforcing it. With respect to the idea that a high degree of interaction forces a high degree of similarity in material culture, it has to be noted that there is no one-to-one correlation between the quantity of shared material culture and the intensity of interaction. However (*pace* Rodríguez Ramos 2007:46), I would say that the amount and the quality of materials at an archaeological site is, at the least, indicative of the type and magnitude of the interactions in which this site participated.

The most important subsidiary principle is that an interaction sphere is always focused around a particular kind of interaction. Caldwell, for instance, proposed that shared religious ideology was at the centre of the Hopewellian interaction sphere (Caldwell 1964). The idea that shared elements of material culture between the Greater Antilles and Northern Lesser Antilles are caused by esoteric interaction, rather than intensive exchanges of raw materials or social valuables, is another proposal for such a religious interaction sphere (Allaire 1990). There are other Caribbean examples to be given. The distribution of Chican pottery from Punta Macao in the Eastern Dominican Republic is a case in point of a localized interaction sphere based on the exchange of ceramics from one site (Conrad *et al.* 2008; Samson 2010:94; van As *et al.* 2008). Whereas geographically extensive lithic exchange may have been the motor behind the proposed Northern Lesser Antillean interaction sphere (Crock 2000; Haviser 1991; Knippenberg 2006). As proposed by Rodríguez Ramos, a pan-Caribbean interaction sphere might be founded on the basis of a Caribbean-wide interest in the exchange of so-called "social jades" (Rodríguez Ramos 2010).

From this follows that the artefacts at the heart of an interaction sphere would have a larger and more consistent range of distribution than those that are not. The fact that specific artefacts came to be at the heart of a particular system is an outcome of universal social tendencies made more specific by local historical processes of supply and demand. However, the resulting position of the artefact in the exchange system would have been reasoned out in terms of socio-cultural notions of value by the persons partaking in that particular exchange system (cf. Graeber 2001).

One of these reasons could be that these social valuables were part of a separate "sphere of exchange." This classical anthropological idea holds that there are systems of exchange in which objects are assigned to different transactional categories of value that have no restriction on exchanges within their proper category, but that result in an incompatibility of value conversion between categories (Sillitoe 2006). In the exchange system of the Nigerian Tiv, for instance, foodstuffs and every-day utensils can be freely exchanged against one another, while there is an autonomous sphere of exchange that consists of brass rods, cattle, slaves, white cloth and magical items, and another sphere consisting of "dependent persons", e.g. women and children (Bohannan 1955).

Exchange spheres gained universal appeal when they were discussed in the context of modern commoditization (Kopytoff 1986), but the main ethnographic examples of autonomous spheres of exchange come from the Pacific and Africa, with very few clear-cut cases outside these regions (Sillitoe 2006).⁵ It should also be recognized that exchange never takes place in a vacuum, but carries other material and immaterial culture with it (Malinowski 1922:92), which would make it hard to disentangle spheres of exchange in a pre-Columbian palimpsest of exchange practices (cf. Struever and Houart 1972). Yet, I think that the existence of exchange spheres should be regarded as a real possibility in the Caribbean, albeit not in such a strict sense as some ethnographic case-studies suggest. In the case of Late Ceramic Age shell *guaízas* it was shown, for example, that these social valuables were part of an exchange sphere that consists of a class of objects that were specifically meant to be exchanged with extra-communal others (Mol 2007).

The existence of prehistoric spheres of exchange, even though it is quite likely, is only one route to explain the existence of pre-Columbian interaction spheres. It is also true that the socio-cultural dynamics that create and maintain interaction spheres are poorly understood by archaeologists (Hayden and Schulting 1997). Therefore, a third sphere needs to be added to the proposed archaeological interactional theory, namely the social sphere.

The model, based on Sahlins' (1972) discussion of reciprocity and kinship distance, consists of concentric rings that flare outward from the smallest social unit — this is the residential group in Sahlins' model — toward the exotic, i.e. the social unknown. This is

⁵ Although a Lowland South American example exists (Dean 1994).



Figure 1 A modified version of Sahlin's model of primitive exchange (Sahlins 1972:199). In this version "the exotic" has been added as the outer zone of the social sphere.

coupled by ideas from evolutionary psychology that show that individual agents and institutions use different social strategies to organize their ever expanding social circles. For the two smallest social units the most important strategy is generalized reciprocity and strong reciprocity (Fehr and Fischbacher 2003; Hamilton 1964a,b; Mol 2010). In the sphere beyond that, the one of the village, the prevalent social strategy would consist of a mix of indirect reciprocity, reciprocal altruism and group altruism (Richerson and Boyd 2004; Trivers 1971). In the so-called tribal sphere social strategies would mostly consist of direct reciprocity (Richerson and Boyd 2004; Chapman 1980; Mauss 1990). In intertribal relations negative reciprocity is the guiding principle of interaction, which might consist of actual physical violence, but antagonistic types of interaction, such as giving in order to humiliate or exacting tribute through threat of force, are other examples of negative reciprocity (Bourdieu 1977:192; Bowles 2009; Sahlins 1972:195-196). Paradoxically, encounters that take place in the last ring, labelled "exotic", are neither social nor antisocial, but rather marked by a distinct absence of sociality.

The three theories of interaction encountered here are mutually supportive, addressing different aspects of an archaeological interactional theory. Interaction takes place in regional spheres that consist of social individuals and institutions that are connected through their goods and information exchange networks. Multiple interaction spheres might exist in the same region, because the exchanged material and immaterial culture might belong to specific transactional categories, i.e. spheres of exchange. These interaction spheres and spheres of exchange are characterized by their social strategies, from free-spirited altruism to all-out conflict. Conversely, the transactional categories of material and immaterial culture and the range and quantity of interaction — exchange and interaction spheres —have a structuring influence on the social strategies used in the interaction. In practice the combined theories offer a way of thinking that takes account of interaction range and intensity, type of exchange valuables and social mechanisms in order to address pre-Columbian interaction in the Caribbean basin. To show how these theories might be used in concert two routes of approach will be taken. The first will be an analysis of Greater Antillean protohistoric interactions using ethnohistorical documents. The second will be a brief overview of style, form, and function of Late Ceramic Age (AD 800-1492) social valuables.

Exploring interaction in the proto-Contact period

The very first years of contact are interesting in their own right, but are even more important for archaeologists who attempt to tease out information on pre-Columbian Antillean society before the irreversible destruction of indigenous lifeways in the early Contact period. It is well-known that the study of early sources that describe the Castilian explorations in the Antilles is not unproblematic.⁶ Therefore, when ethnohistory is used it should be done sparingly and critically and in order to test new theoretical models or hypotheses that are constructed to solve an archaeological problem — in this case how were interaction spheres oriented and what were the prevailing social strategies and materials used in these

⁶ First of all there is the issue that ethnohistoric documents are of a singular nature and have often been copied down from originals, so that details might be false without the possibility to verify this in other corroborative sources. Also, simply transcribing the well-known primary sources and using the information in them for the interpretation of Caribbean material culture, is often not that interesting, seeing that this has already been done extensively (Fewkes 1907; Fewkes 1922; Lovén 1935; Rouse 1948a,b). Thirdly, it has to be accepted that ethnohistory often has a way of dominating archaeological accounts of the past, which can lead to a disproportionate reliance upon subjective documents to elucidate historical "truth" (Machlachlan and Keegan 1990). This is perhaps why, during the Leiden in the Caribbean Symposium where this paper was presented, it was pointed out to me that the main sources I use in my analysis are seen as highly problematical from a historical perspective, because the information cannot be confirmed using other sources. I believe that these sources should be used sparingly and should not be relied upon for detailed descriptions of the indigenous way of life. This problem especially affects the first part of my analysis that tries to explain indigenous behaviour and rationalizations as described by Europeans in subjective sources, which makes it, I agree, somewhat tentative. The second part of my analysis relies on indices that are either present in the text or are not. I reject the opinion of those critics that say the sources should not be used at all. Such a destructive critique is fine for those who are only interested in the history of the documentation of European and indigenous contact, but not for those who wish to explore hypotheses that attempt to explain the human past.

spheres (cf. Mol 2008)? When taking these precautions ethnohistorical accounts, such as the following taken from the first days of contact — from the Diary of Columbus as transcribed by Las Casas — can be quite instructive (Navarete 1922: 33):⁷

"Lunes 15 de Octubre [...]

Y estando á medio golfo destas dos islas, es de saber de aquella de Santa Maráa y de esta grande, á la cual pongo nombre la Fernandina, fallé un hombre solo en una almadia que sepasaba de la isla de Santa María á la Fernandina, y traia un poco de su pan, que seria tanto como el puño, y una calabaza de agua, y un pedazo de tierra bermeja hecha en polvo y despues amasada, y unas hojas secas que debe ser cosa muy apreciada entre ellos, porque ya me trujeron en San Salvador dellas en presente, y traia un cestillo á su guisa, en que tenia un ramalejo de cuentecillas de vidrio y dos blancas, por las cuales conoscí quel venia de la isla de San Salvador, y habia pasado á aquella de Santa María, y se pasaba a la Fernandina."

This particular excerpt is brimming with information about the nature of interaction two days after the first contact between indigenous Bahamians and Castilians. There is information about the type of travel rations and other tools for travel, the speed and itinerary of interisland travel, coveted exchange valuables, and the reason for travel: to spread the news of Columbus's arrival. In addition, it shows that there must have been an interaction sphere that consisted of at least Rum Cay, Long Island and San Salvador. Also, the man was carrying objects that were highly valued among all the islanders, but was unarmed and travelling alone. So, he seems to not have been in any direct danger, but was equipped as was socially acceptable to his neighbouring communities, i.e. possibly beautified by using the powder for body decoration and bearing tobacco as a small gift. Therefore it is quite reasonable to assume that the particular social circle in which he was moving was located somewhere on the midpoint of the social sphere model, i.e. the level Sahlins calls "tribal" (Sahlins 1972:194-195).

The description of the interactions between Columbus and indigenous Bahamians in the diary can also be used to further explore proto-Contact Bahamian interaction and social spheres.⁸ Particularly, the information that Columbus gives about the behaviour of his indigenous Bahamian guides is enlightening in this regard. Columbus's initial idea was to carry seven indigenous Bahamian men across the ocean and have them displayed at the court in Seville, but he soon came to rely on them for communication with other indige-

⁷ All translations are adapted from Beckwith and Farina's translation (Beckwith and Farina 1990), but another translation has been substituted by me at times that I feel their translation is not in line with the source text (Navarete 1922):

[&]quot;Monday, October 15

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."

⁸ Keegan (1992:Chapter 8) has a nice discussion on Columbus's route and proto-contact Bahamian sites in the region.



Figure 2 A suggested model of the social sphere of the Bahamian guides. Regions and distances between them are not in scale. Only locations have been displayed for which information is available.

nous groups and for geographic and cultural information.⁹ As a grim spectre of the violence that would follow, the seven guides did not join out of their own volition, but were in fact abducted from the island of San Salvador on the 14th October of 1492.¹⁰ At first the men tried to escape, which one of them managed successfully with the aid of another man in a canoe the following night. One other managed to escape in a similar fashion the following day, when Columbus was anchored off the coast of Rum Cay (Navarete 1922:October 15). Following attempts were thwarted and once Columbus's ships left the Bahamian archipel-

⁹ It has always been a mystery how Columbus and the other Iberians communicated with the indigenous people of the Caribbean during initial contact. It should however not be forgotten that Columbus and many others were travelled men who had been working their way through intercultural situations in which non-verbal communication was a necessity. The same might be said of the indigenous people of the Caribbean, who might have partaken in interaction spheres that were not hindered by language barriers.

^{10 &}quot;Domingo 14 de Octubre [... E]sta gente es muy simplice en armas, como verán vuestras Altezas de siete que yo hice tomar para llevar y deprender nuestra fabla y volvellos" (Navarete 1922:29).

[&]quot;Sunday October 14

This people's use of arms is the simplest, as your Highnesses [Isabella I and Ferdinand II] will see from the seven that I took to be brought [to the court], taught our language, and returned home."

ago the remaining men did not get another chance to escape. It seemed that this was not because they were resolved in their fate and were any less homesick than before, but rather because they feared the inhabitants of the other regions Columbus visited.

It is this kind of information that allows a reconstruction of a combined social and interaction sphere for the pre-Columbian inhabitants of San Salvador. The rescue attempt - undertaken immediately and at considerable risk to the rescuers - for example, is an argument for the idea that there were close interactions and social ties between the inhabitants of San Salvador and Rum Cay. It is the type of semi-altruistic action that could be explained as based on established patterns of generalized or strong reciprocity. In addition, the willingness to undertake a rescue attempt is not seen to be present among other people of the Bahamian islands visited by Columbus, indicating that the San Salvadorians simply did not share such a strong social bond with them.

Nonetheless, the kidnapped guides seem to have been reasonably familiar with the names, geography and socio-political situation of other islands such as Crooked Island and Fortune Island (Navarete 1922:19 and 21 October). When also considering the excerpt of the lone man travelling in his canoe who brings the news of Columbus's arrival, this leads to an argument that this region was characterized by an interaction sphere in which strategies from the intermediate level of the social sphere — indirect reciprocity and reciprocal altruism based on a loose sense of group unity — would have dominated.

Beyond the Bahamian archipelago the guides seem to have less and less grip on local affairs. They seem to have some knowledge of travel routes to the Gibara region and surrounding regions in the north of Cuba and appear to be quite willing to communicate with the people there (Navarete 1922: 26, 29, 30 and 31 October). This seems to indicate that there was at least a bond of social communality between them, perhaps because they had had some past dealings or had gained some information through exchange partners. When Columbus sails beyond the part of Cuba that is closest to the Bahamians' island of origin, they become more and more fearful of the local inhabitants (Navarete 1922:1 December). The transcription of Columbus's diary suggests on various occasions that the Bahamian guides seemed to be extremely afraid of progressing east towards Hispaniola and surrounding islands. They warn of the violent *Canima* people that live in a region or island called Bohio who are one-eyed monsters with dog snouts (e.g. Navarete 1922:26 November).¹¹ This suggests that interactions between the place of origin of the Bahamian guides and these regions were of a progressively anti-social nature. It seems that knowledge through experience or hear-say is substituted by superstition and a mythic geography. All the combined excerpts on the Bahamian guides leads to a tentative reconstruction of their combined social and interaction sphere (Figure 2).

This should not be understood as a social interaction variant of optimal foraging theory. First of all, the focus of interactions and social attitudes would have shifted continuously in the pre-Columbian Caribbean depending on local "geo"-political processes and individual attitudes. In addition, the data is not of such a nature that it can be fully relied

¹¹ This reference to *Canima* people is actually the first reference to an idea that was later conflated with others into the infamous term "cannibal" (Keegan 2007: 36). In fact the indigenous Cubans from the Río de Mares region also warned Columbus of men living to the east that had only a single eye and others with dog muzzles who ate men that they capture, and subsequently decapitate, drink their blood, and cut off their genitals. Fortunately, while absence of evidence is not always evidence for absence, the available evidence seems to dismiss the existence of these creatures to the realm of fantasy.
upon for such detailed interpretations. The excerpts from the hand of Las Casas — who brought his own subjective agenda to his transcription — represent statements and behaviours of only five individuals, who had good reason not to act truthfully. Moreover, they were interpreted by Columbus, who although an experienced traveller cannot be called an objective ethnographer.

Nevertheless, this model derived from ethnohistorical information seems to be backed up by statements on geographical distances and social attitudes that can be found in other documents describing early colonial indigenous interactions. There is, for example, the information Chanca provides about the range of the Island Carib of Dominica and Guadeloupe— 150 *leguas* or 630km (390mi) —, which corresponds with the Bahamian range of the expectation of anti-social behaviour (Chanca 1992:23).¹² In addition, there are also the statements on the alliances between caciques from Higuey and Puerto Rico in the Mona Passage area, a sphere that spans roughly 350km (220mi; Oliver 2009).¹³ Ultimately, further evidence has to be provided through a discussion of the archaeological contexts of proposed interaction spheres. There are, however, still other ways to explore interaction using the ethnohistorical record.

Information exchange in the Greater Antilles

The diary of Columbus hides clues to another social practice that must have been highly important in pre-Columbian interaction networks: the exchange of information. Sharing information is a vital element in any human's life and is especially important for the creation and maintenance of interaction networks (Axelrod 1997; Gilbert *et al.* 2009; Levinson 2006). Nevertheless, to visualize information exchange through the archaeological record is nigh on impossible without the use of written sources.

As the above excerpt of the man in his canoe carrying the Castilian coins and beads shows, the news of Columbus's arrival was an important piece of information that travelled quite quickly along existing routes of interaction. The following analyses will show that not only the news of the arrival of Columbus, but also rumours of his behaviour towards the indigenous people of the Caribbean travelled quite rapidly.

The diary contains information on how Columbus treated local people along his route and focussed on behaviour that would have been unequivocally understood by the indigenous populace as either friendly, neutral or hostile actions on the part of Columbus. These were plotted on a timeline that runs for the duration of Columbus's stay in the Caribbean during his first voyage. Factual information concerning the behaviour of the indigenous people toward Columbus was collected and their disposition toward him was also plotted on the same timeline. Their disposition could be objectively gauged when the document mentions that they extend help, engage in what Columbus describes as trade, flee from Columbus and abandon their villages, or threaten with or engage in hostilities. These are quite unambiguous types of behaviour which were categorized for the sake of brevity as friendly, interested, distrustful, or hostile, respectively.

¹² This distance is also roughly similar to the distance over which the *Kalinago* people, who are the historic counterpart of the Island Carib, themselves expected anti-social behaviour, *viz.* damaging attacks of dark shamanism sent to them by their enemies on the mainland (Mol 2009).

¹³ This distance is, to make an impromptu analogy with another archipelagic interaction sphere, the same as the farthest extents of the famous Melanesian Kula ring (Malinowski 1922).



Figure 3 A graph plotting Columbus's behaviour and the attitude of the indigenous people towards him in the months October, November, December and January of AD 1492 and 1493. There are three types of nodes: triangle (Bahamas), circle (Cuba) and square (Hispaniola). Separate nodes in the graph cover three days in the diary. The colour of the nodes entails either social (light grey) and antisocial (dark grey) behaviour, or no interaction (white).

The resulting graph (Figure 3) shows an unmistakable reaction from indigenous individuals and communities to the actions of Columbus. The antisocial actions of Columbus are particularly revealing in this regard. It should be remembered that the group of European sailors were exotic strangers in the eyes of the original inhabitants of the Caribbean. Interacting with them offered opportunities, but also held real dangers. Moreover, the fact that Columbus captures 27 men, women and children and carries 23 of them away on his ship to Spain should be understood from an indigenous perspective, in which raiding and abduction probably belonged in the category of most hostile actions. What is visible from the graph is that whenever Columbus abducts people, the disposition of those he subsequently encounters drops to distrustful or hostile. If he starts acting peacefully again, the relations only slowly improve. If the Iberians keep acting sociably relations remain good and even improve to the point that various individuals and communities actively help Columbus. The indigenous people of the Caribbean clearly follow a social strategy that is based on fear and loathing of the raiding strangers, but open to peaceable interaction when Columbus seems to be acting socially.¹⁴

The interesting fact here is that Columbus did not interact with just one indigenous counterpart. Still, indigenous individuals and communities respond to Columbus's actions as if they are aware of his treatment of others in more distant regions. This can only have happened through the active distribution of information along existing sea and coastal

¹⁴ It is striking that the strategy of the indigenous people in their interactions with Columbus mirrors "the best possible strategy" in an "Iterated Prisoner's Dilemma," a modification of a classic game in game theory which revolves around trust and distrust (Axelrod 1997). This strategy is based on a 'Tit for Tat' approach that is set for cooperation, but punishes freeloaders, while allowing the freeloaders to better their behaviour in order to reinitiate cooperation. This shows once again that the indigenous people of the Caribbean were quite adept at handling intercultural social contact and were also quite intent on establishing peaceful relations with their overseas visitors (cf. Mol 2007, 2008).

routes of interaction. By tracking the actions described in the Columbus diary and comparing these with the reactions of the indigenous people along Columbus's route it is possible to identify the routes for different pieces of information. One such example is the information on the capture of sixteen people in the Bahía de Naranja area in Cuba. Columbus travels eastwards after this, yet the news must have travelled faster, since Columbus does not have any other interactions until he is near Baracoa on the 27th of November. The inhabitants of this area try to prevent Columbus from landing, which nearly results in a fight on the 1st of December. Columbus manages to defuse this situation, though, and finally peaceful exchange ensues.

When one finds the *shortest distance* of one route and divides this by the *maximum number* of days it could have taken the information to travel from the starting point to the end point of that route, it is possible to calculate the *minimum speed of the spread of information per day*. In this way it is possible to define minimum speed of information/day of all the eight separate sea and coastal routes of information dispersal.¹⁵ When the speeds from these different routes are combined, the minimum speed/day can be calculated for *all these routes together*. The result is a mean and median of 15km (9.3mi) per day.¹⁶ When the proposed speed of travel by canoe in the Caribbean is taken into account, which is estimated to be around 5,5 to 6,5 km (3.5 to 4 mi)/hour on long-distance trips with a large canoe (Bérard *et al.* 2009; Billard *et al.* 2009). This corresponds to a group of at least 20 fit men and/or women travelling no less than three to four hours per day by canoe in order to reach the distance indicated by the average minimum speed of information spread per day.¹⁷

Since not just one piece of information is distributed, i.e. the landing on San Salvador, but several distinct pieces of information, these cannot have travelled through the effort of one single individual or group alone. So, because a Bahamas to East Hispaniola "marathon run" can be rejected, information must have spread on a relay basis using efficient and interconnected routes of interaction.¹⁸ This is then, a perfect example of an interregional interaction sphere in which separate smaller spheres are interlocked for the purpose of the

¹⁵ The values for all the individual routes that could be identified are as follows: Within the Bahamas 17km (10.5mi)/day; Bahamas to Cuba 25km (15.5mi)/day, Cuba North Coast A 15-18km (9.3-11.2mi)/day; Cuba North Coast B 10-12km (6.2-7.5mi)/day; Cuba to Hispaniola 13-15km (8.1-9.3mi)/day; Bahamas to Hispaniola Alternative 8-10km (5-6.2mi)/day; Hispaniola North Coast A 17-18km (10.5-11.2mi)/day; Hispaniola North Coast B 8-10km (5-6.2mi)/day.

¹⁶ Because no information is available on pre-Columbian sea or coastal routes in this region of the Antilles the shortest distance is taken from a contemporary map and it is suggested that the route follows the coast. In some cases a shorter alternative has also been taken by skipping the coastal route in favour of making a passage that would have involved a short journey on open sea. The number of days it would have taken for information to spread is necessarily a maximum, because there is no way to tell exactly when the information has arrived at a certain spot before Columbus arrives on the scene. This all ends up in a minimum speed of information spread, which could have been higher in practice. Nevertheless the closely corresponding mean and median suggests that the speed of information exchange would have been around 15km (9.3mi)/day.

¹⁷ A messenger using a canoe is the most probable means of transporting information along pre-Columbian interaction routes. Walking would have been possible, but more time and energy consuming. The entry on 6 December of Columbus's diary also provides a different interaction medium: signal fires, which are suggested as a possible explanation for the large bonfires that were seen during the night (Navarete 1922:91). Although these fires could have acted as signals to warn of Columbus's arrival, this would not have been a suitable medium to convey information about Columbus's behaviour. Prior notification of this information needed to have been transferred orally.

¹⁸ It has to be granted that the arrival of the Europeans has also been an event of epic nature in the history of the Caribbean. The extent and the speed with which the information on Columbus and the other Iberians travelled would probably reflect this. Nonetheless, the derived speed of interaction is not solely an artefact of the Contact period since the interaction would have been dispersed along pre-Columbian interaction routes.

distribution of a particular kind of social valuable, in this case information. It is difficult to know exactly what the particular social strategy was behind the distribution of information in the Late Ceramic Age Caribbean. Examples from other parts of the world suggest that information — especially that of social dispositions of others — is quite freely exchanged as part of indirect and strong reciprocal strategies (Fehr and Fischbacher 2003; Mol 2010).

Interaction and material culture

Although ethnohistorical documents shed some light on the role of material culture in proto-historic interaction (Mol 2007), this is not nearly enough to explain the role of material culture in pre-Columbian interactions in full. When extrapolating social interactions from the archaeological record, however, one faces an archaeologically difficult heuristic step: the step from the material to the social (Binford 1962).

If one looks at the material remains of pre-Columbian Caribbean cultures from a macrolevel they can give the false impression that nearly every region interacted with every other region, since all material culture shares at least one stylistic or formal trait with another region. Conversely, when zooming in to the archaeological region or site level, it often seems



Figure 4 A social interactional model based on Late Ceramic Age social valuables (photos taken by author).

that localities were discrete cultural units that, although they would have shared some characteristics with neighbours, have a unique material culture and therefore a unique culture. The macro-level view often focuses on iconography of ideologically charged items of material culture, where the micro-level view often hinges on ceramic style and form. Often the first view leads to an account that stretches interaction patterns and glosses over regional differences, while the other leads to an atomistic view of pre-Columbian socio-cultural practice. Paradoxically, neither of these views is necessarily wrong. They simply represent different ends of the interactional spectrum (Figure 4).

This social interactional model is a conflation of Sahlins' (1972) social spheres and Caldwell's (1964) interaction spheres, but geared especially towards the social value of material culture. It particularly incorporates part of the idea of exchange spheres in that there are certain types of artefacts whose social value is most suited to particular transactional rings of the interaction sphere. From an initial cross-cultural review of exchange practices it is possible to say that the type of item used in a particular social sphere seems to be underlain by universal patterning (Mol in prep.). Nevertheless, the social interaction sphere is mostly socio-culturally constructed and contingent on environmental restraints and other local economic processes. The structure of the hypothetical model that is offered here should therefore be seen as having universal potential, but specifically constructed with the Late Ceramic Age Greater Antilles in mind.

The type of social strategy used in the different rings of the model is similar to the synthesized model that was described earlier (Figure 1), but here material culture plays a specific role. The inner ring represents material culture that is most valued in localized interactions along short social distances, i.e. the household or clan, moiety, lineage etcetera. Because of its high prevalence in day-to-day social practice this is the sort of material culture most abundant in habitation sites, e.g. non-ceremonial ceramics, foodstuffs and tools.

The intermediate level — representing interaction in larger villages, houses and the local region — is characterized by objects that represent corporate values (Godelier 1999). Examples might be ceremonial objects, such as idols, paraphernalia and ceremonial ceramics, and would have a range of stylistic and formal distribution that depends on the size of the larger communal institutions. They may also have a larger regional distribution, but styles and forms would vary slightly to moderately over this region, which would represent interlocked local interaction spheres.

Moving further outwards, the next rings represent interactions over extended geographic and social distances and are characterized by two different types of valuables: exchange valuables and infrastructural valuables. Exchange valuables are objects that are highly valuable and conspicuous, but that can be alienated from their local value system. They often fall in the category of adornments, because they have their highest value when prominently on display. Infrastructural valuables are objects that are literally part of the infrastructure of long-distance interactions. Their function is to mediate in the socially precarious situation of interaction over extended social distances. Objects such as these function to delineate the interaction by setting it apart from the everyday and provide a discrete arena in which the interaction is enacted. Ceremonial seats are a near universal example of such objects (Sahlins 1975). Vehicles for transportation - often augmented with specialized magic to aid in the interaction (Malinowski 1922) - are a more literal case in point. The outermost ring represents antisocial actions that would have formed an important part of past interaction spheres, but which are notoriously difficult to reconstruct archaeologically (but see Chacon and Mendoza 2007). The region outside of the rings is associated with those objects that would not have been part of the social sphere, i.e. exotica (Helms 1988). These objects could take any form as long as they have exotic geographical and social origins. However, the dangerous "in betweenness" of interactions with the great social unknown leads them to be treated in a special way: either by attributing to them an extremely high value, or very little value because of the objects' inability to be "socialized" into local systems of value.

Of course, objects do not solely belong to one category. Their social value is contextually dependent. The same ceramic bowl for example might be used during special occasions at family dinners, as well as for neighbourhood festivals or high status foreign guests. However, its prevalent mode of use comes from a certain social interaction sphere. It has to be said that this model is a working hypothesis and will be elaborated by more examples and tested in future work. Nevertheless, some Late Ceramic Age examples will be briefly presented here.

Seeing that it represents such a massive variability in style and form - with vast underlying differences in the chaîne opératoire and socio-cultural contexts of use - the Ostionoid series of the Greater Antillean Late Ceramic Age represents even more of a "veneer" as an artefact of archaeological classification then the Early Saladoid (Keegan 2004). It is commonly accepted that the Meillacan and Chican subseries should rather be seen as autonomous series - Chicoid and Meillacoid - that are loosely connected through time and space. Furthermore, there are suggestions for a plethora of localized complexes and styles, which are difficult to relate to the bigger picture. The Punta Rusia archaeological region in the Puerto Plata and Monte Cristi provinces of the North Dominican Republic, provides a good example of how larger style areas consist of more complex local interaction and social spheres. Here sites have been found with differing, contemporaneous stylistic associations such as the Chicoid and Meillacoid on the same habitation sites, with an additional mixed style that draws on elements from both (Ulloa Hung, personal communication 2009). Further analysis by Ulloa Hung is pending, but it is already possible to see that the archaeological record of the Punta Rusia region is the outcome of local identity formations in interaction and social spheres that would have been played out in chorus in a relatively small region and could even have been mediated on the site level (cf. Dietler and Herbich 1998). Recent research has shown that similar complex situations exist in different regions in the Greater Antilles, such as the Chicanized Meillacoid of the Cuban province of Holguín or the distinct Meillacoid ceramics of Jamaica (Keegan and Atkinson 2006; Valcárcel Rojas 2002).

If one turns to objects that have an interregional distribution in the Antilles, the large three-pointed *zemi* is one of the most iconic examples of Late Ceramic Age material culture. This conspicuous artefact category would have represented and fortified corporate values both within the community and in interactions with other communities and super-human beings. The area of distribution of the "classical" three-pointed *zemies*, however, is in actual fact not that large (Oliver 2009:91). It is confined to the region of the Chicoid heartland with some less characteristic examples in other regions. Even within this heartland it is possible to identify different regional styles and forms - e.g. between Puerto Rico and the Dominican Republic. Moreover, certain areas that are traditionally seen as part

of this heartland (Rouse 1992) - e.g. north Dominican Republic - have not yielded any large three-pointed *zemies* to date (Ulloa Hung 2009, personal communication). Elaborate three-pointed *zemies* are examples of corporate valuables that would have been critically important for intercommunal interactions and constitution of sociality in the regions in which they are found (cf. Oliver 2009). They would probably not have had such connotations outside their immediate area of distribution, where other types of material culture would have played a similar role — e.g. Jamaican collections have a plethora of pestles and other artefacts with bird iconography, which makes them candidates for a comparable corporate role.

True pan-Antillean categories of material culture are uncommon. The ceremonial *duho*seat is one of the few examples of such a phenomenon. Although *duhos* definitely vary in style over the region, due to their form and function they would have been recognized from the Bahamas down to the Windward Islands and probably beyond (Ostapkowicz *et al.*, this volume). I suggest that their use-context in ritual exchanges between exchange partners would also have been the same or nearly the same cross-regionally. *Duhos* would have figured as a focus of interactions that served to stress, but simultaneously bridge large social distances as comparable seats did among societies in the recent past of the South American Lowlands and ceremonial seats still do in many other cultures (Koelewijn and Rivière 1988; Sahlins 1975).

Shell faces have an almost equally large area of distribution as the *duho*. These objects, known as *guaízas* in proto-Contact Hispaniola, were highly valued as intercommunal exchange valuables due to their ability to control and influence one's exchange partners (Mol 2007). It cannot be said for sure whether they had similar connotations in Lesser Antillean exchange systems, but their raw material, mainly *Lobatus gigas* with some examples of *Lobatus costatus*, form and basic iconography is nearly the same over a large area. This means that a Lesser Antillean shell face would have been quite recognizable among Greater Antillean communities and vice versa. This would make them adaptable to various spheres of exchange and interaction and have allowed them to function in similar social strategies.

Preliminary conclusions on Late Ceramic Age social interaction

The above are clear examples of how various artefacts can be part of different social spheres and therefore have different values in different interaction spheres. Their quantity on sites and their absolute value, i.e. energy expended in their production, is a measure of the specific social sphere in which they are used. Their distribution and stylistic variation is also a measure hereof, as well as an indication of the type of interaction sphere in which they would have been used, i.e. short, intermediate and extended social distances. It has to be said that specific cultural data greatly improves the model and that there is no one-to-one correlation between different cultural settings, which limits the more general applicability of the proposed model somewhat. Nevertheless, the concepts behind the model are of universal significance in the sense that there is a universal tendency to delegate certain social strategies to certain spheres of exchange and interaction.

Both the ethnohistorical case-studies as well as the example of Late Ceramic Age material culture have shown that exploring past interaction based on a combination of interaction, exchange and social sphere theories is feasible in the Late Ceramic Age. It shows that Caribbean localities were interconnected on different levels through interlocked interaction spheres of various sizes and transactional categories. It also points to a situation in which specific, universally recognizable social strategies were used to mediate various types of interaction, such as the spread of information, the forging of local and corporate identities and the creation of shared platforms of interaction through cross-culturally recognizable infrastructural and exchange valuables. I intend to continue these explorations in future work to lend additional strength to the proposed arguments and the model.

Finally, on reading this piece, some will be reminded of ideas that have been present in Caribbean archaeology for a long time. On one level I *am* suggesting that we can speak of communities participating in more or less circumscribable spheres of interaction and style areas of which their central importance to Caribbean history has been previously recognized (e.g. Rouse 1992). This is the same level on which the value of theories of interaction that have long been present in Caribbean archaeology is acknowledged (e.g. Rouse 1986). On another level I acknowledge the high potential of Antillean and Caribbean interconnectivity, while on yet another level it should be stressed that local patterns of interactions and exchange are *equally* important to our understanding of past interaction processes and still in need of further analysis, either stylistical or archaeometrical (cf. Hofman *et al.* 2007, 2008; Knippenberg 2007; Rodríguez Ramos 2007). Caribbean interactions and their concomitant social strategies and resulting material culture complexes can only be understood as multi-scalar processes and therefore would have been a factor of importance on all levels of the pre-Columbian Caribbean past.

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EARLY PHYTOCULTURAL PROCESSES IN THE PRE-COLONIAL ANTILLES

A pan-Caribbean survey for an ongoing starch grain research

Jaime R. Pagán-Jiménez

This work examines the available archaeobotanical information of the circum-Caribbean with the aim of re-evaluating the botanical cultures of the region. My intention is to demonstrate that the period of the earliest population movements to the islands (ca. 5600 BC) was mediated by complex interregional processes in which crop plants were important items within exchange networks of goods and ideas. The article demonstrates that crop plant dispersions along with other cultural practices intrinsically linked with them were a reality since the dawn of human arrival to the islands. Details on the magnitude of these processes are unknown and further research will deal with these issues. This work is intended to be a basic framework for the largest archaeological starch grain study which – to date - has been formulated in the hemisphere.

Este trabajo explora información arqueobotánica del circum-Caribe con el objetivo de revalorar el ámbito de las culturas botánicas de la región. Mi interés es demostrar que el periodo de los primeros movimientos humanos hacia las islas (ca. 5600 BC) estuvo mediado por complejos procesos interregionales y las plantas económicas formaron parte esencial de las redes de intercambio de bienes e ideas. Enfatizamos que la dispersión de plantas y otras prácticas intrínsecamente relacionadas con ellas fueron una realidad desde los albores del poblamiento humano de las islas. Desconocemos la magnitud de todos los procesos señalados y deseamos detallarla en futuros trabajos. Este escrito es un marco de referencia básico para el más abarcador estudio de almidones arqueológicos que se haya formulado - hasta ahora - en el hemisferio.

Ce travail examine les données archéobotaniques actuellement disponibles pour la région circum-Caraïbe en vue de procéder à une réévaluation des cultures botaniques de la région. Mon intention est de démontrer que les premiers mouvements démographiques insulaires (ca. 5600 BC) se sont produits par le biais de processus interrégionaux complexes dans lesquels les plantes alimentaires représentaient des articles importants dans les réseaux d'échange de biens et d'idées. L'article démontre que la dispersion de plantes alimentaires, tout comme d'autres pratiques culturelles intrinsèquement liées à ces dernières, ont été une réalité dès l'arrivée de l'homme dans le monde insulaire. Les détails sur l'ampleur de ces processus sont toujours inconnus à ce jour et de nouvelles recherches se chargeront de traiter ces questions. Ce travail vise à être un cadre de référence de base pour l'étude archéologique la plus élargie de graines d'amidons formulée jusqu'à ce jour dans l'hémisphère.

Introduction

Experts in Antillean archaeology have so far argued that two different pre-Arawak or 'Archaic' traditions made the pioneering entry into the islands from separate regions: the Yucatán Peninsula and the Orinoco delta, located near both ends of the Antillean arc of isles (Cuba and Trinidad/Tobago). Archaeological narratives tell that, once on the islands (ca. 5500 BC), pre-Arawak people maintained their movement from Cuba and Trinidad/ Tobago to the northeast of the island arc, converging in Puerto Rico. Supposedly equipped with subsistence strategies based on hunting, fishing and gathering, the pre-Arawak people lived for at least 5000 years on the islands until the arrival of the Saladoid: a new and 'more advanced' culture which allegedly displaced or assimilated them (see Rodríguez Ramos 2010 for discussion). Arguments and assumptions about the 'true origin' of the pre-Arawak people have been built on comparative (i.e. morphological) elemental studies of lithics (see Coe 1957; Wilson *et al.* 1998) and cartographic analyses of marine currents of the Caribbean Sea (see Callaghan 2003; Rouse 1992), in conjunction with a Western rationalization which sees the Yucatán and Orinoco regions as obvious jump stations to the Antillean arc.

Starting in 2004, the author began to collect archaeobotanical data which strongly suggest a much more complex phenomenon. Today, some of those early groups traditionally characterized as non-agricultural and nomadic, are considered carriers and producers of domestic plants and crops of continental origin. These plant assemblages were extremely important for many Neotropical cultures since at least 7000 BC and through all the periods defined to this date in the circum-Caribbean region. The archaeobotanical data also suggest other possible continental points of origin and/or intense multi-vectorial interactions for the early human and crop dispersals into the Antilles. These interactions seem to have been initially configured by pre-Arawak people and reinforced by subsequent cultures through time. In this paper I will make a synthetic regional survey on the phytogeography of some important circum-Caribbean economic plants based primarily on the recovered microbotanical remains, particularly starch grains, pollen and phytoliths. The main objective here is to set up wide empirical foundations for the further formulation of feasible phytocultural scenarios around some of the most significant human interactions and movements of plants in the pre-Colonial Antilles and the Greater Caribbean as a whole.

Continental circum-Caribbean and beyond: its early phytocultural spectrum

Central America

Maize (*Zea mays*) has been underestimated in Antillean archaeology. It has been regarded by many researchers (e.g. Rouse 1992; Newsom 2006) as a minor economic plant resource for the pre-Colonial cultures of the archipelagic and southern areas of the circum-Caribbean region, at least until a few centuries before the European irruption to the Americas. Macrobotanical remains of this plant have been recovered in archaeological contexts of extraordinary organic preservation along the northern regions of Central America. Some of those findings, along the periphery of the ascribed centre of maize domestication in Mesoamerica (the Balsas River Valley in south-western Mexico), were dated close to 4000 BC in Mexico (Piperno and Flannery 2001). Pollen grain is also frequently used to



Figure 1 Selected early archaeological sites and/or natural places in the circum-Caribbean (and beyond) mentioned in the text in which microbotanical remains have been studied.

establish the presence and variable stages of domestication of maize in the Neotropics. The oldest dates of domestic maize pollen lie between ca. 5500 BC in the area of Xihuatoxtla, Guerrero (Piperno *et al.* 2009) and 5200 BC (Pohl *et al.* 2007; Pope *et al.* 2001) at San Andrés, Tabasco, this last one accompanied by the presence of domestic manioc (*Manihot esculenta*) pollen (Figure 1).

Older pollen dates from its wild Zea correlate (Z. mays ssp. parviglumis and other "teosintles") dated back to ca. 7000 BC in the region of initial domestication of maize along the deciduous forests of Guerrero, Mexico (Piperno et al. 2009). So far the oldest microbotanical remains of domestic maize and other important economic plants (e.g. squash or *Cucurbita* sp.) were recently published by Piperno et al. (2009) showing secure identifications of starch grains and phytoliths recovered from stone grinding tools and sediments of the Xihuatoxtla rock shelter (Balsas River Valley region, Guerrero). These microbotanical remains were reliably associated to fine dated contexts starting at 7000 BC, i.e. between 1500 and 2500 years earlier than estimated with pollen grains or macrobotanical remains hitherto studied in that broad region. In fact, these new dates, directly linked with the initial domestication of maize, match the chronological estimates suggested by genetic studies developed during the last decade (Doebley 2004; Matsuoka et al. 2002).

Considering the sample of data and sites present in table 1, it is established here that the region of the Yucatán Peninsula and its immediate continental surroundings – i.e. a region traditionally regarded as one of the areas from which some human groups moved into the far west of the Antilles ca. 4000 BC (*sensu* Rouse 1992)– were an active territory

- -	Country	Site/place name	Main plants identified	Botan. material	Approximate range of dates (calibrated)	Source
	Mexico	Xihuatoxtla	Zea mays, Cucurbita sp.,	Starch, phytolith	7000BC and later	Piperno <i>et al.</i> 2009
	Mexico	Veracruz core	Zea mays	Pollen	2900BC and later	Sluyter and Dominguez 200
	Mexico	San Andrés, Tabasco core	Zea mays, Manihot esculenta	Pollen, phytoliths	5200BC and later	Pope <i>et al.</i> 2001
	Mexico	Guilá Naquitz	Zea mays, Phaseolus sp.	Macroremains	4300BC and later	Piperno and Flannery 2001
	Honduras	Aguada Petapilla core	Zea mays	Pollen	2700BC and later	Webster <i>et al.</i> 2005
	El Salvador	Laguna Verde core	Zea mays and other Zea species	Pollen	2440BC and later	Dull 2006
	El Salvador	El Carmen	Zea mays	Macroremains	1400BC	Dull 2006
	Belize	Cob Swamp core	Zea mays	Pollen	2600BC and later	Pohl <i>et al.</i> 1996
	Costa Rica	Laguna Martínez core	Zea mays	Pollen	3550BC	Horn 2006
	Panamá	Trapiche	Zea mays, Maranta arundinacea, Dioscorea sp.	Starch	3000-2100BC	Dickau <i>et al.</i> 2007
	Panamá	Casita de Piedra	<u>a)</u> Maranta arundinacea <u>b)</u> Manihot esculenta, Dioscorea sp., Zamia sp., Fahaceae	a) Starch b) Starch	a) 5400BC b) 4800-4300BC	Dickau <i>et al.</i> 2007
			<u>o</u> Zea mays, Zamia sp., Dioscorea sp., Calathea sp., Manihot esculenta, Fabaceae	c) Starch	c) 2200-1600BC	
	Panamá	Hornito	Zea mays, Zamia sp.	Starch	5600-4500BC	Dickau <i>et al.</i> 2007
	Panamá	Cueva de los Santanas	Zea mays	Phytolith	5000BC	Piperno and Pearsall 1998
	Panamá	La Yeguada core	Zea mays	Pollen and phytolith	5000-4500BC	Piperno and Pearsall 1998
	Panamá	Aguadulce	<u>a)</u> Calathea allouia, Maranta arundinacea, Lagenaria sp., and cf. Curuchita	a) Phytolith	a) before 5500BC	Piperno and Holst 1998
			b) Zea mays <u>c)</u> Manihot esculenta, Maranta arundinacea, Fabaceae, <u>c)</u> <u>contractoresculenta</u> , <u>contractorescule</u>	b) Phytolith c) Starch	b) ca.5000BC c) ca.4000BC and later	
			Dioscorea trinda and wild Dioscorea d) Zea mays, Marantaceae	d) Phytolith	d) ca.4000BC and later	
	Panamá	La Mula	Zea mays, Dioscorea sp., Calathea sp.	Starch	1300BC	Piperno and Holst 1998
	Panamá	Monagrillo	Zea mays	Starch	3000BC and later	Piperno and Holst 1998
	Panamá	Ladrones	Zea mays, Dioscorea sp.	Starch	5900BC and later	Dickau <i>et al.</i> 2007

# in Fig. 1	Country	Site/place name	Main plants identified	Botan. material	Approximate range of dates (calibrated)	Source
19.	Ecuador	Loma Alta	<u>a)</u> Zea mays, Maranta arundinacea <u>b</u>) Capsicum sp., Manihot esculenta, Canavalia sp.	a) Starch b) Starch	a) 4200BC and later b) 3300BC and later	Zarrillo <i>et al.</i> 2008
20.	Ecuador	Real Alto	a) Zea mays, Manihot esculenta, Maranta arundinacea, Canna sp. b) Zea mays, Manihot esculenta, Calathea allouia	a) Starch b) Phytolith	a) 2800BC and later for both microbotanical remains	Pearsall <i>et al.</i> 2004
21.	Colombia	Peña Roja	Calathea allouia, Cucurbita sp., Arecaceae	Phytolith	7300BC and later	Piperno and Pearsall 1998
22.	Colombia	Jazmin, Guayabito and	a) Zea mays, Xanthosoma sp., Dioscorea sp., b) Manaitant and	a) Pollen	a) 7000BC and later	Gnecco and Aceituno 2004
		callipoalegie sites	<u>u</u> Maninot escuenta	b) Pollen	b) 2000BC	
23.	French Guiana	Chemin Saint Louis	Zea mays, Ipomoea batatas, wild and domestic Phaseolus, Maranta cf. arundinacea, cf. Calathea sp., Manihot esculenta, Arecaceae, Capsicum (domestic), cf. Sagittaria sp.	Starch	2460 BC and later	Pagán Jiménez unpub. data
24.	United States	Fort Center	Zea mays	Pollen	500BC	Sears 1982
25.	Puerto Rico	Maruca	Zea mays, Fabaceae, Manihot esculenta, Maranta arun- dinacea, Canavalia sp., Ipomoea batatas, Xanthosoma sp. Dioscorea (wild), Zamia pumila, Aracaceae	Starch	2800BC and later	Pagán Jiménez 2009
26.	Puerto Rico	Puerto Ferro	Zea mays, Fabaceae, Manihot esculenta, Ipomoea batatas, Canna sp., Zamia portoricencis, Sagittaria sp.	Starch	2100BC and later	Pagán Jiménez 2009
27.	Puerto Rico	Maisabel pond	Zea mays, Canna sp., Ipomoea sp.	Phytolith and Pollen	790 BC and after	Newsom and Pearsall 2003
28.	Cuba	Canímar Abajo	Zea mays, Fabaceae (wild and domest), Ipomoea batatas, Zamia (various sp.)	Starch	3000BC and later	Rodríguez Suárez (in Paz 2006)
29.	Saba	Plum Piece	Prestoea montana, cf. Maranta arundinacea	Starch, raphide	1870BC and later	Nieuwenhuis 2008

Table 1 Some early sites and selected economic plants identified by its microbotanical remains in the circum-Caribbean and adjacent inland continental areas. of circulation for major economic plants such as maize, squash, manioc, and possibly other high-yield plants like the common bean (*Phaseolus* sp.), from at least 7000 BC (Table 1).

On the southern part of Central America different lines of archaeobotanical evidence, mainly rooted on starch grains and phytolith data, but also on pollen grains, have grown for the last two decades in Costa Rica (e.g., Horn 2006) and Panama (e.g., Dickau et al. 2007). Early and secure maize pollen has been found and dated for Laguna Martínez in Costa Rica at around 3550 BC (Horn 2006). Similarly, maize pollen and phytoliths have been identified in La Yeguada (Panama), in contexts dated between 5000 and 4500 BC, together with the constant discovery of starch grains and phytoliths of maize, arrowroot (Maranta arundinacea), manioc, lerén/calatea (Calthea sp.), cultivated and wild yams (Dioscorea sp., D. trifida), marunguey or guáyiga (Zamia sp.) and beans (Fabaceae, Phaseolus sp.), among others plants. Similar plant assemblages have also been reported for a large number of ancient archaeological and natural contexts dated between 5900 to 1300 BC (Dickau et al. 2007; Piperno and Holst 1998). Microbotanical data confidently demonstrate that groups inhabiting the Central American region participated in the processes of domestication and early dispersals of the plants identified, long before the accepted estimations. According to Dickau et al. (2007), the processes of crop dispersal in this region occurred in the context of diffusion and/or plant exchange of germplasm and not by the movement of agricultural populations (migration) from other culture areas. It should be stressed here that diffusion can not be understood in the classic sense (e.g. sensu Steward 1963), but as a set of multivectorial processes based on social interactions and probably non-hierarchical exchanges of goods, ideas and technologies (see Rodríguez Ramos and Pagán Jiménez 2006). In this scenario, it has been argued that the Isthmus of Panama served as a land bridge between North and South America for the early dispersion of many domestic resources (Dickau et al. 2007:3651), and also for technologies such as metallurgy, and possibly the early development of ceramics, which certainly irradiated to all directions including the Antilles.

The archaeobotanical and palaeoecological information revealed for different chronocultural contexts all over Central America clearly encapsulates the whole region in a phytocultural setting in which the initial domestication of some of the most important economic plants of the Americas (e.g. maize, beans, chilli pepper, and squash) occurred. Even though this broad region developed extremely diverse societies and cultures which evolved at different rhythms, the movement of domestic and other economically important plant resources was a constant process throughout the territory from ca. 7000 BC. All the 'culture areas' and 'sub-areas' encompassed within Central America actively participated in the movement and exchange, not only of plant resources, but also of basic ethnobotanical practices. This exchange permitted their adoption, adaptation and use among the different systems of cultural values of the whole region.

Northern South America

In the South American continent, archaeobotanical and paleoecological research have also revealed a set of important information. Outside the circum-Caribbean geographic mainland –that is, in the high and temperate regions of South America–, findings of desiccated or charred maize, manioc and other economically valuable plants have been frequent for decades. Countless macrobotanical remains of maize have been reported for the Atacama Desert, between Chile and Peru, as well as for Ecuador and Argentina where some of them were directly dated between 1500 and 500 BC (uncalibrated) (Blake 2006). Similarly, macro- and microbotanical remains of seed and tuberous plants of great relevance to the Neotropics like manioc, common bean, achira (*Canna* sp.) and wild yams, were known and used mainly in South America from the fifth millennium BC or even before. In the Casma Valley, Peru, hundreds of desiccated fragments of manioc have been reported in contexts dated to as early as 1800 BC (Ugent *et al.* 1986). This suggests that manioc was being used and manipulated long before that date given that its centre of origin was probably located in the tropical lowlands of north-eastern South America and/or southern Brazil (Olsen and Schaal 2006; Piperno 2006). Macrobotanical remains of sweet potato, recovered in Tres Ventanas Cave at the Chilca Canyon (Engel 1973), and in the Casma Valley (Ugent *et al.* 1981), have been registered in association with pre-Ceramic contexts dated between 8000 and 6000 BC and between 2250 and 1775 BC, respectively.

In Ecuador, the early (4600 BC onwards) and consistent presence of microbotanical remains (starches and phytoliths) at Real Alto and Loma Alta attest that the early processes of dispersion and use of important economic plants such as maize, arrowroot, jack bean (*Canavalia* sp.), manioc, squash, common bean, palm (Aracaceae) and chilli pepper (*Capsicum* sp.) were highly complex, regionally extensive and chronologically deep (Pearsall *et al.* 2004; Zarrillo *et al.* 2008).

For the immediate periphery of the South American circum-Caribbean, specifically the inland region of Colombia, Castillo and Aceituno (2000; see also Gnecco and Aceituno 2004) have proposed a coherent model of human occupations for the early and middle Holocene in the Porce River Valley, an hydrologic feature located in the central mountain range of the Colombian Andes. Although the human presence in this area could have begun around 7000 BC or earlier, paleofloristic data (mainly pollen) indicates little diversity of the forests and absence of colonizing plant organisms. This suggests minimum alterations due to foraging, which could go unnoticed in palynological columns. Later, between 5550 and 4000 BC, remarkable changes in the flora of some of the studied sites were documented in association with a set of cultural manifestations (e.g. changes in subsistence patterns and rituals) that reflect deeper knowledge regarding the natural elements of this region and deliberate management of the forests. Plants of the Araceae and Melastomataceae families, regarded as colonizing organisms of disturbed forests, are recurrent in this phase which is also characterized by the emergence of lithic artefacts such as edge-ground cobbles. In later pre-Ceramic phases of the same region (ca. 4550-3000 BC), Castillo and Aceituno (2000) documented for the first time in the palynological record the presence of domesticated plants such as maize and manioc, as well as other potential crops of the Cucurbita, Smilax and Amaranthus genus. Given the absence of these plants in the older zones of the palynological profiles, the researchers suggested that those plants constitute a complex of exotic domesticated species which were integrated into the previously established cultivation systems. Moreover, analyses of phytoliths, starch grains and parenchymatous tissues carried out on stone axes and milling stone bases of this phase, revealed the processing and use of plants from the Aracaceae, Gramineae families and of the genus Scheelea and Manihot.

Research in the Araracuara region of the Colombian Amazon have provided interesting accounts of the cultivation of some crops and useful plants (Oliver 2001). Between 7300 and 6150 BC, the people who inhabited the pre-Ceramic site Peña Roja exploited palm seeds of the *Onoecarpus, Mauritia, Maximiliana* and *Astrocaryum* genus and other edible fruits. These remains were recovered along with flaked and ground stone tools. Phytolith studies carried out by Dolores Piperno on this site (Piperno and Pearsall 1998) also re-

vealed the processing of important plants species such as lerén (*Calathea allouia*), güiro (*Lagenaria* sp.) and squash (Oliver 2001). Slash and burn practices have also been identified in the same region earlier than 2750 BC. A sediment core extracted from a locality associated to the Abejas archaeological site provided palynological data showing the presence and cultivation of maize and manioc spatially and temporarily linked to the Tubaboniba pre-Ceramic tradition (Piperno and Pearsall 1998). It should be noted that the earliest evidence of maize within the sediment core was recovered 35 cm below the level dated at 2750 BC, thus indicating that the antiquity of this plant was older than that documented for the area. In this context and according to the pollen record showing anthropogenic forest disturbances, agricultural production based on slash and burn techniques was intense.

In the Cauca Valley of western Colombia various sediment core sequences have been studied. One of them, known as Hacienda Lusitania (Monsalve 1985), identified the presence of maize pollen 15 cm below one of the sections of the core that was dated to 3200 BC. Once maize pollen appeared in these sediments, its occurrence increased, as did other specimens of the *Compositae* family, while tree abundance decreased. Another study of core sediments carried out in the same river valley (Bray *et al.* 1987), confirmed the early presence of maize pollen in a soil layer dated to 4730 BC.

The only early archaeological site located in the Caribbean region of Colombia and where archaeobotanical information has been released is San Jacinto 1 (Oyuela and Bonzani 2005). This site, apparently used for special purpose activities, was intermittently inhabited by hunter-gatherers between 5000 and 3900 BC and provided macro and microbotanical remains (seeds, charred wood, phytoliths) of the genus *Cyperus* (junquillo), other grasses, legumes, arrowroot and fruits ascribed to the dry season of the area. The presence of maize or other economic plants such as manioc was not documented although inferences on their potential use at the site have been proposed considering the great quantity of *metates* and other ground stone tools recovered.

Surprisingly, only sparse archaeobotanical data directly associated to the early management and use of economic plants has been acquired in the north-eastern region of South America. As already mentioned, this territory has been interpreted by many researchers (see e.g., Rouse 1992; Wilson 2007) as the main epicentre for the large human migrations who settled the Antilles from its earliest periods (ca. 5500 BC) and during the so-called Early Ceramic Age (ca. 500 BC and later). Studies in the Parmana region of Venezuela have shown detailed cultural sequences where changes in the demographic and settlement patterns arose by ca. 2100 BC (Roosevelt 1980). Between that date and 1600 BC, the inhabitants of the La Gruta phase seem to have maintained a low and stable population density, which Roosevelt (1980) linked to the cultivation of manioc combined with a gathering-based subsistence system. Subsequently, according to Roosevelt, near 800 BC the population increased rapidly in the region. However, this growth process stabilized when the maximum level of population density was reached. During the next Corozal phase, which began around 800 BC and extended until AD 100, maize was apparently introduced and established as the main plant item of an intensive agricultural production system. Maize macrobotanical remains associated to earlier occupations of the Corozal phase (i.e., Corozal I) were scarce, but still occurred in the Corozal and Parmana sites. In addition, the production, use and consumption of maize is suggested by the presence of *metates* in archaeological sites ascribed to the Corozal II occupations (ca. 400 BC-AD 100). Conversely, the chronology and some of the interpretations formulated by Roosevelt (1980) concerning these issues were questioned by Sanoja and Vargas (1983), who suggested that the cultural development of the Corozal II occupations at Parmana, Corozal and Ronquín sites took place later, at a point close to AD 360. These researchers proposed that the presence of maize in the Corozal II sites was part of a process in which a new mixed subsistence system combined the production of seed (maize) and tuberous (manioc) plants to take advantage of both sandy soils of low productivity as well as high-yield clayey soils.

Other later archaeological contexts from the Pozo Azul Norte-1 site (ca. AD 300-900), were recently studied by Linda Perry (2002, 2004) in the middle Orinoco river valley of Venezuela. Among the interesting results of her starch grain research program, Perry documented plants such as maize, yam, arrowroot, guapo (*Myrosoma* sp.), ginger (*Zingibeaceae*) and the complete absence of manioc in the many studied grater board microflakes which have been consistently ascribed to the preparation of cassava (manioc) bread in circum-Caribbean archaeology (see Rodríguez Ramos 2010).

Moving out to north-eastern Venezuela, a sequence of early human activities that began ca. 4750 BC has been proposed along the coastline of Paria. According to Sanoja (1997), cultural manifestations associated by him with hunter-gatherer-fisher groups arose in the area from those times. The first indirect evidence correlated to plant production is the presence of axes, hoes and conical pestles in domestic contexts of semi-permanent villages (Guayana and Remigio sites; Sanoja 1997) dated between 3600 and 2650 BC. Later archaeological sites with ceramic technology (e.g., Las Varas: ca. 2650 BC) have been used to propose the early management and use of plants based on morphological and use-wear patterns observed in certain lithic artefacts. Unfortunately, there are no published archaeobotanical data for this region and its various early human occupations. This situation has only left possible the proposal of conjectures on the development of plant production systems (see Sanoja 1997:163).

In the Guianese area, other pre-Ceramic and Early Ceramic sequences such as Barambina Mound (Alaka phase: 3510 BC), Hossororo Creek (1600 BC) and the Mabaruma phase (1600 BC) have revealed indirect information about the use of economic plants (Sanoja 1997:164). In some cases only lithic tools have been associated to plant processing while others artefacts, such as some ceramic bowls, have been interpreted as cooking pots possibly used for the confection of food plant recipes.

This year (2010) the author was contracted by Inrap (Institut National de Recherches Archéologiques Préventives) to conduct a microbotanical study (starch grains) on grinding stone tools, and ceramic pot and clay griddle fragments from the Chemin Saint-Louis archaeological site in French Guiana. This microbotanical study is the first of its type developed on an early site near the north-eastern coast of the South American continent, on the northern border of Amazonia. The site is characterized mainly as an Early Ceramic site with a minor and earlier Archaic component. A set of twenty ¹⁴C dates place the overall contexts between 3300 BC and AD 1200. The preliminary results of the analysis of fourteen artefacts distributed along contexts which ranges ca. 2460 BC to AD 410 revealed the processing of plant organs from palm, beans, maize, arrowroot, cocoyam, sweet potato, and possibly manioc and chilli pepper, among other unidentified species (Pagán Jiménez, unpub. data). An additional wild plant was tentatively identified as arrowhead (also known as swamp-potato) or *Sagittaria* sp.: a tuberous plant used in many regions of the American continents for medicine and for food.

The information outlined above was not intended to be exhaustive. The idea has been to provide a descriptive overview on the phytogeography of some economic plants which were important for the circum-Caribbean mainland, i.e., the geo-cultural entity that surround(ed) the Antillean arc of islands to the south and west. Having sketched this overview, a whole different span of interpretive possibilities can emerge regarding the early movement of people and plants to the Antilles from the continental masses surveyed above. These different possibilities must depart from the rigid visions still reflected in the recent literature (Wilson 2007), which persistently ascribe a single socio-cultural character (i.e., hunter-gatherer-fishers) to the humans who began to settle the Antilles circa 5500 BC (see also Rivera-Collazo, this volume).

'Insular' circum-Caribbean: early introduction and dispersals of economic plants and their phytocultural implications

Of all the archaeobotanical or paleoecological research carried out in the Antilles, only the pollen, phytoliths and starch grains have yielded illuminating results on the early introduction and use of domestic, wild plants and other crops (Newsom and Pearsall 2003; Pagán Jiménez *et al.* 2005; Siegel *et al.* 2005) that provided some of the main sources of carbohydrates and vegetable protein for all pre-Colonial periods. Among these microbotanical remains, starch grains have been so far the only secure plant residue recovered directly from firmly dated pre-Arawak ("Archaic") grinding/pounding lithic tools (Nieuwenhuis 2008; Pagán Jiménez 2009). Pollen and phytoliths, though still very limited, are important when integrated into the overall scenario exposed below.

Starch grain research has not been performed in the earliest pre-Arawak contexts of the Antilles so far. The most extensive study corresponds to analysis of lithic tools from two early pre-Arawak occupations in Puerto Rico, dating between ca. 2890 to 390 BC (Maruca and Puerto Ferro sites, Pagán Jiménez *et al.* 2005; Pagán Jiménez 2009). Following the pre-vailing explanation models (Rouse 1992), these sites can be easily framed within the same socio-cultural characterizations formulated for some of the earliest sites of the Antilles (e.g., Banwari Trace, St. John and Ortoire in Trinidad, or Canímar Abajo in Cuba), which date back to around 5500 BC. The archaeobotanical findings from Puerto Rico, located just in the middle of the Antillean arch, shakes considerably our preconceptions about the pre-Arawak cultures of the archipelago. Without disregarding the evident cultural diversity of the Antillean arc since the earliest human occupations, local and regional developments during the pre-Arawak occurred within an intra- and pan-Caribbean setting of dynamic interactions.

Recent archaeobotanical data gathered in Maruca and Puerto Ferro demonstrates that some of those people called "Archaic" managed and used exogenous domestic plants and crops and exploited native Antillean wild plants. This information, raised by the study of starch grains recovered from grinding/pounding lithic tools, identified domestic plants, such as maize and manioc, beans and other crops, including sweet potato and cocoyam. Wild plants were also processed with the studied tools: the underground stem of marunguey (*Zamia portorricensis*), rhizomes of achira (*Canna* sp.), tuberous root of a wild yam (*Dioscorea/Rajania* sp.) and the seeds of the corozo palm (*Acrocomia media*). The initial study was limited to only 6 lithic tools (Pagán Jiménez *et al.* 2005). Recently (Pagán Jiménez 2009), a substantial expansion of stone tool samples from each site (10 from Puerto Ferro and 16 from Maruca) confirmed our previously published information, extended the presence of the identified plants to the earlier chronological contexts of both sites and broadened the geographical spectrum of some of those plants. This is the case, for example, for the presence and intentional processing at both sites of the subterranean stems of marunguey (and now also *Zamia pumila*), of rhizomes of other wild plants in Puerto Ferro which had not been previously documented (arrowhead or *Sagittaria lancifolia*) and the identification of an important plant for the economic botany of the Neotropics: arrowroot.

The results generated so far establish for the first time in the Antilles, and with a great level of resolution, that the human groups who inhabited Maruca and Puerto Ferro, at least from ca. 2890 BC, had to be using one or more plant cultivation systems (e.g. home gardens and open plots) in addition to fishing, hunting of small mammals and harvesting wild plants and invertebrate fauna (Narganes Storde 1991, 2004). It is suggested, therefore, that in terms of plants, their subsistence system was mixed at both sites, in which the planting and harvesting of endogenous root and tuberous plants was interspersed with the planting and harvesting of exogenous fruit, seed and tuberous plants. The identification of exogenous domestic plants (maize, manioc and some types of bean), as well as other crops (sweet potato, cocoyam, yam, achira, etc.), suggests that the development of semi-sedentary life, which includes here the creation of home gardens and/or "small" agricultural plots, were in operation on or before ca. 2890 BC in Puerto Rico (for a deeper discussion see Pagán Jiménez et al. 2005). Microbotanical data, along with some macrobotanical remains recovered in Maruca (i.e. possibly corozo, tortugo [Sideroxylon sp.], sapodilla [Manilkara sp.], Malvaceae and unidentified tuber fragments; see Newsom and Pearsall 2003) offer additional support to the new socio-cultural scenario proposed elsewhere.

Interestingly, paleoecological studies carried out on the northern coast of Puerto Rico (Burney et al. 1994) indicated that between 3500 and 1800 BC a significant increase in paleo-fires (determined by charcoal particles) began near of the Laguna Tortuguero. The authors adjudicated those events to possible anthropogenic activities. Today, we know that the human groups who occupied for several periods the Angostura site in Barceloneta, Puerto Rico, were possibly exploiting resources in the area from around ca. 4900 BC, and settling Angostura with some redundancy between ca. 2400 and 1800 BC (see Rivera-Collazo, this volume). These and/or other related people could be the true architects of the changes observed in the paleo-fires sequences of the area due to the possible development of slash and burn agricultural systems (Rodríguez Ramos and Pagán Jiménez 2006). A similar situation has been documented and interpreted for the north of Vieques island (Sara et al. 2003), when charcoal particles increased drastically by around 840 BC. Also, the recovery of macrobotanical remains belonging to arboreal taxa (fruits and vegetables) and some grasses (colonizing organisms such as *Portulaca* sp.) in other previously studied pre-Arawak sites of the Antilles (see Newsom and Wing 2004), suggests that the development of arboriculture/home gardens, or the creation of agricultural fields, could be possible with the preparation (slash and burn) of the field which probably stimulated the appearance of colonizing plants (Newsom 1993; Newsom and Pearsall 2003; Pagán Jiménez 2002, 2007). The archaeobotanical data obtained from Maruca and Puerto Ferro also underpins some indirect results previously provided by other researchers which identified maize pollen and phytoliths in contexts dated to ca. 790 and 1450 BC in northern Puerto Rico and the Dominican Republic, respectively (Newsom and Pearsall 2003; Sanoja 1989; Siegel et al. 2005).

The overall data summarized above suggests the structural complexity characterising the pre-Arawak people in view of the large amount of information that they had to build, organize and maintain for processing and securing the production of different plants (e.g., knowledge of soils and water for each species, time for planting and harvesting of crops, type of treatment for the elimination of toxic elements); for collecting molluscs, crustaceans and wild plants that were accessible in different seasonal periods; and for developing fishing practices to procure broad-spectrum species in marine and riparian environments. This level of expertise probably could be obtained, accumulated and managed if, among other things, a cosmological order *ad hoc* with the Antillean physical and natural world existed and was, perhaps, attended by a valued (special) individual or a group of them.

Based on the information compiled herein, the inhabitants of Maruca and Puerto Ferro, rather than representing a new and exogenous human mobilization to the Antilles, were descendants of immigrants who arrived centuries or perhaps thousands of years before, who mastered the production of manioc, maize, sweet potato and beans and combined it with other consumption practices rooted in the Antillean tradition of procurement, maintenance and consumption of marunguey. The vast accumulation of knowledge that the inhabitants of Maruca and Puerto Ferro handled regarding their natural environments allowed them to operate a broad-spectrum economy which permitted the configuration of a varied and highly nutritive menu consisting in faunal items extracted from nature, combined with an important set of local and exogenous food plants. There is not a clear hierarchical distinction between the produced food plants and those gathered from the nature. However, it should be noted here the remarkable correlation of plants such as maize, manioc, bean, sweet potato and marunguey in the studied sites (see Pagán Jiménez *et al.* 2005) having been plants that we know were truly relevant for later Antillean agricultural pre-Colonial economies.

Although the archaeobotanical data collected up to now is certainly not extensive enough to imply that plant derivates were the food staple of the inhabitants of Puerto Ferro and Maruca¹, it is reasonable to conclude that the systematic production of some of them (with different intensities through time) was a fact from ca. 2890 BC and perhaps earlier. Previous interpretations could apply to Puerto Rico and beyond if a particular combination of artefacts is recovered in other pre-Arawak sites, including (but not restricted to) edge-ground cobbles, conical pestles, irregular *manos* and milling stone/coral bases. In fact, and reinforcing those previous propositions, recent starch grain analyses on lithic *manos* and edge-ground cobbles from Canímar Abajo (Cuba) –one of the earliest Antillean sites dating to ca. 5650 BC– identified maize, sweet potato, beans (wild and domestic) and several species of marunguey (*Zamia* sp.), and other useful plants on contexts dated between 1266-816 BC and earlier (see Martínez-López *et al.* 2009; Paz 2006).

As already mentioned, the archaeobotanical information gathered on some pre-Arawak sites of the Greater Antilles questions the traditional explanatory models from our region. These models place all the cultural manifestations prior to the agro-ceramic Saladoid expansion in an extremely simple and passive level of socio-cultural development (see e.g., Fitzpatrick and Keegan 2008; Wilson 2007). Several lines of reasoning shape these models. The first one emerges from the idea that the pre-Arawak human groups were usually organized into non-agricultural and family-based nomadic bands, which had a social structure

¹ Bone chemistry-isotope studies should be performed to determine these aspects (see Laffoon and de Vos, this volume).

similar to that described for continental Archaic people (see Rouse 1992; Veloz Maggiolo and Pantel 1988; Veloz Maggiolo and Vega 1987). An examination of the current state of knowledge concerning the so-called Paleoindian, especially during the late Pleistocene and the early and middle Holocene (see Dillehay 2008; Scott Raymond 2008), reveals that the argument is built on an assumption of family-based bands organized around the exploitation of different seasonally available resources. Therefore, the establishment of the various types of early human settlements in continental America was seen as evidence of a certain degree of rational/logistic mobility based on the availability of different resources. A good example of this is the case of San Jacinto 1, an archaeological site where sufficient and different sources of data supported this type of explanatory models (Oyuela and Bonzani 2005). For the Antillean pre-Arawak horizon, it had been easy to consider that settlements would also respond to this kind of rational/logistic mobility (Newsom and Wing 2004; Rouse 1992; Veloz Maggiolo 1991, 1992), although more dependance on the availability of coastal resources.

Another line of reasoning in support of the prevailing explanatory models of the Antillean archaeology is rooted in the archaeological research of some of the "Archaic" and *protoagrícola* sites of the region. These research programs initially built and then reinforced in the academic community the well-grounded perception that pre-Arawak groups correspond to a development level called the 'gatherer way of life' (or "modo de vida recolector" *sensu* Veloz Maggiolo 1992; Veloz Maggiolo and Pantel 1988; Veloz Maggiolo and Vega 1982, 1987), 'appropriator' (e.g., Guarch Delmonte 1990) or simply hunter-gatherer-fisher (Callaghan 2003; Curet 2003; Goodwin 1979; Rouse 1992; Tabío and Rey 1985). Thus, the factual evidence recovered in many Antillean "Archaic" sites, including stone, shell and bone tools together with faunal food remains, have been seen as data supporting such a level of socio-cultural development. This panorama, combined with the 'complete absence' of visible macrobotanical (domestic) plant remains and a perceived lack of ceramic technology (Rodríguez Ramos *et al.* 2008), has been decisive to place these human groups at the lowest and "primitive" position in the pre-Colonial scale of socio-cultural evolution (see Rivera-Collazo, this volume; Rodríguez Ramos 2008).

Therefore, the information produced for Maruca and Puerto Ferro, together with other recent archaeobotanical data recovered over the last 8 years in Puerto Rico and other Antillean islands have become serious indicators that should encourage new thinking about the pre-Colonial cultures. In synthesis, at least some pre-Arawak societies interpreted for more than 80 years as hunter-gatherer-fishers and who supposedly maintained a nomadic way of life, are now interpreted as societies with notable sedentism that were producing domestic food plants and other crops (possibly in a "low-level food production" fashion, sensu Smith 2001), and managing wild plant resources for food. Indeed, some of the exogenous domestic plants and food crops (maize, manioc, sweet potato) that were thought to be brought to the Antilles by the first strictly agro-ceramic settlers of continental origin (i.e., the Saladoids and Huecoids, ca. 500 BC, Rouse 1992), are now chronologically situated nearly two millennia prior to the traditional conception widely accepted. It should be highlighted that an important plant assemblage associated with some culinary traditions of the Isthmo-Colombian region (or ICr), has been also identified in Puerto Rico and Vieques and directly related to artefact-types (e.g., edge ground-cobbles and milling stone bases) that are common to both geographical regions (Rodríguez Ramos 2005, 2010). Accordingly, pan-Caribbean interactions have been revealed between the Antilles and the

ICr, implying the movement of people and/or plants through the chain of isles in earlier dates than that known for Maruca and Puerto Ferro. Conversely, as has been suggested by these and other data (Rodríguez Ramos 2010), the movement of people and plants between those two areas (i.e., the ICr and Puerto Rico) could have occurred through direct marine voyages across the open sea (Rodríguez Ramos and Pagán Jiménez 2006).

Later phytocultural dynamics in the Antilles: a surface view from Puerto Rico and its pan-Caribbean implications

After more than 5000 years of pre-Arawak occupations in the Antilles, various new cultural manifestations which brought typically continental ceramic traditions and culinary practices entered the island region from various areas of north and north-western South America. In this context, the starch grain analysis approach applied to culturally exogenous and endogenous agro-ceramic artefact assemblages -like those of the Huecoid, Saladoid and Ostionoid people from Puerto Rico and Cuba- has begun to demystify some rigid pre-understandings regarding tool function and the plants which were supposedly processed or cooked with them (table 2). This is the case of the burén or clay griddle that for more than 70 years has been associated with the cooking or handling of manioc (cassava) bread. Now, this artefact is also directly related with a broader spectrum of plants (e.g., maize, bean, arrowroot, sweet potato and marunguey, among others) where manioc has not yet been identified (see Pagán Jiménez 2009). Similar data began to emerge from a small sample of studied microflakes, which were interpreted as grater board teeth and have been historically considered part of the toolkit to process the manioc tuberous roots. Now these tiny artefacts have revealed that many of the plants identified in the *burenes* (maize, arrowroot, marunguey) were also processed with them (Pagán Jiménez 2006), but not manioc as has also been shown for pre-Colonial Bahamas (Berman and Pearsall 2000, 2008) and Venezuela (Perry 2002, 2004).

Starch grain analyses have also contributed to interpretations of the cultural biography of some economically important plants such as maize. This versatile plant has been consistently interpreted (Newsom 2006; Newsom and Wing 2004) as a high status food resource consumed exclusively by the late Ostionoid indigenous elite of Hispaniola and also as a plant of minor importance for the overall pre-Colonial diet of the islands in any period. I have established elsewhere (Pagán Jiménez 2007, 2009, 2010) that the ways of processing and consumption of its seeds go beyond the allegedly restrictive and sometimes simple uses that still continue to be attributed to this botanical resource (see e.g. Newsom 2006, 2008). According to Newsom, the kernels of this plant were consumed green or boiled by the indigenous elite. However, recent starch grain research in the Bahamas (Berman and Pearsall 2008), Cuba (Rodríguez Suárez and Pagán Jiménez 2008) and Puerto Rico (see e.g., Pagán Jiménez 2009), has firmly demonstrated the presence of maize starches in grinding/pounding/grating stone tools and clay griddles of fourteen archaeological sites and contexts, ranging from domestic/communal to ritual/magic-religious spaces and artefacts of all the periods defined for the northern Antilles, which contrast heavily with those previous restrictive assumptions assigned to this plant (see also Pagán Jiménez 2007). Maybe maize was never a

Next page: Table 2 Antillean archaeological sites where starch grain studies has been formally performed or published. * Calibrations were made using Calib Radiocarbon Calibration Program (Rev 5.0.1). Calibration data sets: intcal04.14c (Reimer et al. 2004) and marine04.14c (Hughen et al. 2004).

Site name	Region/Country	Chronological ranges with 20 calibrations BC-AD* (number of samples considered in parenthesis)	Cultural ascription	Physiographic elements and distance to shore line (in meters)	No. of artefacts studied (artefacts with starch content in parenthesis)	Reference
1. Maruca	Ponce, Puerto Rico	2870 – 630BC (9)	Archaic	Coastal plain ~1,500 m	20 (20)	Pagán Jiménez 2009; Pagán Jiménez <i>et al.</i> 2005
2. Puerto Ferro	Vieques, Puerto Rico	2260 – 340BC (10)	Archaic	Coastal slope ~1,200 m	12 (12)	Pagán Jiménez 2009; Pagán Jiménez <i>et al.</i> 2005
3. Plum Piece	Saba Island (Lesser Antilles)	1870 – 1520BC (3)	Archaic	Upland (mountain) ~772 m	11 (5)	Nieuwenhuis 2008
4. Punta Candelero	Humacao, Puerto Rico	340BC – AD220 (2)	Huecoid	Coastal plain ~120 m	18 (15)	Pagán Jiménez 2007
5.Sorcé/La Hueca (depósito Z)	Vieques, Puerto Rico	160BC – AD540 (11)	Huecoid	Alluvial plain ~330 m	40 (33)	Pagán Jiménez 2007
6. Río Tanamá 2 (AR-39)	Arecibo, Puerto Rico	AD350 - 890 (6)	Late Saladoid (Cuevas)-Early Ostiones (Santa Elena)	Alluvial plain ~5,950 m	6 (4)	Pagán Jiménez 2008a
7. Three Dog	San Salvador, Bahamas	AD600-1160 (12)	Ostionoid (Early Lucayan)	Plain over sand dune ~30 m	28 (14)	Berman and Pearsall 2000, 2008
8. Punta Guayanés (King's Helmet area)	Yabucoa, Puerto Rico	AD640-880 (2)	Late Saladoid (Cuevas)	Promontory over coastal hill ~50-100 m	5 (4)	Pagán Jiménez 2008b
9. Punta Candelero	Humacao, Puerto Rico	AD660 - 1020 (2)	Late Saladoid (Cuevas)	Coastal plain ~120 m	13 (12)	Pagán Jiménez 2006
10. Cueva de los Muertos (SR-1)	Utuado, Puerto Rico	AD680 – 1190 (2)	Ostionoid (modified Ostiones or proto-taino)	Karst hill ~17,400 m	3 (3)	Pagán Jiménez and Oliver 2008
11. Macambo II	Guantánamo, Cuba	AD1150 – 1490 (1)	Ostionoid (late Taíno)	Coastal plain > 100 m	1 (1)	Rodríguez Suárez and Pagán Jiménez 2008
12. Ceiba 11	Ceiba, Puerto Rico	AD1150-1270 (2)	Early and late Ostiones (Santa Elena and Esperanza)	Coastal hill (top) ~750 m	5 (5)	Pagán Jiménez 2010
13. Vega Nelo Vargas (Utu-27)	Utuado, Puerto Rico	AD1280 – 1430 (4)	Ostionoid (late Ostiones or Capá- taíno)	Karst piedmont/small valley ~19,390 m	4 (4)	Pagán Jiménez and Oliver 2008
14. Laguna de Limones	Guantánamo, Cuba	AD1200 – 1600 (only <u>relative</u> chronology)	Ostionoid (late Taíno)	Coastal plain/terrace ~7,200 m	4 (4)	Rodríguez Suárez and Pagán Jiménez 2008
15. Ceiba 33	Ceiba, Puerto Rico	AD1410-1470 (1)	Ostionoid (late Ostiones or Esperanza)	Terrace on a Coastal hill ~1250m	3 (3)	Pagán Jiménez 2010

food staple in the region at any point in time, although its variable uses defined up to now (Pagán Jiménez 2010) were more generalized than those interpreted before.

Conversely, another exotic plant has been targeted as the most important source of carbohydrates for many pre-Colonial societies in the Antilles: manioc. This food plant, to date, has been poorly documented in the archaeological contexts studied. According to some chroniclers (Colón 1992; Las Casas 1909; Fernández de Oviedo 1851), during the initial Indigenous-European contact period, manioc was the staple crop of those indigenous societies in some of the islands like Puerto Rico, Cuba, Hispaniola, Jamaica and Bahamas. However, there is also clear information regarding the importance of other plants such as marunguey (or guáyiga) which for chroniclers like Las Casas (1909) were even more important than manioc or sweet potato in the region of Higüey of eastern Hispaniola (see Pagán Jiménez 2007; Pagán Jiménez and Oliver 2008; Veloz Maggiolo 1992).

Considering this scenario it would be expected -at least for those later archaeological sites of the Greater Antilles (e.g., early and late Ostionoid sites of Puerto Rico and Cuba) in which 18 lithic and ceramic artefacts have been studied for starch content- that manioc were ubiquitously present if this plant was so important for the cultural spectrum generically encapsulated under the Taíno. On the contrary, starch grain studies conducted so far evidence a different picture; namely that the knowledge and use of many of the plants previously documented remained important and possibly more so than manioc (see Pagán Jiménez and Oliver 2008; Rodríguez Suárez and Pagán Jiménez 2008). Archaeobotanical studies conducted in these late archaeological sites registered the use of plants such as an

Vernacular name (<i>taxa</i>)	Period I ^a	Period II ^b	Period II ^c	Period II ^d	Period III ^e	Period IV ^r	Ubiquity of plants through periods (%)	Remains recovered (referentes)
Tubers (and rhizomes, roots and tuberous stems)								
\otimes Batata or Sweet potato (<i>Ipomoea batatas</i>)	Х	Х		х	Х	Х	83.3	Starch ¹ ; charred fragments ³
⊗ Yuca or Manioc (<i>Manihot esculenta</i> Cranz)	Х	Х			Х	Х	66.6	Starch ¹ ; charred fragments ³
 Name silvestre(Dioscorea/Rajania) 	Х	х			х	Х	66.6	Starch ¹
 Ñame mapuey (Dioscorea trifida) 		Х					16.6	Starch ¹
 Name dunguey (Dioscorea altissima) 		Х					16.6	Starch ¹
⊗ Achira or Gruya (Canna indica)	х			х		Х	50	Starch ¹
\otimes Yautía Blanca (Xanthosoma sagittifolium)	х	х			Х	Х	66.6	Starch ¹
⊗ Yautía de palma (<i>Xanthosoma undipes</i>)					х	Х	33.3	Starch ¹
◆ Marunguey (Zamia portoricensis)	х	х					33.3	Starch ¹
 Marunguey (Zamia amblyphyllidia) 				х	Х	Х	50	Starch ¹
 Marunguey, Guáyiga (Zamia pumila) 	Х	Х		х			50	Starch ^{1, 2} ; desiccated leaves ⁵
◆ Yuquilla, Arrowroot (Maranta arundinacea)	х	х		х	х	х	83.3	Starch ¹
\otimes Lerén (Calathea allouia)		х			х	х	50	Starch ¹
• Flecha de agua (Sagittaria lancifolia)	Х						16.6	Starch ²
◆ Calatea (Calathea cf. veitchiana)		х				х	33.3	Starch ¹
🗇 Suelda consuelda (Anredera vesicaria)		х					16.6	Starch ¹
③ Bejuco de membrillo (Smilax dominguensis)		х					16.6	Starch ¹

Vernacular name (<i>taxa</i>)	Period I ^a	Period II ^b	Period II ^c	Period II ^d	Period III ^e	Period IV ^f	Ubiquity of plants through periods (%)	Remains recovered (referentes)
Seed plants								
◆ Frijol silvestre (Fabaceae)		Х		Х	Х	Х	66.6	Starch ¹ ; Seed ³
\otimes Frijol domesticado (<i>Phaseolus vulgaris</i>)	х	х		х	Х		66.6	Starch ¹
♦ Maiz (Zea mays)	х	х		х	х	x	83.3	Starch ¹ ; Seed and kernel frag- ments ³ ; charred fragments ³ ; pollen ⁶
⊗ Haba (<i>Canavalia</i>)	х	Х			Х	Х	66.6	Starch ¹
Poaceae		Х			Х	Х	50	Starch ¹ ; Seed ³
Ω Achiote (<i>Bixa orellana</i>)					Х	Х	33.3	Starch ¹ ; Seed ³
♦ Verdolaga (<i>Portulaca</i> sp.)					Х	Х	33.3	Seed ³
Ýerba coquí (Hypoxis sp.)					Х	Х	33.3	Seed ³
√ Cohoba (<i>Anadenanthera</i> sp.)					Х		16.6	Starch ⁷ Seed/Wood ³
Fruits								
⊗ Aguacate (Persea americana)	Х						16.6	Seed⁴
⊗ Zapote amarillo (<i>Pouteria campechianum</i>)	х		х	х	х	х	83.3	Wood/Seed ³
⊗ Palma corozo (Acrocomia media)	х				Х	х	50	Starch ¹ ; Seed ³
⊗ Papaya-Lechosa (<i>Carica papaya</i>)				х			16.6	Seed ³
⊗ Guayaba (<i>Psidium guajava</i>)					х	х	33.3	Seed/Wood ³
⊗ Guanábana/coyur/anón (Annona sp.)					х	х	33.3	Wood/Seed ³
⊗ Palma (<i>Aracaceae</i>)	х					х	33.3	Seed ³
Ω Higüera (Crescentia cujete)					х	х	33.3	Seed/Wood ³
⊗ Guácima (<i>Guazuma ulmifolia</i>)					х	х	33.3	Wood ³
⊗ Jagua (Genipa americana)					х		16.6	Wood ³
\otimes Uva de playa (Coccoloba uvifera)	х				х	х	50	Seed/Wood ³
⊗ Caimito (Chrysophyllim cainito)					х		16.6	Seed/Wood ³

Table 3 Selected economic plants identified by previous paleoethnobotanical studies in Puerto Rico. **Periods (approximate ¹⁴C date ranges, see Rodríguez Ramos 2010):** *a*, "Archaic Period" (5500BC-AD100); *b*, "Agro-ceramic Period", La Hueca Culture (350BC-AD400); *c*, "Agro-ceramic Period", Early Saladoid Culture (400BC-AD400); *d*, "Agro-ceramic Period", Late Saladoid Culture (AD300-900); *e*, "Agro-ceramic Period", Ostionoid "Early Taino" Culture (AD400-1100); *f*, "Agro-ceramic Period", Ostionoid "Late Taino" Culture (AD900-1550); **Symbols:** \otimes = food plants (their seeds, tubers and/or fruits); \blacklozenge = food and/or medicinal plants (their seeds, tubers, fruits and more); Ω = industrial plants (used for dye, condiment, fuel, construction, raw material for artefacts elaboration, etc.); \diamondsuit = medicinal (their seeds, leaves, tubers, etc.); \checkmark = hallucinogen (their seeds, exudates, etc.); --= unknown use; **Notes:** 1, Source data: Pagán Jiménez (2007); 2, Source data: Pagán Jiménez (2009); 3, Source data: Newsom and Wing (2004). Clarification for this source: Macro-botanical remains of plants like maize, achiote, batata, yuca and frijol (Fabaceae) have been found in no more than 2 of the approximately 36 sites studied for botanical macro-remains content in the region; 4, Source data: Rouse and Alegría (1990); 5, Source data: Veloz Maggiolo (1992); 6, Source data: Lane et al. (2008); 7, Source data: Pagán Jiménez (unpublished data).

natto for the first time (see Newsom and Wing 2004; Pagán Jiménez 2007), while marunguey, arrowroot, maize, bean and sweet potato, placed within the total number of samples studied, are the most ubiquitous plants to be found (see some identified taxa per period in table 3). Undoubtedly, manioc starches have been recovered in early and late Ostionoid contexts from Puerto Rico, although its occurrence within the total assemblage of studied artefacts is almost imperceptible. These Ostionoid artefacts with manioc starch include a stone mortar from Vega de Nelo Vargas site (Utu-27: AD 1280-1430), two milling stone bases and one edge-ground cobble from Cueva de los Muertos (AD 680-1190), both sites located in Utuado, Puerto Rico. Another artefact where a single manioc starch grain was recovered is a ceramic pot fragment from Ceiba 11 site (AD 1150-1270). This artefact contained charred crust, presumably food remains, attached to the inside of the utensil (Pagán Jiménez 2010). Two other late Ostionoid sites from Cuba (Laguna de Limones and Macambo II)² did not reveal the use and preparation of any manioc recipe (e.g., cassava bread) even when 5 different burenes subjected to starch analysis documented grains of marunguey, bean, maize, sweet potato, cocoyam and arrowroot in a similar fashion than those documented in 5 other burenes in Puerto Rico associated to two late Saladoid sites and one late Ostionoid site (Pagán Jiménez 2008a, 2008b; Rodríguez Suárez and Pagán Jiménez 2008).

At least for pre-Colonial Puerto Rico, the observed tendency is quite clear: a broadspectrum economy was important for all the cultural periods studied until now. Each site, its respective ecosystems and the varied ways of exploiting them should have its own specificities and dynamics. Among them, we interpreted intra- and inter-site particularities regarding the use of and access to certain plants through time (e.g., Pagán Jiménez 2007). In other words, the phytocultural dynamics that existed within the studied sites show that some plants which were apparently highly esteemed at a given time subsequently decreased significantly or simply disappeared from the archaeobotanical record, resulting inversely in the increase of other plants. These are the specificities that can help us to define the nature of the economic and botanical cultures of our ancestors at the local, regional and pan-Caribbean levels.

Concluding remarks

This brief overview has made clear that the time of the earliest incursions into the Antilles (ca. 5500 BC) was characterized by processes of intense human mobility occurring along the entire surrounding continental area since long before. This time also marks true attempts at plant domestication and dispersion while diverse and strong, local or regional identities started to take shape and were later accentuated. Therefore, more than answers, this essay has intended to generate further questions regarding the circum-Caribbean phytocultural circumstances, particularly during the earliest migration and settlement episodes on the Antilles. The recent multidisciplinary evidence from the continent and the islands supports the call for the reconsideration of the "appropriator" or hunter-gatherer-fisher character of the first Antillean inhabitants, as we have argued elsewhere (Pagán Jiménez *et al.* 2005; Rodríguez Ramos 2008; Rodríguez Ramos and Pagán Jiménez 2006; see also Rivera-Collazo this volume).

² Laguna de Limones (AD 1150-1490) and Macambo II (AD 1200-1600, relative chronology), both sites in Guantánamo Province.



Figure 2: Interrelated (arrows) plants among assemblages through the archipelagic and continental areas of the circum-Caribbean, early human occupations. The "question" symbol represents void spaces for archaeobotanical data during the same early periods.

Using the archaeobotanical information summarized above for Puerto Rico and the surrounding region, several strong statements can be confidently made. The interaction vectors initially developed by the Antillean pre-Arawak societies were consistently reinforced over thousands of years. At least between Puerto Rico and the ICr (figure 2), there was a constant flow of botanic resources, technology, ideas and values among pre-Arawak groups and among later agro-ceramist groups as well (e.g., Huecoids, see Pagán Jiménez 2007; Rodríguez Ramos 2010; Rodríguez Ramos *et al.* 2008; Rodríguez Ramos and Pagán Jiménez 2006).

Other traditionally accepted interaction vectors, such as those between the Orinoco region and the Antilles, or between the Florida peninsula and the Antilles, can also be recognized during the earliest migrations towards the islands. This has important implications regarding the flow of economic plants from the Antilles towards the southeast United States (Rodríguez Ramos and Pagán Jiménez 2006). The Antilles was previously discarded as an open vector for the dispersal of important botanical resources like maize from South America to the southeast United States before the Christian era, as Sears (1982) proposed, due to the absence of direct archaeobotanical data within the islands and to the attributed hunting-gathering-fishing nature of their "Archaic" inhabitants (see e.g., Keegan 1987). This view of the Antillean region can now be transcended, notwithstanding the fact that the new direct paleoethnobotanical evidence for the presence and use of maize and other economic plants (e.g., *marunguey* sp.) before the Christian era is still regionally limited to Puerto Rico and Cuba (Pagán Jiménez et al. 2005; Pagán Jiménez 2009; Siegel et al. 2005). Further research on ancient starch grain on additional Antillean islands and from different time periods should provide further evidence to reformulate this important geo-cultural connection. Promising research lines include the exchange of economic botanic resources (e.g. maize, marunguey or Zamia) and other socio-cultural practices associated with them, such as the processing and consumption of marunguey. Certainly, with the formulation of archaeobotanical projects like the one we are initiating here, we can provide from the Antilles new and unexpected data about some of the important paleoethnobotanical information gaps that still exist in such continental region (see Brown 1994; Kelly et al. 2006; Lusteck 2006).

The attempt to understand the role of botanic cultures within the context of pre-Colonial cultural development and evolution in other areas of the Antilles and its continental surrounding, clashes with the fact that there is no comparable information neither quantitative nor qualitative, excluding Panama and Colombia. The paleoethnobotanical (i.e., macrobotanical) studies done for almost 30 years in the Antilles, even though significant (see e.g., Newsom and Wing 2004; Newsom 2008) have not provided fundamental data about the economic and nutritious plants that supplied the bulk of carbohydrates and vegetable protein in the indigenous diet of any period. It is definitely necessary to develop multidisciplinary synchronic and diachronic studies regarding the phytocultural characteristics of the Antillean pre-Colonial cultures. This can be achieved, for example, through the integrative research of macro and microbotanical remains, chemistry of human remains and chemistry of food crusts attached to artefacts. However, the study of starch grains has been the most precise approach in these regards as it can establish a direct link between root and seed resources to the tools humans used to satisfy diverse biocultural needs. Integrating this approach to the research program of the Leiden University Caribbean Research Group will begin to address some of the large information voids, not only on the Antillean islands
themselves, but also in some continental areas, such as French Guiana and surrounding territories.

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The circulation of jadeitite across the Caribbeanscape

Reniel Rodríguez Ramos

The multi-vectorial distribution of the various forms of jade has received renewed attention in the Americas. This has resulted from two recent developments: the identification of artefacts in pre-Colonial contexts of the Antilles made of a variety of jadeitite which was purportedly obtained from the Motagua River Valley in Guatemala, the main source of this raw material documented thus far in Central America, and; the finding of jadeitite outcrops in Hispaniola and Cuba, which drastically alter previous notions regarding the geologic occurrence of this raw material in the western hemisphere. In this paper, I will discuss the implications of these findings for our understanding of the dynamics of interaction registered between the pre-Hispanic inhabitants of the Greater Caribbean.

La distribución multivectorial de las diversas formas de jade ha recibido una renovada atención recientemente en las Américas. Esto ha sido el resultado de dos eventos importantes: la identificación de artefactos en contextos precoloniales antillanos hechos de una variedad de jadeitita la cual fue probablemente obtenida del Valle de Motagua en Guatemala, la fuente principal de este tipo de material en América Central, y; la identificación de fuentes de jadeitita en La Española y Cuba, lo cual altera drásticamente las nociones previas en torno a la ocurrencia geológica de este tipo de material en el hemisferio occidental. En este articulo, se discutirán las implicaciones que estos hallazgos tienen para nuestro entendimiento en torno a las dinámicas de interacción registradas entre los habitantes prehispánicos del Gran Caribe.

La distribution multi-vectorielle des différentes formes de jade a fait l'objet d'un regain d'intérêt dans les Amériques. Ceci résulte de deux évolutions récentes : l'identification des artefacts dans les contextes précoloniaux antillais, fabriqués dans une variété de jadéite présumée provenir de la vallée de la rivière Motagua au Guatemala, source principale de cette matière première identifiée jusqu'ici en Amérique centrale, et la découverte d'affleurements de jadéite à Hispaniola et à Cuba, qui modifient radicalement les notions antérieures sur la présence géologique de cette matière première dans l'hémisphère occidental. Dans cette article, je débattrai des implications de ces trouvailles sur la compréhension des dynamiques d'interactions répertoriées entre les habitants préhispaniques de la grande Caraïbe. "En la obtención de esas piedras, como todos los materiales que los aborígenes empleaban en la fabricación de sus objetos utilitarios, se practicaba un ritual especial de ayunos y abstinencias. Las piedras adivinatorias exigen cierta redondez y brillo para darle cierta atracción sagrada. Estas operaciones solían realizarse en el mismo río donde descubrían el material adecuado. Es posible que las mismas prácticas se aplicaran en la obtención de la materia prima de los jades" Aguilar (2003:78).

In the process of transforming a rock into a humanized object, the selection of particular raw materials plays an essential role. Raw materials were chosen not only on the basis of functional qualities such as their hardness or edge-retention capacity but also by virtue of ideotechnic considerations such as their colour, lustre, or place of origin. Some rocks were particularly valued in ancient times, being circulated across vast distances even when raw materials with similar qualities were locally available in their contexts of consumption. In the Americas, the type of rock that received the most extensive horizontal and vertical circulation was jadeitite. This type of rock has been found in archaeological deposits that span from northern Mexico to Colombia and the Antilles, in contexts that date from 1500 BC in the Olmec region all the way to the contact period.

Jadeitite derives its name from the word jade, which itself is derivative from the name recorded in 1565 by Nicolás Monardes - *piedra de yjada* - for making reference to a highly valued type of rock used to treat colics among the Aztec (Foshag and Leslie 1955; Harlow *et al.* 2007; Howard 2002). In addition to its curative qualities, the reasons for the importance of this type of rock varied markedly in time and space. For instance, jadeitite has been deemed to embody significations such as water or maize (i.e. fertility) for the Maya while among the Olmec it was revered because of its relation to the serpent cult (Taube *et al.* 2004). Even today, the appeal of jadeitite continues to be manifested as, for example, through its use as the state and provincial gemstone of Alaska and British Columbia respectively and its employment to calm wrecked nerves in New Age therapy. Whole museums have been devoted to the study and display of artefacts made of this type of raw material, again underlining its salience both in the past and the present.

The significance placed on this type of rock has promoted it to be one of the best researched raw materials found in archaeological sites worldwide. Until recently, the available evidence indicated that primary deposits of jadeitite occurred in only two sources in the Americas: one in California and another in the Motagua Fault Zone in Guatemala. Of these, the Guatemalan source has received the most attention, since it has been deemed as the context from which most, if not all, of the jadeitite found in Mesoamerican and Isthmo-Colombian sites was obtained. However, the recent finding of Antillean jadeitite sources, particularly in Cuba and Hispaniola, demands that we reassess the vectors of distribution of this raw material in both the insular and continental Caribbean. In this work, I will evaluate the implications that the finding of jadeitite sources in the Antilles has for the understanding of pan-regional dynamics of the distribution of this raw material across the Caribbeanscape.

The sources of jadeitite

Jadeitite is a metamorphic rock composed primarily of the mineral jadeite, which occurs in serpentine-matrix *mélanges* that form at high high-pressure/low low-temperature in subduction environments from hydrothermal fluids released during dehydration of the altered oceanic crust (Harlow *et al.* 2006, 2007, 2010; Sorensen *et al.* 2006). Jadeitite (or jadeite jade) is differentiated from its close relative, nephrite jade, by the fact that the former is composed mostly of jadeite pyroxene while the latter mainly contains felted tremolite-actinolite. Nephrite jade forms under different petrogenetic conditions (Harlow *et al.* 2007) and has a lower specific gravity and refractive index than jadeitite. It is also softer and of more limited chromatic variation.

Due to the particular conditions required for the formation of jadeitite, until recently only twelve occurrences of this raw material had been identified worldwide (Harlow and Sorensen 2005). Of these, only two sources of jadeitite had been documented in the Western Hemisphere: one located in the New Idria serpentinite, San Benito Co., California, associated with the San Andreas Fault, and another situated in central Guatemala adjacent to the Motagua Fault Zone (MFZ). The Guatemalan source is one of the largest jadeitite bearing areas in the world, extending for more than 200 km in lateral extent. It presents palpable differences both to the north and south of the MFZ, allowing researchers to discriminate with high degrees of resolution their provenance from either of those two areas (Harlow *et al.* 2006, 2010). While the jadeitite found to the north of the MFZ contains albite, analcime, and white mica as important constituents, the one that occurs south of the MFZ also contains rutile, lawsonite, and quartz, which are essentially absent in the northern source. It is this southern occurrence the one argued as the most probable provenance for the jadeitite used for the manufacture of the celts found in Puerto Rico, the Virgin Islands, and Antigua (Harlow *et al.* 2006, 2007), as will be discussed below.

It should be noted, however, that not everyone has agreed on the existence of a single jadeitite source in Central America. Bishop and Lange (1993) have argued that the composition of the jadeitite artefacts found in Lower Central American contexts are not consistent with that of Motaguan materials, thus proposing that there is a source somewhere in Costa Rica yet to be discovered. However, Harlow (1993) has argued that not only were the geological conditions appropriate for the formation of jadeitite not present in Central America except the Motagua Fault Zone, but also that the composition of Motaguan jadeitites is sufficiently variable to encompass the jadeitite materials found in Costa Rican archaeological contexts.

Aside from the Central American jadeitites, no other source of this raw material had been documented in the Americas. However, recent research conducted by geological teams from Europe, the Antilles, and the United States has recently documented jadeitite occurrences in the insular Caribbean, particularly in northern Hispaniola and in the far east of Cuba, all of which seem to be geologically correlated to the Cretaceous high-pressure complexes of Central Guatemala (García Casco et al. 2009a). The Hispaniolan jadeitite occurrence is located in a serpentinite *mélange* formed in a subduction channel located in northern Dominican Republic, west of Samaná, that forms part of the Rio San Juan complex (Schertl et al. 2007). Jadeitites are found in this source both as lenses or blocks and as veins within laswsonite-bluechist blocks (Baese et al. 2010). These vary white to green in colour and, in addition to jadeite (more than 90% per volume) also contain as minor constituents quartz, pumpellyte, omphacite, and lawsonite, among others (Baese et al. 2007). Evidence of jadeitite has also been uncovered in Cuba in one main source. It is located on the eastern portion of the island in Sierra del Convento (Cárdenas Párraga et al. 2010; García-Casco et al. 2009a). In this source area, jadeitite objective pieces have been found in gravel bars and channels as well as in the mouths of the Macambo and Guardarraya rivers. The jadeitite here was formed at higher temperature than typically interpreted for jadeitite formation

but still in the context of serpentinite matrix *mélange* (García Casco *et al.* 2009a). Jadeitite occurs as in-situ deposits, detrital boulders, and secondary materials transported by highenergy fluvial systems in four different areas of this subduction *mélange* (Cárdenas Párraga 2010). Analysed samples indicate that the jadeitite of talisman-quality is of a light green colour, "being formed by 95% pyroxene (jade \pm omphacite) and albite, phlogopite and epidote (about 5%)" (Cárdenas Párraga 2010:202). Other components include white mica, apatite, quartz, dolomite, and chlorite. There is also a darker and more heterogeneous variety of jadeitite in this *mélange*, with more chromatic variation (from greenish white to dark green), also containing epidote and albite in larger amounts. The presence of jadeitite in the Cretacous subduction complex of Escambray, in south-central Cuba, has been suggested but no confirmation of its occurrence in that high-pressure accretionary body has been provided (García Casco *et al.* 2009a).

It should be noted, however, that the evidence available is still incomplete, as new potential sources are likely to be found in other circum-Caribbean regions where geological conditions make feasible the formation of this type of rock. For instance, Garcia Casco *et al.* (2009b) have identified other potential jadeitite occurrences in Margarita Island, Villa del Cura in north-central Venezuela, and the Guajira Peninsula in Colombia, none of which has been studied in detail. In Puerto Rico, the only potential source of this raw material cited in the geological literature is located deep underwater in the Puerto Rico trench, making it a very improbable source of humanly exploited raw material. The other potential occurrence is situated in the south-western part of Puerto Rico, in association to the Sierra Bermeja, Monte del Estado, and Rio Guanajibo serpentinite belts. Due to the fact that most of these serpentinites have been found within low pressure ophiolite bodies rather than in *mélanges*, it has been deemed that this region is an unlikely candidate for the presence of high-pressure blocks of jadeitite (Harlow 2010 and A. García Casco, personal communication).

Characterization studies of jadeitite in the Antilles

Recent research on Antillean pre-Colonial materials has documented the use of jadeitite for the production of personal adornments and bifacial ground stone tools in various islands. Although the employment of this raw material for artefact manufacture had been proposed since the early twentieth century in the Antilles (e.g. Harrington [1924] and Smith [1954]), it has not been until the last decades that characterization studies have been conducted in order to verify its identification with high degrees of resolution. This has been problematic as it has led to the misidentification as jadeitite of many fine-grained greenish rocks, particularly nephrite jades and serpentinites. In most cases, this has resulted in an overemphasis of the quantity of jadeitite artefacts found in some archaeological contexts. However, the pendulum has also swung in the opposite direction, as now we are beginning to identify new jadeitite pieces that had been previously mislabelled as other types of raw materials or included into the catch-all "greenstone" category. This lack of recognition of jadeitite might explain to an extent the absence in the archaeological literature of this material in Cuba and Hispaniola, despite the finding of occurrences of this raw material in those islands.

Although in association with the boom in Saladoid/Huecoid research in the insular Caribbean (particularly in Puerto Rico and the Lesser Antilles) that has taken place in the past three decades there has been an increase in emphasis in the detailed study of the semiprecious stones involved in long-distance exchange for lapidary production (Chanlatte Baik and Narganes Storde 1983; Cody 1993; Murphy *et al.* 2000; Rodríguez López 1993; Sued Badillo 1979; Watters 1997; Watters and Scaglion 1994), there has been a dearth of characterization studies that have attempted to make fine-grained analyses of such raw materials. With few exceptions (e.g. Murphy *et al.* 2000) their identification and estimations about their provenance have been mostly based on their macroscopic observations and literature reviews. This is particularly problematic when considering that characterization research on jadeitite has shown that, due to the inhomogeneous character of this type of rock, whole rock analysis is of less utility for sourcing studies than the analysis of its minor mineral constituents (Harlow *et al.* 2007; Seitz *et al.* 2001).

Fortunately, although petrographic and chemical analyses of rocks have been slow to arrive to the Antilles, in recent years characterization studies have become much more common. The earliest recorded documentation of jadeite artefacts using characterization techniques comes from Puerto Rico where x-ray studies where conducted by geologists from the U.S. Geological Survey on several celt flakes and fragments (Smith 1954). Together with measurements of their refractive index (which spanned from 1,662 to 1673), hardness (7 in Moh's scale), and specific gravity (3.32), the analysis of these artefacts demonstrated that the raw material used in their production was jadeitite. In this study, the author argued that if this raw material was not procured from a yet unidentified jadeitite occurrence associated to the serpentinite belt located on the south-western part of the island, these were very likely "obtained from Costa Rica by the Arawaks or by the more adventurous Carib tribes, either directly or by transference via the Yucatan Peninsula, southern United States, or northern South America" (Smith 1954:26; translated by the author).

This study was followed more than three decades later in the Bahamas, where X-ray diffraction (XRD) was applied on a celt associated to a context dated circa AD 1000 from the Pigeon Creek site (Rose 1987). Although it was based on only one archaeological specimen, this analysis was of great importance since it led Rose to identify with precision the petrographic signature of this type of raw material and to argue that it was very likely obtained from the aforementioned Motaguan source. Furthermore, the presence of jadeitite on this site lends some support to de Booy's (1914) early observations on the finding of this raw material in several archaeological contexts of the Bahamas.

Although during the past couple of decades several characterization studies have been conducted on lithic materials from the Antilles (e.g., Haviser 1999; Knippenberg 1999, 2006; Murphy *et al.* 2000; Rostain 1999), no detailed studies of jadeitite artefacts had been undertaken until recently. The earliest of these recent jadeitite studies comprised the analysis of ten celts and celt fragments unearthed by Reg Murphy and colleagues from Saladoid contexts documented in Mill Reef and Elliot's sites in Antigua. This study was conducted by George Harlow of the American Museum of Natural History utilizing imaging and petrography, scanning-electron microscopy, X-ray diffraction, and *electron microprobe chemical analysis* (Harlow *et al.* 2006). The results of this study demonstrated that the mineralogy (particularly the presence of quartz, phengite, lawsonite, and white-tan mica) and texture of these bifacial ground tools more closely matched that of jadeitite from Guatemala, in particular that found south of the MFZ, than they do that of jadeitite from California or any of the other sources that had been identified at that time.

These results were replicated in analyses conducted by Harlow on jadeitite artefacts from Puerto Rico and the Virgin Islands. In Puerto Rico, x-ray diffraction studies on materials from the sites of Punta Candelero, La Hueca-Sorcé, Río Tanamá, and Tecla I showed the employment of jadeitite of similar composition to that identified in Antigua for the production of six biconvex celts and one plano-convex adze (Harlow 2007; cited in Rodríguez Ramos 2007, 2010a, see below). The sites from which these were obtained not only indicate the widespread movement of this raw material in the island, but also show the marked vertical extension of its circulation since it has been found in association to sites that date between 450 BC and AD 1000.

Further testing on 36 artefacts (celts and personal adornments) from the Folmer Andersen Collection from St. Croix was conducted by George Harlow with the use of SEM and x-ray spectrometry (cited in Hardy 2008). The results of the analysis of the celts were consistent with those of Puerto Rico and Antigua. One interesting aspect of this collection is that it contained 16 ornaments, six of which were of the batrachian variety so conspicuous amongst Saladoid and Huecoid assemblages. In this analysis, none of these personal adornments were identified as jadeitite. In fact, thus far there has been no characterization study corroborating archaeological identifications of jadeitite used for ornament manufacture in the islands.

Although all of the aforementioned studies suggest a Central American origin for the jadeitites found in Antillean archaeological sites, most of them also acknowledged the possibility that these were procured from yet undiscovered Greater Antillean sources of this raw material. This is an important issue because the jadeitites found in Antillean archaeological collections have been argued to show some compositional concomitances with the recently identified jadeitite materials from Cuba and Hispaniola. For instance, Schertl *et al.* (2007: 10) indicate that there are marked similarities in both the mineral and fabric signatures between the Hispaniolan jadeitites and those found south of the MFZ. Particularly, the co-occurrence of quartz, lawsonite, and pumpellyite together with jadeite identified in the Hispaniolan occurrence has been deemed to correspond to what has also been observed in sources south of the MFZ (Maresch *et al.* 2008). This, according to Baese *et al.* (2007), may be pinpointing a Hispaniolan rather than a Guatemalan origin for the Antillean jadeitite materials.

The Antillean derivation of the jadeitites found in Greater Antillean sites was also proposed by García Casco *et al.* (2009b) on the basis of the analysis of materials from Cuba. They argued that "the rare occurrence of quartz in Antiguan jade and some Guatemalan samples (in addition to phengite, lawsonite, and glaucophane) indicated by Harlow *et al.* (2006) cannot be taken as diagnostic because similar quartz-bearing jadeitites are present in the Rio San Juan and Sierra del Convento mélanges." However, Harlow *et al.* (2009) are still of the impression that the jadeitite artefacts that he has identified from Puerto Rico, the Virgin Islands, and Antigua have a Motaguan origin and more characterization research on materials from the Antilles is currently being undertaken in order to develop criteria for source discrimination with higher degrees of resolution.

It is evident from the previous discussion that, at present, the available geological data is not fine-grained enough to itself resolve the issue of jadeitite distribution in the Antilles. I will now turn to the archaeological evidence regarding the use of this raw material in the Antilles and surrounding continents, as it may prove very important to decipher the dynamics of circulation of this raw material in the Greater Caribbean.

Technological, stylistic, and contextual considerations

The archaeological evidence available may be a very useful complement to geological information to at least begin narrowing down the potential sources of the jadeitites found in pre-Colonial contexts in the islands. Particularly, the analysis of the consumption contexts, technological styles, and iconographic themes objectified in this type of material may shed some light into the probable areas from which the jadeitite found in Antillean archaeological contexts was most likely being procured through time.

The contextual information available thus far indicates that the earliest evidence for the consumption of jadeitite in the Antilles dates to the contexts dated between 500 BC and AD 500/700, which form part of what I have termed the Iridescent Period (Rodríguez Ramos 2010b). This period is characterized by the emphasis on the long-distance circulation of shiny personal adornments made of semi-precious stones and greenstone celts. The Antillean Iridescent Period corresponds temporally to the widespread distribution of Motaguan jadeitite between Guatemala and Costa Rica in association to what Guerrero Miranda (1993) labelled the Initial and Florescent Periods (500 BC to AD 700). Jadeitite artefacts uncovered from Huecoid and Saladoid contexts dating to this period unearthed from Puerto Rico, the Virgin Islands, and Antigua have been analysed in detail by Harlow (2006, 2007) who, as previously noted, has argued that the most probable source for those artefacts is the Motagua River Valley in Guatemala.

Further support for the Motaguan provenance of jadeitities during this period comes from the fact that there is no evidence at this time of Huecoid or Saladoid contexts anywhere in Cuba or Hispaniola, nor is there any indication of the contemporaneous consumption of jadeitite by the pre-Arawak inhabitants of those islands. Therefore, at present, there is no archaeological support for the local exploitation or the extra-island distribution of jadeitite from Cuba or Hispaniola to Puerto Rico and the Lesser Antilles before AD 700 (the earliest date for the El Cabo site in the Dominican Republic where jadeitite celts have recently been identified; Samson 2010). Thus, the available negative archaeological evidence lends credence to Harlow's (2006, 2007) arguments for a Motaguan origin of the jadeitite found in the Antilles during this Iridescent period.

This, however, does not totally rule out a possible early interaction sphere within which jadeitite might have been moved east from Cuba or Hispaniola. In fact, we have argued for the existence of a "west to east influence corridor" during this time (Rodríguez Ramos 2001), which encompassed early interaction networks between Huecoid/Saladoid groups in Puerto Rico and pre-Arawak groups from Cuba and Hispaniola. These interactions led to the eastward movement of materials like chert blades and the negotiation of technological traditions such as the centripetal core reduction observed in Huecoid sites from Puerto Rico, both of which have been documented in pre-Arawak contexts in both Cuba and Hispaniola. Although this might be a very interesting possibility, at this point there is no confirming archaeological evidence that jadeitite was also transacted between Cuba/Hispaniola and Puerto Rico/Lesser Antilles in these early interaction spheres prior to AD 700.

Other lines of evidence that seems to point to a Motaguan origin for jadeitites found in the islands during this Iridescent period come from the stylistic and technological parallels noted between the personal adornments and celts produced at this time in the Antilles and Lower Central America, most notably in Costa Rica. Thus far, the earliest evidence for jadeitite celts available in the Antilles comes from the Huecoid context of Punta Candelero in Puerto Rico, as well as from Saladoid contexts associated to white on red pottery from Puerto Rico, St. Croix, and Antigua. The widespread movement of jadeitite for celt production during this period is related to the circulation of other raw materials between the Lesser Antilles and Puerto Rico for celt making, which include cherty carbonate from St. Martin (Knippenberg 2006) and serpentinite (Rodríguez Ramos 2007, 2010a). Neither the production of petaloid celts nor the presence of either serpentinite or cherty carbonate has been documented in archaeological contexts west of Puerto Rico prior to AD 700, which seems to indicate that the inhabitants of Hispaniola and Cuba were not involved in these long-distance celt exchange networks.

A salient element of this celt production and distribution process during this time is the manufacture of the plano-convex adze associated exclusively to Saladoid contexts of Puerto Rico. Due to its association to mortuary practices and its lack of use traces at the macroscopic level, the plano-convex adze has commonly been considered to be manufactured for non-utilitarian activities (Rodríguez Ramos 2001, 2007; Siegel 1992). The evidence available thus far indicates that the production of this type of tool is not only absent in Cuba and the Dominican Republic, but also in Saladoid and Huecoid contexts of the Lesser Antilles and north-eastern South America. Interestingly enough, the production of plano-convex adzes is commonly observed between Costa Rica and Guatemala during this period. Particularly in Costa Rica, these are found without decorations, as pendants, or depicting the axe-god motif (Guerrero Miranda 1993). The fact that one of the bifacial ground stone tools of purported Motaguan jadeitite found in Puerto Rico is a plano-convex adze again seems to pinpoint to a Central American provenance of this raw material during this period.

Further support for a Central American origin of the jadeitite found in Antillean contexts comes from the iconography embodied in some of the personal adornments produced during this Iridescent period in the Antilles and Lower Central America. Although, at present, no characterization studies have been undertaken with lapidary artefacts made of jadeitite, we are currently conducting such analyses in order to ascertain their petrologic



Figure 1 Themes objectified in personal adornments in Puerto Rico and the Lesser Antilles (a, beak bird, La Hueca-Sorcé; b, reptilian, La Hueca-Sorcé; c, curly-tailed, Tecla 1; d, squatted, Tecla 1; e, frogshaped, La Hueca-Sorcé; f, batrachian, La Hueca-Sorcé; g, winged, La Hueca-Sorcé; h, axe-god, Antigua (modified from Chanlatte Baik and Narganes Storde 2005, 2005; Murphy 2005).

signature and identify their likely source(s). Despite this limitation, there are other materials that played overlapping symbolic roles with jadeitite, collectively known as "social jades" (Guerrero Miranda 1993; Lange 1993) that were used in the Puerto Rico and the Lesser Antilles in order to objectify an assemblage of themes of macro-regional significance, while not being found thus far in either Cuba, Hispaniola or north-eastern South America during this time (before AD 500/700). Among the most conspicuous of these themes in both the Antilles and the Isthmo-Colombian area are those embodied by the beak-birds pendants, winged motifs, curly-tailed emblems, reptilian images, axe-gods amulets, and batrachian-shaped adornments (Figure 1).

Of these, the most salient one is the beak-bird motif depicted by a raptorial bird with either a deformed human head or an animal clasped in its claws, observed primarily in Huecoid contexts in Puerto Rico and Vieques. As noted elsewhere (Rodríguez Ramos 2007, 2010a; Rodríguez Ramos and Pagán Jiménez 2006), these present marked similarities with jadeitite beak-bird pendants recovered from contemporaneous contexts of the Caribbean Watershed of Costa Rica. As is the case in Costa Rica, many Antillean researchers have identified this ornitomorphic icon as representing a king vulture (e.g., Allaire 1999; Boomert 2000). However, as has been discussed with Julio Sánchez (2010 personal communication), ornithologist of the Museo Nacional de Costa Rica, the anatomical features of the birds depicted in the Huecoid pendants are indeed indicative of condors, as had been argued by Chanlatte Baik and Narganes Storde (1983, 2005). This ornithologist notes that morphological elements such as the location of the carbuncle, the protuberance of their dorsal sides, and the clear presence of sexual dimorphism are apparent morphological indicators of this raptorial bird.

Furthermore, the fact that in the Huecoid specimens the bird is carrying a body in their claws supports such identification since the king vulture has weak feet and short claws, so they tend to feed standing over the carrion. This perhaps is why the king vultures depicted in Costa Rican lapidary work have their beaks connected to their preys, very likely indicating an act of feeding, while the ones from Huecoid contexts have them clasped in their claws, which seems to be denoting an act of flight. Whether this schematized animal representation objectifies different interpretations of a myth using different but related animals (i.e., a vulture cult; see Benson 1997) as has been documented in the Antilles ("mythic substitution" from jaguars to dogs; Rodríguez López 1997; Roe 1995) or different parts of a mythical narrative, among other possible interpretations, is an issue worth exploring further. Moreover, the importance of analyzing in more detail the symbolising of this icon becomes more apparent when considering that the condor is nowhere present in the Antilles or north-eastern South America, which indicates that it might represent some totemic image that served to associate the performers of this Huecoid tradition to an ancestral location in the lower Isthmo-Colombian area. This Isthmo-Antillean relationship is also indicated by the fact that, as is the case of Costa Rican specimens, the negative spaces within the Huecoid beak-bird pendants are produced with the use of string sawing. Interestingly, this technique has only been documented in contemporaneous contexts to those of Puerto Rico in Costa Rica, Ecuador, Mexico, and south-eastern United States.

Another of the themes observed in the Antilles at this time, which forms an integral part of Costa Rican iconography, is the axe-god motif. In Costa Rica, this motif is made exclusively over jadeitite obtained from the MFZ. It usually depicts an avian or an anthropomorphic image whose head is invariably located in the proximal section of plano-convex adze-shaped objective pieces. In the Antilles, a piece that echoes stylistically this axe-god theme was found in the Mill Reef site in Antigua made out of what has been identified as nephrite jade (Figure 1h). Interestingly, the Antiguan axe-god pendant has its figurative portion surmounted towards it proximal end, thus perhaps indicating some sort of inverted iconography in comparison with Costa Rican specimens. As is the case in the Costa Rican exemplars, the one from Antigua was drilled transversely for suspension, which showcases another very particular technological element shared between these areas.

This use of transverse incision has also been observed in the production of batrachianshaped amulets from Puerto Rico and the Lesser Antilles that are conceptually similar to those of Costa Rica and Panama, while being absent in Cuba and Hispaniola at this time (see Rodríguez Ramos 2010a, 2011 for detailed comparisons). This is also the case for the other themes objectified in Saladoid and Huecoid lapidary artwork in Puerto Rico and the Lesser Antilles (curly-tailed motifs, winged pendants, and reptilian images). The absence of artefacts indicative of the participation of the inhabitants of Cuba and Hispaniola in the pan-regional negotiation of this symbolic repertoire is very important because it again indicates their lack of integration in the social networks within which these themes were circulated and consumed during this time.

In sum, the available iconographic, contextual, and technological evidence indicates that jadeitites used in Antillean contexts prior to AD 500/700 were not likely obtained from Cuba or Hispaniola, but rather from the MFZ, as has been argued by Harlow (2007; Harlow et al. 2006). However, the picture becomes more complicated after AD 700, when jadeitite artefacts begin to be found in Hispaniola and, eventually, in Cuba. This coincides temporally with the interruption in the pan-regional networks within which jade (both jadeitite and social jade) used in lapidary production was circulated in Costa Rica, Puerto Rico, and the Lesser Antilles, which in the insular Caribbean marks the onset of what I have termed the Nucleation Period (Rodríguez Ramos 2010b). While in Lower Central America this seems to be related to a shift from the circulation of jadeitite to the widespread movement of gold-copper alloys (tumbaga or *guanín*), in the Antilles the shift seems to be focused on the production and distribution of wood artwork as is evidenced by accompanying shifts in lithic technologies (Rodríguez Ramos 2010b.). Although the distribution of lapidary materials made over semi-precious stones drastically declines at this time, the long-distance movement of celts made of jadeitite continues to be of marked importance in the Antilles.

It is after AD 700 that the earliest evidences of jadeitite use have been uncovered from Hispaniola and Cuba. The earliest context where jadeitite has been identified by trained geologists in either of those two islands has been that from the site of El Cabo, located in eastern Dominican Republic, which dates between AD 700 and 1500 (Samson 2010). Studies are currently under way to determine if the jadeitites used for these celts are from the local Hispaniolan source or were imported from outside the island (either from Cuba or the MFZ). The use of jadeitite for the production of celts has also been observed in eastern Cuba in association to "Taíno" contexts that likely date post-AD 1000. Studies conducted by Mendoza *et al.* (2009) have indicated that the jadeitite employed in the production of these materials was obtained from the Sierra del Convento region, thus demonstrating the beginnings of the exploitation of this raw material during this time in that island.

After AD 500/700 the macro-regional circulation of jadeitite celts intensifies in Puerto Rico and also extends farther into the Lesser Antilles as well as into the Bahamas (after AD 850). In Puerto Rico, detailed studies corroborating the import of jadeitite celts dating to this period have been conducted by Harlow (2007) on materials from Rio Tanamá. An inspection of the archaeological collections housed at the Museo de Historia, Antropología y Arte of the Universidad de Puerto Rico has shown that the use of jadeitite for celt production in Puerto Rico during this time is much more conspicuous than previously thought, as these seem to be found in most collections, albeit in small numbers in each of them (Figure 2). This increase in emphasis in the consumption of jadeitite celts in Puerto Rico coincides with an interruption of the distribution of cherty carbonate celts from St. Martin to the island as well and of serpentinite celts and axes. In the Lesser Antilles, however, cherty carbonate celts continued to circulate east of St. Martin together with jadeitite celts that were likely moved down the island chain in a west to east axis. Jadeitite celts have been identified (based on visual inspections) in Coakley Bay and Estate Adrian in St. Croix, Estate Anguilla in St. Johns, Golden Rock in St. Eustatius, Forest North in Anguilla, Kelby's Ridge in Saba, Anse à la Gourde in Guadeloupe, and several other islands, going all the way down to sites near Balembouche in St. Lucia. Interestingly, in all of these locations, the available evidence also indicates that this raw material constituted a rather small portion of the celt assemblages. This scarcity of jadeitites in the overall composition of the collections, together with the fact the ideological load usually imbued to this raw material, might be indicating its continued use in ceremonial exchange as had been argued by Boomert (1987) for the circulation of greenstones in the northern Amazon. Its numinous qualities are evi-



Figure 2 Jadeitite celts from Puerto Rico (Museo de Historia, Antropología y Arte, Universidad de Puerto Rico).

denced by the finding of two jadeitite petaloid celts placed as offering in a burial context in the Monserrate site in eastern Puerto Rico.

At this point it is unclear if the jadeitite found in Puerto Rico and Lesser Antillean archaeological contexts at this time was obtained from the MFZ *and/or* from any of the sources identified in either Cuba or Hispaniola. However, the archaeological evidence indicates that it is very likely that after AD 700 there is an increase in emphasis in the Antilles in the consumption of jadeitite celts obtained from Cuba and Hispaniola, as suggested by the aforementioned decline in the pan-regional circuits that promoted the long-distance circulation of jadeitite south of the MFZ. This does not mean that the import of Motagua jadeitite completely ceased, but that the local sources likely became increasingly important through time in the Antilles. After AD 850, Cuban and/or Hispaniolan jadeitite was moved north into the Bahamas together with other materials recovered from archaeological contexts that purportedly were obtained from those islands (Berman 2000; Keegan 1992).

After AD 1000, the role of celts in the articulation of superstructural traditions of panregional significance seems to have become particularly relevant in the Antilles. After this time, celts become highly elaborated, most notably those petaloid in shape recovered from Greater Antillean contexts, which present morphologies unlike any other celts observed in the circum-Caribbean region (Figure 3). These petaloid celts are characterized by high



Figure 3 Petaloid celts, Paso del Indio, Puerto Rico.

degrees of burnishing, a type of termination that seem to have more to do with their aesthetic qualities (i.e., shininess) than their functionality (see Rodríguez Ramos 2001 for a discussion on this issue).

The rather conservative manufacturing guidelines that seem to have been followed in the production trajectories of these celts in different islands serve as an indicator of the ideological integration that took place between the participants in the articulation of the late pre-Colonial symbolic reservoir which I have called "Taínoness" (Rodríguez Ramos 2007, 2010a). The routinization of the tenets of this superstructural mosaic not only involved the creation of formalized ritual spaces (i.e. bateyes) in the Greater Antilles, but also the production of ritual paraphernalia for public display that included monolithic and decorated axes, stone and wooden *duhos*, stone belts, and elbow stones made of locally available materials. All of these artefacts embody a symbolic code that seems to become increasingly antilleanized during the late pre-Colonial history of the islands (see Hofman et al. 2007; Oliver 2009). Concomitant with this, there seems to be a decrease in intensity in the longdistance distribution of jadeitite east of the Dominican Republic. Perhaps, this illustrates a ritual realignment in which the ideological capital carried by jadeitite in earlier times gave way to a more intense reliance on the symbolic grammar that objectified the tenets of the aforementioned spectrum of "Taínoness," which was variably negotiated by the inhabitants of the Greater and the Lesser Antilles.

This antilleanization of superstructural traditions, however, does not mean that contacts with Lower Central America that might have promoted the import of jadeitite, among other materials, from that area completely ceased. In fact, there are clear indicators of Isthmo-Antillean contacts, as is for instance expressed by the import of *guanín* or tumbaga, whose production was limited to the Isthmo-Colombian area and Mesoamerica at this time. Other artefacts such as the tripod *metates* with decorated panels quite similar to those recovered from Costa Rican contexts have been obtained from sites in the Greater Antilles. This, together with many other lines of information (see Rodríguez Ramos 2007, 2010a, 2011 and Rodríguez Ramos and Pagán Jiménez 2006 for a detailed discussion), shows the continued existence of pan-regional communities of practice articulated by maritime webs of social traffic during the late pre-Colonial history of the Greater Caribbean.

Concluding remarks

As has been made evident throughout this work, jadeitite was a raw material of vast importance for the societies that inhabited both the insular and the continental Caribbean. Although its meaning, significance, and the vectors of its distribution seem to have varied through time and space, this raw material remained as a highly valued commodity for around 3000 years in the Greater Caribbean.

The recent finding of the Antillean sources of jadeitite opens a whole new avenue of research regarding the mechanics of distribution of this raw material at both the local and pan-regional levels. Although were are still not at a point to make definitive statements regarding the dynamics of circulation of jadeitite in the insular and the continental Caribbean, in this work I have attempted to present some insights into what the archaeological evidence available seems to be pointing to. On the basis of contextual, iconographic, and technological evidence, I have argued that the jadeitite found in Antillean contexts that pre-date AD 500/700 has a Motaguan origin as argued by Harlow *et al.* (2006) on the basis of characterization studies. I have also suggested that the picture becomes more

blurred after AD 500/700, when it seems that the Antillean sources of jadeitite come into the mix and become inserted into previously delineated interaction networks that extended between the Greater and the Lesser Antilles, as well as with the continental Caribbean. The long-distance circulation of jadeitite seems to decline after AD 1000 east of the Dominican Republic, when other types of meta-volcanic rocks were used in the production of highly elaborated celts and other types of lithic sumptuary artefacts.

Although I have mostly circumscribed the present discussion to the circulation of jadeitite, it is evident that the distribution of this raw material should not be seen in a vacuum. This is particularly the case when considering the information that is being generated from the study of metallurgical, botanical, malacological, and ceramic materials, all of which indicates the existence of multiple intersecting maritime networks that were articulated across the Caribbeanscape in which raw materials, finished products, information, symbols, and esoteric knowledge were being circulated across geographic and cultural frontiers.

Some of these interactions seem to have entailed engagements between peoples from the insular and the continental Caribbean. This raises the question of the possible Antillean origin of some of the jadeitite raw materials that have been found in Costa Rica and Mesoamerica, which might to an extent help to explain the variability that has been noted by Bishop and Lange (1993) in Lower Central American collections. The fact that there are products from the Antilles in the Isthmo-Colombian region is to be expected, since long-distance transactions tend to be reciprocal in nature (Renfrew 1986; Stein 1998). This makes evident that further studies are needed in both the insular and the continental Caribbean in order to determine with higher degrees of resolution the vectors of distribution of this raw material, which may allow us to begin unravelling the nature of the millenary interactions that took place across the Caribbeanscape.

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'This relic of antiquity'

Fifth to fifteenth century wood carvings from the southern Lesser Antilles

Joanna Ostapkowicz, Christopher Bronk Ramsey, Alex C. Wiedenhoeft, Fiona Brock, Tom Higham, and Samuel M. Wilson

The results of AMS dating and wood identification on three carvings recovered from the southern Lesser Antilles (Dominica, Battowia and Trinidad) are discussed, placing the objects in the context of events and interactions that spanned the region's prehistory from the fifth to fifteenth centuries AD. Each hints at a rich legacy – of their passage through the hands of those who invested in them (whether through making, using, trading, collecting or displaying them) in a process that sometimes covers vast geographical and cultural distances. They reflect the social dynamics and fluid interconnections between Caribbean peoples – and between people and objects – that bound the region in a praxis of materiality, mobility and exchange.

Se discuten los resultados de fechamiento por medio de Espectometría de Masas (E.M.) y la identificación de especies de madera de tres objetos tallados, recuperados en el sur de las Antillas Menores (Dominica, Battowia y Trinidad), así colocando dichos objetos en el contexto cronológico de eventos y interacciones conocidos de la prehistoria regional (Siglos V hasta XV). El trabajo expone sobre la importancia de revisar colecciones museográficos, de estudiar no unicamente las historias recientes de recopilación y conservación, sino historias profundas de objetos - contexto original, uso y valor. La procedencia documentada en los registros de adhesión con frecuencia oculta historias ricas de artefactos - su paso por las manos de aquellos que invirtieron en ellos (ya sea a través de su tallado, utilización, comercialización, recopilación o su exhibición) mediante un proceso que a veces cubre extensas distancias culturales y geográficas.

Nous traitons dans cet article des résultats des datations AMS et de l'identification du bois opérées sur trois gravures retrouvées dans les Petites Antilles méridionales (Dominique, Battowia et Trinidad), qui permettent de replacer ces objets dans le contexte chronologique des évènements et des interactions qui se sont déroulés durant la période préhistorique de la région, du V^e au XV^e siècle. Cet article explore l'importance de revoir les collections de musée, d'étudier non seulement les histoires récentes de collection et de conservation, mais aussi l'historique plus approfondi de l'objet, son contexte d'origine, son usage et sa valeur. La provenance visible dans les registres d'accession masque souvent la richesse du legs des artefacts, leur passage dans les mains de ceux qui ont investi en eux, (soit en les fabriquant, en les utilisant, en les échangeant, en les collectionnant ou en les distribuant) dans un processus qui couvre parfois de vastes distances culturelles et géographiques.



Figure 1 Turtle carving/snuff tube, Guaiacum sp., resin inlays, white pigment, AD 1160-1258 (combined resin and wood dates). L: 102 mm; W: 57 mm; H: 33 mm. Catalogue number A34542-0, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, D.C., US.

In 1878, after scrambling 300 feet up a steep mountain slope on the island of Battowia, off the coast of St Vincent, the historian Frederick Ober discovered a small wooden carving (Figure 1):

...I groped among the loose fragments of stone near the mouth [of a cave], where, one of the men told me, an Indian chair had been found some fifteen years before. Carefully displacing the stone chippings, I at last found what seemed to be an image of stone; but scraping with a knife revealed that it was of wood. It was a tortoise, four inches long and two and one-balf broad, curiously carved.... <u>This relic of antiquity</u> was undoubtedly taken by the Caribs from their enemies of Haiti, and brought here by the captor, or it may have belonged to a captive Arowak [sic] living among the Caribs Ober (1880:222; 224)

Ober's last sentence, although written over a century ago and clearly a product of the long-standing Columbian propaganda that polarized the region's cultures along stereotypical extremes of 'war-like Caribs' and 'docile, peaceful Arawaks/Taíno'¹, foreshadowed current investigations into the extent and nature of interaction between the peoples of the Greater and Lesser Antilles (e.g., Hofman *et al.* 2007, 2008; Hofman and Hoogland 2004; Hoogland and Hofman 1993, 1999). To Ober's eyes, the turtle carving was clearly foreign to Battowia – he viewed it as a *zemi (cemt)* that was either raided or belonged to a non-local 'captive'. This attribution was based on his knowledge of comparable material recovered

¹ These general divisions (Carib/Taíno) gloss over a great deal of cultural diversity – many societies and languages are subsumed within these broad titles. The antagonistic history between the two 'groups' was emphasized by early Spanish colonisers, though much for their own purposes, to justify enslavement and expansion. This has, however, long overshadowed the peaceful interactions that undoubtedly also occurred – from exchange, to political alliances to kin relationships binding different island communities together.



Figure 2 Distribution map showing the Dominica duho, Battowia turtle snuff tube and Pitch Lake zoomorphic bench, and featuring style zones for provenance islands contemporary to the artefact periods (the latter redrawn from Hofman et al. 2007: Fig 6, 8-9). NB: other style zones were present during the periods in question, but are not included here for ease of reference.

from the Greater Antilles, specifically the style of the piece and its apparent association with an 'Indian chair' – the latter known to him from *duhos* described in *cronista* accounts and antiquities he had seen from Puerto Rico (Ober 1880:223-224). Yet, at the time, little was known – and to date, is known – about the wood carving styles of the Lesser Antillean region, primarily because so few carvings survived,² hence it is difficult to distinguish what was made locally and what was imported on stylistic attributes alone. How, then, to investigate possible sources – whether local or foreign – for the unusual cache of objects in Battowia, or for the other carvings found in the Lesser Antilles? And how to anchor these chance-finds – void of archaeological context – within circum-Caribbean prehistory so that they can inform on local developments, inter-island connections and/or shared practices within this region?

This paper focuses on three carvings found in the Lesser Antilles: the Battowia turtle, Dominica *duho*, and Pitch Lake (Trinidad) zoomorphic bench (Figure 2; Table 1). It summarizes new AMS radiocarbon and wood identification results, as well as iconographic studies, which together enable assessments of stylistic attribution and chronological placement. Discussion proceeds from a review of the individual pieces to the wider implications for understanding their histories, and through them the histories and interactions of their owners.

Provenance/Institution	Material	OxA	Date BP	Cal AD (68.2%)	Cal AD (95.4%)
Pitch Lake zoomorphic bench, Trinidad Peabody Museum of Anthropology and Archaeology, New Haven145145	Wood (<i>Andira</i> <i>sp</i> .); 54.11mg; terminus	19174	1538 ± 29	437-489 (35%) 530-570 (33.2%)	AD 431-592 (95.4%)
Turtle snuff tube, Battowia St Vincent National Museum of Natural History, Washington A34542-0	Wood (<i>Guaiacum</i> <i>sp</i> .); 2.99mg, terminus	X-2345-50	775 ± 50	1219-1277 (68.2%)	AD 1159-1295 (95.4%)
	Resin (results pending) 2.41mg, terminus	21893	862 ± 28	1161-1216 (68.2%)	AD 1050-1083 (9.9%) AD 1124-1137 (2.4%) AD 1151-1254 (83%)
Dominica Duho, Dominica Economic Botany Collections, Kew, London EBC40669	Wood (<i>Guaiacum</i> <i>sp</i> .), 58.24mg, terminus	17917	556 ± 25	1326-1344 (27.6%) 1394-1416 (40.6%)	AD 1315-1356 (43.5%) AD 1388-1427 (51.9%)

Table 1 AMS radiocarbon and wood ID results for the Pitch Lake zoomorphic bench, Battowia turtle snuff tube and Dominica duho. The Oxford Radiocarbon Accelerator Unit lab numbers (OxA) are provided alongside the sample sizes, the dates BP and calibrations at 68.4% and 95.4%. All dates were calibrated using the IntCal09 dataset (Reimer et al. 2009) and OxCal v4.1.6. The most likely dates are highlighted in bold in the 95.4% confidence column.

² To the small turtle carving can be added 17 other artefacts - a *duho* recovered from a cave on Dominica in 1860, two small zoomorphic ornaments and a small bowl from Guadaloupe (the latter potentially a historic piece), a figural carving and a possible weaving stick from Barbados, and at least 11 wooden artefacts from Pitch Lake (two stools, four paddles, two weaving sticks, two bowls and a mortar (Bennel 2000:11; Boomert 2000:298-99, 307, 336, 399; Boomert and Harris 1984:34; Petitjean Roget 1995; Fewkes 1922:135). This excludes the house posts recovered at the site of Tutu, St Thomas and Port St Charles (Heywoods), Barbados (Bennel 2000:111-112). In contrast, the wooden corpus from the Greater Antilles numbers at least 300 pieces known in museum and select private collections, and potentially thousands from the waterlogged sites of Los Buchillones, Cuba and Manantial de La Aleta, Domincan Republic (Ostapkowicz 1998; Valcárcel Rojas *et al.* 2006; Conrad *et al.* 2001). Undoubtedly, other pieces with provenance to the Lesser Antilles will emerge with time – such as those currently held in private collections.

Project overview and methodologies

The three carvings discussed here form part of the 'Pre-Hispanic Caribbean Sculptural Arts in Wood' project, funded by the Getty Foundation and the British Academy (2007-2010), bringing together 66 wooden artefacts held in widely dispersed museum collections (20 institutions in eight countries). The study focused on older museum specimens selected on the basis of their historical significance, good provenance (to island), wide-ranging distribution (both Greater and Lesser Antilles), and artefact type. This corpus was subjected to AMS ¹⁴C dating, wood identification and select stable isotope analysis to establish firm chronologies, determine material resource utilization and suggest or confirm provenance. The wood identification of the Dominica *duho* was carried out during the course of a previous project supported by the Leverhulme Trust (2004-2006).

As establishing a chronology for each piece was at the core of the project and central to its wider objectives (e.g., exploring stylistic variation within and between islands over time), the ¹⁴C samples were critically targeted to ensure a date closest to the felling of the tree, ideally sampling any remaining sapwood. Where this was not present, the carving was oriented relative to its position in the original bole, and the sample extracted from the extreme outer edge to achieve the same goal. This strategy is especially important for slow-growing woods, which can be several centuries old at the pith as opposed to the sapwood. The approach was further fine-tuned by sampling the resin used in inlays, where evident, which should relate to the object's final stages of manufacture or to periodic refurbishment. In total, 90 dates were obtained for the project. The ultimate aim has been to integrate the results into our current knowledge of Caribbean prehistory, which is largely based on ceramic and stone technologies, and enhance our understanding of how wooden material culture contributed to Caribbean lifeways.

Artefact selections: Pitch Lake zoomorphic bench

Trinidad's Pitch Lake, one of the largest natural deposits of asphalt in the world, has yielded a minimum of 11 wooden artefacts, including a zoomorphic bench (Figure 4)(Boomert 2000:298-99, 336, 399; Boomert and Harris 1984:34-37). It was discovered between 1940 and 1950, when the lake was being dredged commercially, and donated to the Peabody Museum of Natural History in 1952 by W. L. Kallman, director of the Trinidad Lake Asphalt Company (Boomert and Harris 1984:34). Large encrustations of pitch still remain on the legs and underside of the stool, while other areas appear to have been cleaned by a sharp implement. This substantial, low bench, carved with a bulbous, zoomorphic head at the front and a blunt, square 'tail' at the back – suggestive of a canid – differs stylistically from the *duhos* recovered in the rest of the Caribbean islands, including those of the low-backed category to which it has some general parallels. The size, style and iconography has more in keeping with the seats still commonly used in the Orinoco delta and surrounding regions (compare against contemporary zoomorphic examples on figure 3; see discussion).

Samples extracted from the stool for radiocarbon dating yielded the earliest currently known date for a Caribbean seat – AD 431-592 (95.4% confidence)(Figure 5, Table 1). The sample was taken from the outer edge of the left hind leg, as far as possible from the pith area of the carved bole within the limitations of the carving. The wood was previously identified as Mora (*Chlorphora tinctoria*), more commonly known as fustic, in 1953 by



Figure 3 Distribution map of South American zoomorphic stools from the 19th to 20th centuries with general similarities to the prehistoric Trinidad bench (low-back, presence of zoomorphic head, tail, etc.). Stools redrawn from Roth (1924), Saville (1910) and Zerries (1970).

Arthur Koehler of the Department of Forestry, Yale University; however, it has been reidentified here by A. Wiedenhoeft as *Andira* sp. (Figure 6), a slow-growing genus, although this in itself could not account for the age of the piece, especially given the sampling strategy. The pitch is a possible factor, and although all sampling was done away from the large areas of pitch still present on the object, it is probable that the residues were deeply absorbed into the wood. Any date from an object with extensive contamination must have some uncertainty associated with it. With this in mind, the chemical pre-treatment was adjusted accordingly, and subjected to a solvent wash prior to the standard chemistry for radiocarbon dating. In addition, a small sample of pitch removed from the bench was subjected to the same solvent wash as the wood sample and dissolved easily in the chloroform, indicating that the pre-treatment was suitable for removing the pitch from the radio-
carbon sample prior to dating. However, although this treatment should have removed any traces of pitch, we must still be cautious with the date until further studies can be made (a thorough investigation of the pitch contamination issue is the focus of a future project). Experiments on porous substrates deliberately contaminated with bitumen show that residual contamination levels are likely to be <0.2% (or <20 14C years). With these caveats in mind, accepting this early date for the stool would place it in the late Cedrosan Saladoid period (AD 300/400 -600/800), which in fact fits with the date previously proposed by Boomert and Harris (1984:38-39) for the group of artefacts recovered from Pitch Lake.

Battowia turtle snuff tube

Ober's (1880:222, 224) fortuitous discovery yielded not only the remarkable turtle carving (Figure 1) – which he donated to the Smithsonian Institution in 1878 – but also the knowledge that an 'Indian chair' (possibly a *duho*) was previously recovered from the same cave.³ If the turtle carving is anything to go by, this suggests a cache of at least two, if not more, elaborately carved and possibly functionally related artefacts.



Figure 4 Pitch Lake zoomorphic bench, Andira sp., red pigment (?), AD 431-592. L: 572mm; W: 272mm (max); H: 200mm (max). Catalogue number ANT.145145, Peabody Museum of Natural History, New Haven, United States.

The purpose of this finely worked object has been a matter of some debate. Ober called it a *cemi*, or idol, while Fewkes (1907:196) was more tentative: '[w]hether the image was an idol or an amulet is not clearly determined, but the two ventro-dorsal perforations suggest that it was tied to or suspended from some other object, possibly attached to some part of the human head or body or worn as an amulet'. Lovén (1979:591) concurs, noting that early cronistas mentioned the Carib wearing small wooden figures around their necks. Subsequent researchers have accepted the amulet identification (McGinnis 1997:401). However, the emphasis placed on the two perforations – their central location, together with their size and raised position above the turtle's shell – would suggest a function beyond simple suspension holes, which could have been more easily drilled through the neck or back flippers of the carving (most amulets have holes drilled through the sides, so that the carving is viewed in full from the front). The position of the holes suggests a composite

³ See also Hawtayne (1887:198), who mentions the discovery of the chair: 'At Battewia [sic]... there is a large cave in which a wooden seat or stool was discovered, and no doubt other relics might be obtained there'. In his reconnaissance of private collections on the islands in 1912, Jesse W. Fewkes (National Anthropology Archives 4408:59a) noted that 'Mr. Cropper had a *duho* from Battovia [sic] which he gave to [a] gentleman in England', although he could not trace its specific location further (Fewkes 1914:670).



Figure 5 Graphed calibration date (1538 \pm 29) for the Pitch Lake zoomorphic bench.



Figure 6 Transverse section of Guaiacum sanctum (left) and Andira retusa (right). Though wood identification is not definitive at the species level, the species presented here depict some of the characteristic cellular features seen in samples from the three Lesser Antillean artefacts. Images: A. Wiedenhoeft.

snuff tube, used in the Greater Antilles for the inhalation of *cohoba* (a hallucinogenic drug, possibly involving *Anadenanthera peregrina*) – a practice described by the early *cronistas* (Colón 1992:151, 157; Las Casas 1967:II 174; see Newsom and Wing 2004:143 on issues surrounding the genus identification). Further, the distance between the two holes naturally fits the nostrils, the raised position of the holes enabling the placement of the carving sufficiently away from the mouth for ease of use. This likely involved the use of short tubes, bringing the narcotic substance directly into the inner nostrils (Ostapkowicz 1998:130). If the turtle is indeed a composite snuff tube, its presence in the same cave together with a *duho* could suggest that core elements of the standard Greater Antillean '*cohoba* kit' were present – which in turn raises the question of whether they were understood, and potentially utilised, as such in the Lesser Antilles, and if so, by whom (locals or immigrants/emissaries from the northern islands? – see discussion).



Figure 7 Graphs showing calibrated results for Turtle snuff tube wood (775 \pm 50 BP) and resin (862 \pm 28 BP) samples.



Figure 8 Graph showing combined results from resin and wood dates for the Turtle Snuff Tube, at AD 1160-1258 (95.4%). T=2.3 (5% 3.8).

Two small samples were extracted from the snuff tube for AMS ¹⁴C dating: the wood from the outer-most tip of the right front flipper and the resin from a recessed area in the same location. The samples were necessarily very small due to the size of the object and its importance. Although there was sufficient quantity of resin, the wood sample was minute (2.79 mg yielded just 0.44 mg after pre-treatment) and - despite an acceptable yield of 50% C on combustion - had a low AMS target current which gave a higher standard error than usual. In addition, resin is difficult to prepare and treat for dating as it is soluble in many of the chemical pre-treatments that are routinely used; instead, where it remains in good condition, its outer surface can be removed, so that only the inner material is submitted for dating. This was our approach with the resin sample removed from the turtle carving (2.41mg): the outer surface was physically separated from the target material and no chemical treatments were applied. This would give an added level of uncertainty on the results, although both cross reference well, and are almost certainly accurate within their wider ranges. The wood sample, identified here as *Guaiacum* sp. (Figure 6), yielded a calibrated date of AD 1159-1295 (95.4% confidence), while the resin returned a result of AD 1050-1254 (95.4% confidence) (Figure 7; Table 1). Within the latter range, the highest probability is AD 1151-1254 (83%), which overlaps very well with the wood date. The two results can be combined to AD 1160-1258 (Figure 8)($\chi^2 = df=1, T=2.3$ (5% 3.8)). This suggests that the piece was likely carved and inlaid in a single process. Importantly, the date does not inform on its subsequent use history: although carved by the mid-thirteenth century, it may well have been a curated object, a valued heirloom passed down the generations or circulated through exchange networks over the course of its history. The date places its manufacture and use in the Chican Ostionoid period in the Greater Antilles, on the one hand, and the Suazan Troumassoid period and Cayo complex in the Windward Islands, on the other – all roughly contemporaneous at AD 1200 (Petersen *et al.* 2004:28; Rouse 1992:129-131; Boomert 2000:261).

Dominica duho

The Dominica *duho* (Figure 9) entered the Economic Botany Collection at Kew Gardens, London in 1860. That year, John Imray (b. 1811, d. 1880), a doctor and botanist working in Dominica between 1850 and 1870, wrote to Sir. William Hooker, then Director of Kew Gardens, giving a brief account of the *duho*:

I send the carved image, or stool, or whatever it may be. I think I mentioned that it was found by a negro boy in a cave among the woods of Dominica. There were some objects of the same description which unfortunately I was unable to procure. The image is I think of Charaib [sic] workmanship. It is evidently very old. From its weight it is made from some hard wood of this country. I almost think Coubaril [sic] (Imray to Hooker, 9 January 1860, letter on file at Kew, KLDC8823)

Of interest here is the clear reference to the *duho* being found on the island, and the presence of other carved objects 'of the same description', possibly suggesting other *duhos*, in the cave. Although non-committal on the function of the carving, **Imray does refer to it** as a stool, an identification echoed by Sir Augustus Wollaston Franks, eminent curator of Antiquities and Ethnography in the British Museum between 1866-1896, who described the *duho* in one of his private note books (British Museum collections, LS16, ff.1). But at some later point in the object's history, it came to be identified as a metate, and the following label was attached on the underside, above the two hind legs: 'Metatl [sic] or trough



Figure 9 Dominica duho, Guaiacum sp., AD 1315-1427. L: 395mm, W: 154mm, H: 207mm. Catalogue number EBC40669, Economic Botany Collection, Royal Botanic Gardens, Kew, UK.

made of the wood of *Hymenaea Courbaril* L. [sic] Used for rubbing down flour for making cakes. Used by Caribs: of unknown antiquity. Found in a Carib Cave in Dominica'. Its actual function was thus obscured until 2001, when a researcher visited the collections specifically to look at material from Dominica (Honeychurch 2001).

The carving is, in fact, a rare example of the anthropomorphic high-back *duho* style: it joins only seven others known from the entire Caribbean (Ostapkowicz 1998: 188-191; 228-267). Anthropomorphic *duhos* feature a head at the upper end of the high back, with the rest of the body conforming to the shape of the four legged seat: the chest, usually including skeletal imagery, and arms are carved on the upper surface of the backrest, with the legs morphing into the stool's front legs and male genitalia depicted at the front base. The treatment of the design elements within the chest area and the top and back of the head tends to be unique to each piece, although there are strong parallels in the motifs featured within this group. In the Dominica *duho*, the treatment of the central triangular design panel is complex, intriguingly featuring four appendages, each with four digits (suggestive of a creature) and flanked on either side by a series of six parallel lines, depicting the ribs. This stylized treatment is in contrast to the arms, which appear more natural, the flesh bulging around the tightly bound arm bands and creased at the elbows. The head, too, is contoured, with high cheekbones, a fleshy nose, wide open mouth and angled eyes. The combination of a corporeal body with skeletal imagery is a recurring theme in Chican Ostionoid (AD 1200-1500) art, and is paralleled in several other anthropomorphic highbacks, the majority of which are provenanced to the Dominican Republic, suggesting that it may have been a stylistic centre for this type of *duho*. The Dominica *duho* is comparable to the Dominican Republic examples in other ways: this group consistently features large, projecting front feet with protruding ankle bones and large eyes and mouths that tend to



Figure 10 Dominica duho (centre) and two examples of anthropomorphic high-backs from the Dominican Republic (both in private collections), showing head panels and upper body designs. Duhos not to scale. For further details about the two Dominican Republic duhos see Ostapkowicz 1998:245-249.



Figure 11 Graph showing the calibrated results for the Dominica duho (556 \pm 25 BP).

be shallowly carved, as if inlay was not required, or if included, was only an extremely thin sliver of shell or *guanín*. There are, for example, strong parallels between the Dominica and Lluberes (DR) *duhos*, on the one hand, in the complex treatment of the chest panel designs, depiction of the ribs and the triangular cut-outs around the base of the noses, and the Boca de Yuma (DR) *duho*, on the other, in the treatment of the head, each featuring interconnected appendages showing four digits (Figure 10). Stable isotope analysis may be able to suggest a provenance for the wood, potentially linking the *duho* with greater certainty to an island, where it can be cross-referenced with contemporary styles – this awaits further study.

The wood had already been identified by the time the *duho* entered Kew's collections – the transcript of entry on 23 January 1860 notes 'Carved Image of the wood of Hymenaea Courbaril [sic]' (Julia Steel, personal communication 2007). Imray had a deep interest in the local botany and in all likelihood the attribution was made by him, as per his letter to Hooker. However, the wood **has been identified as** *Guaiacum* sp. (Figure 6) in the course of the present research.

The outer left edge of the *duho* was sampled for radiocarbon dating, and the result indicates that the selected timber was felled, and likely carved, in AD 1315-1427 (95.4%)(Figure 11). The dates coincide with the last phase of the Suazan Troumassoid period (ca. AD 1200-1500) in the Lesser Antilles, but given the *duhos* stylistic links to the anthropomorphic examples from the Dominican Republic, it is quite likely a Taíno (Chican Ostionoid – ca. AD 1200-1500) import from the Greater Antilles.

Discussion

Each of the artefacts contributes brief vignettes into the chronologies and lifeways on Trinidad, Battowia and Dominica – as well as further afield. Collectively, they potentially span the fifth to fifteenth centuries - a period of considerable flux within the Lesser Antilles: from the ancestral Saladoids, whose migrations from South America brought unique material culture (including miniature trigoliths, drug-related paraphernalia and low stools), to their descendants who rose to power and affluence in the Greater Antilles, developing these material components in new, vibrant and sophisticated ways. Just as migration and exchange brought these objects, in their nascent form, north into the Greater Antilles after ca. 400 BC, so too did these factors (among others) help to redistribute them, in their more developed form, back into the Lesser Antilles after AD 1100. Through them the social networks underpinning the circulation of valued objects can be explored, including interactions between the Greater and Lesser Antilles, and between the latter and the South American mainland.

Their chronological placement enables insight into the historical transitions that were occurring on the islands at the time that they were made - from shifts in stylistic development to the movement of peoples and/or objects, and the social/political manoeuvring that may have accompanied the latter. At a basic level, the contrast between the two stools charts the transition away from the strong South American influences dominant prior to -AD 600 (seen in the Trinidad bench) to the uniquely local, northern Caribbean stylistic developments seen after ~AD 1100 (e.g., the Dominica duho). Both stools provide a vantage point on the social context and use of stools within the Caribbean region during a period of growing cultural complexity. The snuff tube provides insights into the circulation of *cohoba* related material – and, potentially, the ideas and practices that surrounded it – far from its 'heartland' (Greater Antilles). Tightening the focus enables a more fine-grained picture of these transitions: the *duho* and snuff tube, so diagnostic of Greater Antillean (Chican Ostionoid) iconography and functional categories (cohoba-related paraphernalia; elite high-backed chairs), circulated in the Windwards and Dominica at a time of potentially antagonistic relationships between the two regions after about AD 1300 (Wilson 2007:149; Oliver 2009:167). As late as the sixteenth century there were reports of frequent

Carib attacks on Puerto Rico and neighbouring islands (Wilson 2007:163-164). If warfare and/or raiding did escalate over this period, then the presence of such objects might reflect plunder or attempts at reconciliation and alliance after hostilities. Yet the placement of the *duho* and snuff tube in caves suggests a degree of understanding and connection to these 'exotics' that belies a complete severing with northern custom - which raids imply - while at the same time underscoring their local significance. Other scenarios are also possible: Hofman et al. (2007:262) posit that Lesser Antillean groups were middlemen in the trade of *guanín* and other elite objects between the mainland and the Taíno of the Greater Antilles, and this may go some way to explain the presence of high-status exotics on the islands. There is also the possibility of treasured objects accompanying Taíno migrants travelling south, and this could have been for a myriad of reasons – from marriage exchange, formally linking the long-distance groups to each other, and so facilitating trade and alliances, to refugees during the sixteenth century exodus from the Greater Antilles into allied Lesser Antillean communities in efforts to escape the devastation of wars, slavery and diseases that crippled Hispaniola and Puerto Rico after European contact (Oliver 2009:168; Hofman et al. 2008:28). The emerging possibilities are indeed complex – and a fitting reflection of the multifaceted realities of pre-colonial island life.

Dogs, seats and links to South America pre-AD 600

Assuming that the radiocarbon date is broadly correct, the earliest piece - the Pitch Lake zoomorphic bench (AD 431-592) – falls towards the end of the Saladoid period (ca. 400 BC – AD 600), a time of considerable South American influence in Trinidad, and much of the Caribbean. Between 400 BC and AD 400, a strong stylistic uniformity stretched from north-eastern South American north to Puerto Rico (Allaire 1997:23; Boomert 2003:153; Hofman and Hoogland 2004:49), suggesting "...a common ancestry of intensive and frequent interaction between local groups, both with each other and with the mainland" (de Waal 2006:74). Rouse (1992:84) called this a unifying network of circulating ideas and beliefs diffusing from South America via the circum-Caribbean. By AD 300-500, Barrancoid stylistic influences swept up into the Caribbean region from South America, marking a period of "...unusual dynamism" and establishing a network of trade and communication within the vast area stretching from Trinidad and Tobago to the Orinoco Delta (Boomert 2000:250). On Trinidad, Barrancoid migrants may have intermarried into the long-term Saladoid communities by AD 350 (Boomert 2003; Reid 2009:32)⁴; a gradual merging of these traditions is evident in the Erin complex (post AD 500) that spanned the southern part of the island – in the vicinity of Pitch Lake – and was marked by a 'profound' Barrancoid stylistic influence on the Saladoid (Boomert 2000:239; Allaire 2003:206). This overlaps well with the Pitch Lake bench date: the closest site (Pitch Lake 2) has yielded Saladoid/Barrancoid ceramics, dating to the Palo Seco period (ca. AD 300-650)(Boomert and Harris 1984:41) and the two ceramic lugs recovered from Pitch Lake itself show very strong Barrancoid influence from roughly the same period (Boomert and Harris 1984:39).⁵

⁴ No evidence for independent Barrancoid settlements have been found on Trinidad (Boomert 2003:161)

⁵ It is of course impossible to argue for an association between the two ceramic lugs and the wooden material recovered from the lake given the constant movement of the pitch (Boomert and Harris 1984:39), but it does provide some background to contemporary deposits in the lake.

Within this context of South American influence, and the regular influx of people and objects from the mainland into Trinidad (and the Lesser Antilles) at this time, it is not surprising that the bench shows strong parallels to mainland stools.

The stool's features differ from those of Greater Antillean duhos (Ostapkowicz 1998), the handful of other *duhos* recovered from the Lesser Antilles, as well as from the ethnographic descriptions of stools used by the later Carib/Kalinago (Breton 1998:8; Rochefort 1666:293; Labat 1992:162). In contrast, it has stronger stylistic parallels to examples still in use in north-eastern South America - where large, low, zoomorphic benches are common (e.g., Zerries 1970; Saville 1910; see figure 3). Stools have a long (pre-)history of use among many mainland cultures, as attested by the surviving stone and ceramic examples - among the earliest dating to ca. 2400 BC (e.g., Marcos and Garcia de Manrique 1988:43; McEwan 2001:179) - with later ceramic sculptures showing figures seated on stools (e.g., Rouse and Cruxent 1963:Plate 25-26). They remain among the most diagnostic features of South American material culture. In some origin stories, culture heroes thought the world into being centred on their stools (Roe 1995:52). As such, stools form '...part of a core suite of objects that accompany the creation of human beings from spiritual origins... an essential means of access to the hidden sources of life' (McEwan 2001:181). Given the stool's ubiquitous nature and chronological depth, it is quite likely that earlier examples entered the Caribbean as indispensable, carefully curated personal items or were manufactured on the established South American stylistic prototypes: their styles would continue to develop in subsequent years within the insular Caribbean region, reaching an artistic zenith with the Greater Antillean duho. Although the zoomorphic bench was most likely manufactured in Trinidad, there is a remote possibility that it may have been an import from South America, especially given the mainland's proximity to the island, the strong trade links during this period, and the waves of South American migrants who used the island as a gateway to the rest of the Caribbean archipelago. The distribution of Andira sp. covers both the Caribbean and South America, so wood identification alone cannot contribute to the possible sourcing of the piece, although stable isotopes may be able to provide some insight (these are pending).

Although the bench's basic form suggests South America (see Roth 1924:275), the iconography, featuring a bulbous head with prognathic muzzle, erect, triangular ears, a short tail and a powerful body, is inconclusive as to possible provenance, especially as it lacks two-dimensional designs - though at a very basic level it perhaps suggests a dog or a jaguar (Boomert 2000:298). In this ambiguity, the stool visually encapsulates one of the key transitions made by the early South American migrants - from the faunally rich South American tropical setting, where the jaguar dominated myths and legends, to the more restricted island setting where the largest land animal was the domesticated dog. Some (Rodríguez 1992; Roe 1995) have argued for an explicit link between the two animals, with the dog taking the role of the jaguar on the islands -a 'mythic substitute'. Focusing specifically on the archaeology of the Caribbean reveals deeply rooted and widespread concepts related to the domesticated dog, especially as regards their special treatment, and their depiction in important paraphernalia. Several Saladoid sites from Martinique to as far north as Puerto Rico have yielded dog burials, including 16 at the Morel site, Guadeloupe, where some were buried in squatting positions, as were humans (possibly suggesting symbolic parallels), while others had shell ornaments placed on their bodies (Hofman and Hoogland 2004:49; Rodriguez 1997:85; Mattioni and Bullen 1974). The crania of some of the dogs

were removed, which may again suggest parallels to the custom of removing human crania from burials (Hofman and Hoogland 2004:49). At the same time, dogs feature prominently in the iconography, appearing in ceramic lugs (Mattioni and Bullen 1974:163-164) and large, free-standing ceramic effigies (Roe 1995). A potentially quite early wooden amulet, again from Morel, tentatively attributed to 400-300 BC, appears to feature a dog (Petitjean Roget 1995; Delpuech 2001:57). By the Ostionoid period, the snarling features, prognathic muzzle and triangular ears that characterise Caribbean canine imagery appear in a wide variety of objects, from stone trigoliths, to delicate, shell pendants and pictographs and petroglyphs (Jiménez Vázguez and Fernádez-Milera 2002:83-84; McGinnis 1997; Morban Laucer 1977:3). Dog bones were decorated with designs and canine teeth were used as pendants (Walker 1985; Tanodi in Alegría 1980:435). Seven *duhos*, four of which are lowbacks, appear to feature canine imagery (Ostapkowicz 1998:495-496) – from the Bahamas, Hispaniola, Puerto Rico and Jamaica. In this context, the Pitch Lake carving – bearing the earliest currently known date for a bench featuring zoomorphic (potentially canine) imagery – may be considered an antecedent.

The Battowia snuff tube: turtles, cohoba and 'migrating' objects and meanings in the insular Caribbean post-AD 1000

If the Pitch Lake bench offers a glimpse of the potential circulation of objects and/or ideas between the South American mainland and the Lesser Antilles during the Saladoid period, the Battowia snuff tube hints at the interconnections that linked the Caribbean islands to each other post-AD 1000. By AD 1200, Chican Ostionoid material culture was filtering into the Lesser Antilles - including large trigoliths, duhos and snuff tubes (Rouse 1992:130) - alongside heterogeneous ceramic styles (Boca Chica, Esperanza and Atajadizo/Ostionan/ Caimito) that can be provenanced to specific Greater Antillean regions, suggesting different exchange networks (Hofman and Hoogland 2004:15). Not all such materials were imports: some are thought to have been made locally, suggesting that people were adapting complex Greater Antillean styles into their own repertoires (Allaire 1996:44; Allaire 1990 in Rouse 1992:130 for Martinique; Hatt 1924:35; 39 for Virgin Islands; Hofman and Hoogland 2004:51). In contrast, the local Suazan Troumassoid ceramics were basic – Petersen et al. (2004:29) note that the period was marked by 'among the least finished and crudest Amerindian pottery in the entire West Indies'. Within this context, the snuff tube's complex carving would indicate an import, with its two-dimensional designs strongly suggestive of a northern – possibly Hispaniolan – source. However, little is known about woodcarving in the Lesser Antilles at this time, and it is problematic to infer that the 'crude' work seen in the ceramics applies to other materials. It is hoped that a future stable isotope study will be able to provide information about the wood's source.⁶

There is a dichotomy between the Greater and Lesser Antilles with regard to the scale and complexity of drug-related paraphernalia. Whereas an elaborate set of interdependent *cohoba* objects – vomiting spatulas, snuff tubes, 'canopied' stands – appear to have reached an apogee during the Chican Ostionoid period in the Greater Antilles (ca. AD 1200-1500), if not earlier, these objects are rarely encountered in the Lesser Antilles, and

⁶ The distribution of *Guaiacum* spans much of the Caribbean, and into Venezuela – and is known specifically from St Vincent (Royal Kew Gardens 1893:241), so the provenance of the piece cannot be determined through wood ID alone.

are often viewed as imports, or imitations, when they are (e.g., Hofman et al. 2007:258). McGinnis (1997:227), for example, documented 207 cohoba-related artefacts from the entire Caribbean region,⁷ of which only seven were provenanced to the Lesser Antilles in her study. In contrast, the Lesser Antilles yield a wider distribution of so-called inhaling bowls - 31 ceramic examples are known from eight Windward and two Leeward islands, with 29 from Vieques and Puerto Rico (Fitzpatrick et al. 2009:598, 600; Kaye 2001:200). Fitzpatrick et al. (2009:599) suggest that the inhaling bowls have the longest temporal range of any drug-related artefact in the Antilles, spanning 500/400 BC to European contact, but the majority of these bowls with a clear archaeological context date to the Saladoid period, as do three bowls recovered from Carriacou, dated prior to AD 400 via thermoluminescence (Fitzpatrick et al. 2009:602, 605). However, one of the Carriacou bowls was found in deposits dating to AD 1000-1200, and the other two pre-date the first settlement of Carriacou at ca. AD 400, suggesting perhaps that the bowls were heirlooms passed down the generations (Fitzpatrick et al. 2009:604, 605). If such bowls were indeed utilized well into the late pre-colonial period, as is also suggested by examples from Vieques (Narganes Storde in Kaye 1999) and St Lucia (Peter Harris in Fitzpatrick et al. 2009:599), then their use would be contemporary with the *cohoba* material seen in the Greater Antilles, and may suggest a material culture associated with an alternative drug - perhaps for the ingestion of special liquids such as pouring tobacco or pepper juice into the nostrils (Boomert 2003:153; Rodríguez 1997:86).8 The deposit of these two seemingly separate artefact categories is also quite distinct: *cohoba* material tends to be carefully placed in caves, while bowls are found in middens, frequently broken (Fitzpatrick et al. 2009:598). Interestingly, the early cronista references do not mention the use of inhalation bowls (Kaye 1999:59), in stark contrast to the prominent description of *cohoba* paraphernalia. As the distribution of the inhalation bowls stretches predominantly from Puerto Rico south to Trinidad, possibly suggesting a different drug ritual occurring in the Lesser Antilles, it begs the question of what cohoba paraphernalia was doing in circulation as far south as Battowia. Did such objects actually maintain their ceremonial function in the south, or did they take on a different meaning?

Although we cannot discount the fact that hallucinogens could have been taken with relatively simple equipment – such as bird-bone snuff tubes (Oliver 2009:14) – based on the few artefacts that have been found *in situ*, the appearance of specific and diagnostic *cohoba*-related paraphernalia in the Lesser Antilles appears to be a relatively late phenomenon, coinciding with the elaboration of the material culture in the Greater Antilles. Perhaps not surprisingly, the distribution of vomiting spatulas and snuff tubes appears predominantly in the Leewards, islands closer to the stylistic 'hubs' of Puerto Rico and Hispaniola, and occurs after ~AD 900 (Figure 12)(Douglas 1991:579; Drewett 2000:

⁷ Including vomiting spatulas, snuff tubes, *duhos* and drug tables, but excluding 308 pestles – the latter would bring the grand total of 'ceremonial artefacts' in McGiness' tally to 515, and which would raise the total for the Lesser Antilles – if included – to 29. We have excluded pestles here as they are not clearly linked to cohoba/drug taking in the ethnohistoric literature – although it is acknowledged that, due to their ornate nature, they may have served some ceremonial functions.

⁸ The differences between *cohoba* snuff tubes and inhaling bowls are significant, suggesting that they were receptacles/conduits for different materials. Inhalation bowls are consistently small, relatively deep vessels with the perforations high on the side of the bowl, often close to the rim, suggesting that the contents were in liquid form (see, for example, Ortega and Pina 1972). Snuff tubes, as described by the *cronistas* and as is clear from the long tubes of the surviving examples, were used for powders: *cohoba* – as we understand it from the *cronista* documents – is a powder, not a liquid.



fig 67; Hatt 1924:35, Fig 9a; Hofman and Hoogland 2004:51; Hoogland and Hofman 1993:174-5, 177, 1999:108). The rarity of these objects suggests that their exchange was not intensive, but rather intermittent (Wilson 2007:151) – they were scarce and prized valuables that likely had significance well beyond their functional (and mnemonic) links to the *cohoba* ceremony.

The ways in which these objects were circulated would impact on whether any associated symbolism was also transferred – if by exchange perhaps some of the original meaning may have been adopted as well, as appears to have been the case for important *cemis* Figure 12 (left page) Distribution of cohoba related material culture in the Lesser Antilles, after ~AD 900. Selected artefacts (clockwise, left to right): Anthropomorphic bone vomiting spatula (National Museum of the American Indian, 061374) and shell bird vomiting spatula (National Museum of Denmark, 0.1.161), both St Thomas; Shell vomiting spatula, Tortula (Virgin Islands Folk Museum; Drewett pers. com. 2010; Drewett 2000:Fig. 67) shark-shaped manatee bifurcated snuff tube (Douglas 1991:579, Fig. 5); composite manatee bone snuff tube in the shape of a fish, Saba (Faculty of Archaeology, Leiden University; Hofman pers. com. 2010); composite steatite snuff tube in the shape of a dog's head, Barbuda (Jay I. Kislak Foundation, Library of Congress, PC 0106; Olsen 1974: fig 30); Zoomorphic bone vomiting spatula reportedly found on Nevis (Wilson pers. com. 2010); Skull vomiting spatula, Martinique (Musee Quai Branly, 71.1939.41.190; Delpuech pers. com. 2010); Turtle composite snuff tube (National Museum of Natural History, A34542-0).

exchanged in the Greater Antilles (Oliver 2009). With specific reference to the turtle snuff tube - given the economic importance of the turtle across the Caribbean, the imagery would certainly have been widely understood - but whether specific information about the object's meaning (its provenance and any accrued history) was transferred is difficult to determine. For example, it is clear from the fifteenth century myths recorded by Ramón Pané in Hispaniola's Magua cacicazgo that the turtle had a deep local symbolism linked to the cultural origins of cohoba - and, indeed, humanity: the culture hero Deminán was hit on his back with guanguayo - a substance filled with cohoba - which gestated in his body, growing larger and transforming into a female turtle (showing clear parallels to pregnancy). After she was cut from his body (birth), Deminán and his brothers had sexual congress with her, and from her body the first humans emerged into the world, who themselves ingested cohoba. In the composite Battowia snuff tube – possibly sourced from Hispaniola – the turtle body becomes the central conduit through which the drug passes, and through which communication with the numinous is achieved, potentially evoking a circular *cohoba*/turtle/human/numinous symbolism. Intriguingly, the snuff tubes emerge from the back of the turtle, mimicking the position of the guanguayo on Deminán's back and eluding to the origin of the female ancestress - again in a layering of possible meaning. It is possible that these links may have been understood by Hispaniolan communities, and, as is prevalent in myths, may have had a deeply rooted connection that went back generations. But as fitting as this symbolism is, it is difficult to know whether the Magua myth reflected a wider, pan-Caribbean belief system, and had a more 'universal' symbolism that was understood by cultures in the Lesser Antilles: given the cultural diversity of the region, this is unlikely (but see Boomert 2000:460; 473). Looking to neighbouring islands, an ornate ceramic inhaling bowl in the shape of a turtle recovered from Vieques and dating to pre-AD 425, offers some comparison – both in the sense that it depicts a turtle and is likely a drug-related object (Chanlatte Baik 1984:30-31; Fitzpatrick et al. 2009:Fig 3c) - as does a naturalistic example from Barbados (Fitzpatrick et al. 2009:Figure 3f). Saladoid turtle adornos and effigy bowls are fairly common, spanning the region from Trinidad to Puerto Rico (Boomert 2000:473). Turning to St Vincent specifically, the pervasiveness of turtle imagery during the Saladoid period (Moravetz 2007:80) alongside the prevalence of drug-related material culture at this time (Rodriguez 1997) may offer tenuous support. Moravetz (2005:56-57) notes that more than half of all Saladoid adornos from St Vincent exhibit turtle iconography, and posits that these may have been symbolically linked to Saladoid origin myths and beliefs in an afterlife, among other aspects. As the Saladoid migrations swept through the Lesser into the Greater Antilles, it may be that there is some significance to the depiction

of the turtle that was maintained and developed over the centuries based on this shared ancestry, with a resonance that spanned space and time.

In terms of timescale, the turtle snuff tube suggests a post-AD 1150 phase of interaction between the Greater Antilles and the Windwards. Interestingly, this may coincide with a period of growing unrest: Wilson (2007:149; 2006) has suggested that a buffer zone developed after AD 1300 in the Leeward islands due to the antagonism between these two regions. If the turtle snuff tube was exported shortly after it was made, then this provides the first firm date for elaborate cohoba-related paraphernalia as far as the Windward islands, and shortly before the unrest may have flared up. Alternatively, the carving may have been used in the Greater Antilles for decades, if not centuries, prior to it 'migrating' south, whether as war plunder or through peace treaty (see also Oliver 2009:167 for comparable argument for *guíazas* and large trigoliths), or various other possibilities (marriage, alliance, etc.). And who was using this object? Was its use adopted by the new owner – perhaps a Carib/Kalinago? Or, if it had a deeper history in the region, was it associated with cultures that preceded the emergence of Carib? These issues were raised over a century ago by Fewkes (1907:197) when he discussed the turtle carving, noting "...this object may be associated with Carib people, who were the last native people to inhabit the Lesser Antilles, but it may have been made by an antecedent race which these people replaced". Although recent research has emphasized that the picture may not be so clear cut (i.e., the 'Carib' may well be descendants of earlier prehistoric island populations - Allaire 1997:181), it touches on the point of who was using these objects, how they came to be acquired, and what was understood about them, and their use. This underscores the composite nature of these objects – how their accrued histories may have spanned not only generations, but also vast distances, turbulent times and different meanings.

Caches, Taíno duhos and Carib benches: the local context of meaning

The Battowia snuff tube, together with the Dominica duho, suggest that the practice of caching important objects in caves was not a phenomenon isolated to the Greater Antilles - where the majority of *cohoba* material has been recovered in caves. Other caches of large, complex objects are known from the Lesser Antilles – such as a group of 'cotton idols in human form' found in a cave on Martinique (Du Tertre 1667:369-370). The local Carib/ Kalinago understood these to be the "Gods of the Ygneris, whom they massacred", and refused to remove them from the cave despite the keen interest of the Europeans to have them as curios (they were eventually taken in secret and shipped to Europe – Du Tertre 1667:369-370; Ostapkowicz and Newsom in prep). The fact that the Carib were respectful of these objects is intriguing here: indeed, it is understood that the Carib used such cotton figures as 'oracles' (Du Terte 1667:369; Rochefort 1666:280), perhaps a vestige of ceremonies conducted by the preceding Suazan Troumassoid cultures, among whom the Carib may have settled (as opposed to 'massacred')(Allaire 1997:181; Hoff 1995:46). Alternatively, the long standing links between the southern archipelago and the South American mainland post-AD 1000 - with exchange, interaction and movement between the two regions - suggests a degree of cultural synthesis from which a new cultural identity - the Carib - may have emerged (Wilson 2007:148; Allaire 1997:181), one that integrated established island cultural practices. Equally, these could be remnants of practices that went back centuries – perhaps to the Saladoid migrations, and were local developments that gestated over time: the clear parallels to the use of cotton *cemi* oracles on the Greater Antilles (Martyr D'Anghera 1970:167) is suggestive of the latter. This hints at the difficulties in trying to trace the meaning of objects through the passage of time, and through different cultural 'hands' and contexts. It also underscores the fact that there were certain object categories that had a far reaching import and widely understood ceremonial value, and that despite the distances they travelled, their meaning transcended cultural and linguistic boundaries. Such was likely the case with the Dominica *duho*.

The Dominica duho - a chair likely sourced from Hispaniola – was, in essence, not an item so 'foreign' to the cultures of the Lesser Antilles: given the presence of stools in the southern islands by at least AD 400 (discussed above), it is quite likely that stools were familiar household objects in the region. Certainly, by the seventeenth century, when detailed ethnographies of the Carib of St Vincent, Martinique, Dominica and Guadeloupe were written, these were common items, and their use appears to parallel, to a degree, the use of *duhos* in the Greater Antilles, and stools in the wider South America region. For example, Adrien le Breton (b. 1662, d. 1736) worked as a missionary in St Vincent between 1693 and 1702 (Divonne in Breton 1998), and wrote of some of the customs he witnessed, noting the importance of seats when visitors first arrived at the village:

They have nothing more at heart than to give a perfect welcome to the newly arrived. One or two individuals are chosen by the elders in each village... to fulfil the task of guiding the guests from their canoe to the place destined for their reception. When the latter have arrived, their guide arranges the seats properly and signals to them that they should rest, tired as they are after their journey (Breton 1998:7)

The wooden seats brought out for their reception are described as being one or two feet long and

... about six fingers thick and wide.... The upper part is also curved on both sides towards the center and the lower part, divided into four and hollowed out, either for stability (the four feet) or to be more easily transported from one place to another, through lightening this mass of wood. This is certainly what is said among the Karaÿbes and turns out to be their typical seat. So that indeed for this reason you would say they were lying on the ground rather than sitting. (Breton 1998:8)

Once the guests are seated, they take their refreshment and are formally greeted (Breton 1998:25). This seems an important protocol, as it was in the Greater Antilles when visiting Spanish were invited to sit on gold-encrusted *duhos* brought out specifically for their comfort (Las Casas 1951:I 287). It also appears as common hospitality among many South American cultures.

Another parallel to Greater Antillean stools is noted by Charles de Rochefort (1666:293), who briefly discussed how the '*Caribbians*' had "...little Stools or Chairs made all of a piece, of a red or yellow Wood, and as smooth as Marble". Such stools – or *halaheu* (de Rochefort 1666:unnumbered dictionary) – were interred in burials: "Theymake their Graves... about four or five foot deep, and round like a Tun: and at the bottom of it, they set a little stool, on which the Relations and Friends of the deceased place the body sitting, leaving it in the same posture as they put it in immediately after the death of the party". Such a burial is also described by Oviedo (1992:119) as an honour paid to an important cacique in the Dominican Republic, and also parallels South American practice (e.g., Lothrop 1970:Figure 31; Saville 1910:II 110; Lovén 1979:133). Indeed, many of these aspects may have their foundation in mainland etiquette and custom.

If there were certain parallels between the Greater and Lesser Antilles in the use of chairs, what of the styles? How did the Dominica *duho* – which shows strong parallels to other anthropomorphic high-backs from the Dominican Republic (Figure 10) – conform to the chair styles in the Lesser Antilles? Turning to the ethnographies, no references are made to stools carved in anthropomorphic or zoomorphic shapes - unlike the Greater Antilles. Nor is there reference to inlay, or indeed, much in the way of detailed carving - again, unlike the *cronista* documentation from Hispaniola and Cuba, and the extant corpus of ca. 150 duhos known from the entire Caribbean (Ostapkowicz 1998). An undecorated, high-backed seat was found in Pitch Lake (Boomert 2000:297-300), so the category was present in the region, although its chronological placement - and whether local or an import – must await more detailed study. Judging by the brief ethnographic descriptions, perhaps a more common category – at least in the colonial period – appears to be the lowbacked seat of relatively simple construction (e.g., Breton 1998:8, noted above). The Jesuit priest Jean Baptiste Labat (b. 1663, d. 1738), who worked in the French Antilles between 1694 and 1705 (Hulme and Whitehead 1992:155) mentions the use of "...a small stool, made of a single piece of wood, fashioned a little like a chocolate bicorn hat" in Dominica (Hulme and Whitehead 1992:162). These hats, semicircular or triangular in shape with the brim pinned up to the crown at both front and back, do not readily lend themselves to a clear understanding of the stool's form (i.e., was the long base used as the sitting surface or the stool's base/feet? - both styles are known from South America?).

An illustration in Sieur de la Borde's 1674 Relation des Caraïbes sauvages des Isles Antilles de l'Amérique may provide a glimpse of what these stools looked like: a concave, rectangular seating surface and co-joined legs (Figure 13). It is identified in the volume as a *matoutou* – a low table – although its general shape is suggestive of a seat: the elongated lower base and smaller seating surface do fit Breton's description of a stool, with the upper part "...curved on both sides towards the center". De la Borde (1674:18) clearly notes that the matoutou is made of "Bresil [sic] wood, or of one piece of bois de letre ["letter wood", Brosimum guianense], serving as a table and sometimes used as a seat, fifteen inches in length and four to five inches wide and six inches high" (emphasis ours) but that matoutou is also the term for a table made of "reeds one or two feet square and half a foot high" (De la Borde 1674:13). His description clearly distinguishes between these objects, from the material they were made from to their size and shape, but his use of one term for both confuses the issue: other writers noted that the 'Carib' term for a stool was *halaheu* (Rochefort 1666:unnumbered).⁹ The shape and style of the 'table/stool' in the accompanying illustration is reminiscent of chairs found among several South American lowland (especially Guyana) groups (Figure 14; Gillin 1963:833), while contrasting with the typical mainland Carib basketry tables (Roth 1924:316), and the basketry tables noted by the other early ethnographers among the Island Carib.¹⁰ The anonymous artist whose work appears in de la Borde was commissioned by the editor, and he apparently took care "...to reside a long time amongst them, and understand their language extremely well" (Hulme and Whitehead 1992:139). If we

⁹ Rochefort (1666:298) is clear to separate the two terms, only using matoutou for the table: "...they commonly eat sitting on low stools, and every one hath his little table by himself, which they call *Moutoutou*...".

¹⁰ Labat (1931:77), for example, notes that the table from which the Carib/*Kalinago* ate their meals "...is a basket with a flat bottom and no cover. Four sticks in the corners project some four or five inches and are the legs of the table when the basket is turned upside down. The basket is so closely woven it will hold water." Similarly, Rochefort (1666:293; see also 306) notes that "there are also some among them who have little Tables, which have four wooden Pillars, and those cover'd with the leaves of that kind of Palm which is called *Latanier*".



Figure 13 Illustration from Sieur de la Borde's (1674) Relation des Caraïbes sauvages des Isles Antilles de l'Amérique, showing a wooden 'matoutou' (table) – but likely a seat. In Recueil de divers voyages faits en Afrique et en l'Amerique, qui n'ont point este encore publiez, Paris. Courtesy, The Bodleian Libraries, University of Oxford, AA 41 Art, p. 20, figure 6.

can confirm that the artist was actually working in the Lesser Antilles (and not a neighbouring South American mainland group), then there are some grounds to argue that the image represents a local style. Further, given the degree of interconnections between the southern archipelago and South America post-AD 1200 (Hofman *et al.* 2007:256-258), this style may have been relatively common, with a long (pre)history of use.

It is clear from these references that stools were also important components of Carib material culture, and vital to social conventions of hospitality. Whereas in the Greater Antilles elaborate *duhos* appear as elite accoutrements reserved for occasions of socio-political ceremony and/or sacred rituals in which drugs were imbibed to fuel communication with the numinous, simpler Lesser Antillean stools appear to have functioned predominantly in the day to day sphere, as a resting place during meals and events. This has closer parallels to the use of most South American stools. Further, although the ethnographic studies (Breton, Rochefort, Labat) were done well into the historic period – a time of rapid change and acculturation – they are still likely to echo older cultural practices. In this context, although the elaborate *duho* may have differed stylistically from local examples, it likely conformed to local protocols of use as well as linked the sitter to chiefdoms far to the north, underscoring their involvement in long-distance interactions (see also Helms 1988). One possible



Figure 14 Distribution map of South American low-backed stools from the 19th to 20th centuries with general similarities to the Carib/Kalinago stool (?) illustrated in Sieur de la Borde's (1674) Relation des Caraïbes sauvages des Isles Antilles de l'Amerique. Stools redrawn from Roth (1924), Saville (1910) and Zerries (1970).

scenario for its presence on the island is an elite gift exchange: comparable exchanges, such as the 14 *duhos* Anacaona presented to Bartolome Colon in 1496/97 (Las Casas 1951:I 447), suggest that the *duho* may have been a politically binding gift between allies.

What further hinders our understanding of the importance of these seats in the region is the fact that to date, only five examples – including the Dominica *duho* and Pitch Lake zoomorphic bench – have been attributed to the whole of the Lesser Antilles (Boomert 2002; Fewkes 1922:89; Honeychurch 2001; Lovén 1979:130; McGinnis 1997a: Table 14ac; Newson 1976:59; Ostapkowicz 1998:189),¹¹ a surprisingly low number given the seventeenth and eighteenth century references suggesting that stools were fairly common in the region (Rochefort 1666:293; Labat in Hulme and Whitehead 1992:159), and their likely importance pre-colonially. Perhaps the fact that they were everyday objects meant that they were not secreted away in caves, and hence few survived. The relative simplicity of the two recovered from Pitch Lake, Trinidad (including a high-back) is notable in comparison to the more elaborate examples from the Greater Antilles – although some of this may be due to their chronological separation (this should not be taken to imply that simpler objects are earlier in time). Late seventeenth century ethnographic accounts, although fairly terse in their descriptions of the 'little stools', do suggest that they were 'polished like marble'. Until a more detailed review of the extant pieces is undertaken – including a thorough investigation of any early museum pieces with uncertain provenance – there is little further that can be posited on the variety and distinctive stylistic traits of seats in this region.

Concluding remarks

As much as people are in a constant state of flux, so... artefacts, as material cultures, are also ever changing, with the ability to reinforce, reinvent and renegotiate social relationships between people... (Hurcombe 2007:103)

It should not be surprising that this small corpus of just three objects can provide such a complex picture of human agency, weaving together issues of long distance links and local and regional meanings (whether based on the materials used to make them, the meanings ascribed to them when exchanged, their roles and meanings during use or the significance of their deposition). Each embodies its own unique history, linked to individuals who safeguarded them over the duration of their 'life' - from the hands that created them to those that finally deposited them in a cave or 'lake'. They have great potential for insight into a myriad of interconnections - not only across the distances some may have travelled - but across functional categories: they appear to have performed on a number of levels, potentially spanning everything from the socio-political through to the economic and esoteric, and indeed may have meant different things to different people when they were exchanged. The Dominica duho, for example, may have performed in a political 'event' where visiting dignitaries would be formally welcomed, or a drug imbibing ceremony, or indeed, a humble domestic context: the object transcended these realms as a multifunctional, and hence multivocal, creation, with different layers of meaning - whether it be in its original setting (Dominican Republic) or its subsequent context (Dominica). Stools appear to have had a wide variety of settings and uses throughout the circum-Caribbean, their meaning dependent in some respects on social etiquette or political manoeuvring. Even an object intimately involved in the ingestion of narcotics, and so linked with communication with numinous sources - such as the Battowia snuff tube - likely had a significance beyond its very specific function when exchanged, possibly linking the new owner to allies or family on the larger islands to the north, and thereby reflecting their status while building a fresh legacy of connections. It is difficult to ascertain whether the meanings of these objects, and

¹¹ These are: a zoomorphic low back and a simple, small high back stool from Pitch Lake, Trinidad, the anthropomorphic stone Guesde *Duho* – which may or may not be from Guadeloupe – the Dominica *duho* and a reference to a *duho* being recovered from Battowia, and eventually making its way into a private collection in England (Fewkes NAA 4408:59a).

their associated genealogies, were relayed when they were traded, but the fact that some may have been exchanged suggests an undercurrent of shared concepts and/or syncretism. Equally, they may well have served the same owner throughout the duration of their uselives, 'migrating' with them to new territories and allies. Here, their histories would have been known and recounted, while acquiring a new significance in a new context.

All three reflect a complex period within the Lesser Antilles, from the Saladoid migrants who ushered in objects and practices that became standard, to a degree, across much of the archipelago (trigoliths, drug paraphernalia, etc.), to a dynamic pre-colonial period of inter-island connections that brought people together across local and regional boundaries. Through the AMS dating of the pieces, these objects have been interwoven back into the histories and chronologies of the regions where they were found (but not necessarily made), so that we can begin to explore their significance – not least to the links that their exchange may have created. The more our understanding of the archaeology of these islands expands – to isolate periods of conflict, peace, migration, interaction or trade – the more these objects are able to reflect connections between people. Equally, the more we learn about these objects, the more their 'residues of meaning' can inform on people's needs, capabilities and aspirations (Hurcombe 2007:3).

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MUCH TO CHOOSE FROM

The use and distribution of siliceous stone in the Lesser Antilles

Sebastiaan Knippenberg

Fine-grained siliceous stone, one of the basic raw materials for the manufacture of tools during the pre-Columbian Age in the Caribbean, has multiple sources in the Lesser Antilles. Despite these many occurrences, the Amerindians made selective usage of these localities. Some were preferred over others, and only a few were significant on a regional scale. Data from different Ceramic Age habitation sites show that these fine-grained rock materials were obtained by different means. The bulk of material was collected through direct procurement to the sources. Inter-island exchange with multiple communities, however, formed another recurrent means throughout all phases by which the remainder was acquired.

Las rocas silíceas de grano fino, una de las materias primas empleadas para la manufactura de herramientas durante el periodo precolombino del Caribe, tienen múltiples fuentes en las Antillas Menores. Independientemente de sus muchas ocurrencias geológicas, los amerindios seleccionaron diferencialmente algunas de estas fuentes. Unas fuentes eran preferidas sobre otras y sólo algunas de ellas fueron significativas a escala regional. Datos obtenidos de sitios habitacionales de la Edad Cerámica muestran que estas rocas de grano fino fueron obtenidas a través de diversos mecanismos. La gran mayoría del material fue obtenida mediante la búsqueda directa en las fuentes. Empero, el intercambio entre múltiples comunidades de diversas islas fue otro mecanismo recurrente empleado para la obtención del resto de dichos materiales.

Dans la Caraïbe, il existe de multiples sources de roche siliceuse à grain fin, une des matières premières principales dans la fabrication des outils durant la période précolombienne. En dépit, de cette grande fréquence, les Amérindiens faisaient un usage sélectif de ces gîtes. Certains étaient préférés à d'autres, et seul un petit nombre avait une importance à l'échelle régionale. Des données issues de différents sites d'habitation de la période céramique montrent que ces matériaux de roche étaient obtenus selon des manières différentes. La plupart des matériaux était collectée directement sur les gîtes. Cependant, le commerce inter-îles avec de multiples communautés constituait un autre moyen récurrent durant toutes les phases de l'âge céramique d'acquérir le reliquat.

Introduction

For many years it is well agreed among Caribbean Archaeologists that the ocean dividing the different Antillean islands did not form a barrier for inter-island transport and human interaction (Watters and Rouse 1989). Some papers in this volume highlight this point by presenting evidence supporting the existence of inter-island interaction and regional social networks (Hofman and Hoogland, this volume; Mol, this volume; Laffoon and De Vos, this volume; Rodríguez Ramos, this volume). Studying rock materials and reconstructing behaviour around stone tool manufacture have proven to be very productive with respect to this topic. Through the mapping of region wide stone artefact distributions and by unravelling the mechanisms by which these were spread, this type of research can provide insight on inter-island transport of materials, and it may define whether that occurred by direct procurement strategies, local inter-community exchange, or long distance exchange networks, as my work and that of many others elsewhere around the world have shown (Knippenberg 2006; see for example Torrence 1986).

The Lesser Antilles and many other small island archipelagos form an excellent stage for this kind of research (Knippenberg 2006; see for example in the Pacific Weisler and Kirch 1996). The main reason relates to the existence of very localized sources within these island settings, often having unique characteristics. In the Lesser Antilles this uniqueness is mainly attributed to the variation in geological build-up, providing cases of neighbouring islands with very distinct signatures, which is of crucial importance to pinpointing source areas (Knippenberg 2006; Wadge 1994). To this can be added that good quality rock sources are generally the first to be discovered, as in prehistory stone tools formed a crucial part of every day life. Given their durable nature and often extensive availability at outcrops, stone occurrences remain very stable resources throughout long eras of human occupation (see for example Metzler 2009:225-6). Finally, it should be realized that stone tool manufacture is a subtractive process, and that generally the different steps in the manufacture of lithic utensils can leave distinct residues in the archaeological record, in all due to the good preservation of stone artefacts and the salient typological, technological and functional features they posses (Andrewski 1998; Torrence 1986). Combining all of these characteristics provides us, archaeologists, with data regarding a broad array of human behaviour including the localities from where the Amerindians collected their raw materials, the places where they worked their materials and used their tools, and the purposes for which these tools had been utilized.

The study of siliceous stone is in this respect one of the most productive lines of research in the Antilles. These fine-grained materials were commonly used by the Amerindians for the production of flake tools, which were intended to fulfil a whole range of functions. Since settlement sites form the primary locations for making these tools, siliceous stone artefacts are often found in vast quantities during archaeological excavations thereby permitting sound statistical comparison (Crock and Bartone 1998; De Mille 1996, 2001; Knippenberg 2006; Rodríguez Ramos 2001).

Siliceous stone

This paper provides an overview of the types of siliceous stone used, the locations of their sources, and their prehistoric distribution patterns among the different islands in the Lesser Antilles archipelago (see Figure 1). It is restricted to the Ceramic Age only and it can be seen as a more elaborate overview of past and ongoing research regarding siliceous stone sources (see Knippenberg 2006).¹

Before I go into detail on the actual sources and their exploitation, let me start by explaining what I mean by the term siliceous stone. Under this general term I group all cryptocrystalline rock, made up almost exclusively by quartz. American geologists often use the general term chert to refer to these types of rocks (Leudkte 1992). This is a somewhat restricted use of the term siliceous stone, since it may also include macro-crystalline varieties of quartz (Bates and Jackson 1984).

Cryptocrystalline siliceous rocks have in common that they are hard, fine-grained, and often very homogeneous. Furthermore they produce a conchoidal fracture when working it. These features make them excellent candidates as raw material for tool manufacture, since they behave in a predictable manner during reduction, and the manufactured tools are durable and posses sharp edges.

Fine-grained siliceous stones can be formed in a whole variety of geological settings (Leudkte 1992). For the Lesser Antilles a distinction between biogenic cherts on the one hand and non-biogenic cherts on the other hand is very useful and instructive. Under the former all cherts are grouped, in which the silica is derived from marine organisms, hence they are found in sedimentary settings. This may be in pelagic (deep marine ocean) deposits, where for example radiolarian cherts are often found, or in more shallow sedimentary formations, of which nodular flint formed in limestone is a well-known example.

In the other group of cherts the silica is derived from silica bearing rock. In the Lesser Antilles this primarily is igneous rock. Chert may be formed in veins within igneous rock as a result of the precipitation of silica rich fluids during hydrothermal alteration (Bérard and Vernet 1997). Generally jasper is formed in this way. Silica may also fill up cavities in igneous rock in case of chalcedony or agates. Silicified or petrified wood is formed when tree trunks became covered by silica rich sediments and the silica impregnated the wood and preserved the original structure (e.g. Schumann 2001)

Sources

The past years I have been working on the mapping of siliceous stone sources on the different Lesser Antilles and gradually a more complete overview of the presence of this group of rocks is becoming available within the region. Sources of siliceous stone are not present on each island in the Lesser Antilles. As would be expected most sources occur on one of the composite islands, these are the islands of the Lesser Antilles outer arc, build up by both igneous, non-carbonate and carbonate sedimentary formations (Knippenberg 2006). The islands of Antigua, St. Barth, St. Martin are good examples. These islands possess a more variable geological build-up than the exclusive volcanic or limestone Antilles. They generally host both igneous rock, as well as extensive non-carbonate and carbonate sedimentary formations. Still, on some of the volcanic islands you may find siliceous cryptocrystalline

¹ In my PhD dissertation (Knippenberg 2006) I focussed on a more restricted group of siliceous stones sources, which macroscopically exhibit considerable overlap in appearance.

rock as well. These are generally associated with the oldest igneous rock formations in the region, exclusively present on most of the Windward islands, where island-arc volcanism never shifted its position (Wadge 1994). The more pure limestone Antilles, including Anguilla, Barbuda, Grande-Terre, and Marie-Galante lack siliceous stone. Even flints have never been found on one of these Antilles, despite considerable efforts to locate them. This lack of flint primarily relates to the types of limestone present on these islands, which generally are of a high-energetic nature (e.g. coral limestone), whereas flint bearing limestone is deposited in a low energetic setting (Zijlstra 1995).

So far flint is only known to occur on two islands. The most important and extensive occurrences are found within the limestone formation on the composite island of Antigua, where multiple outcrops and secondary sources have been mapped (Knippenberg 2006).



Figure 1 Sources of siliceous stone in the Lesser Antilles.

The other flint occurrence has recently been found by Christian Stouvenot, who found rare flint nodules in a dark coloured limestone on St. Barths (Stouvenot, personal communication 2009). Its quality is poor and limited archaeological work on St. Barths does not allow for a proper evaluation on its prehistoric usage yet. A third island where secondary occurrences of flint are reported is St. Kitts. These occurrences are likely artificial and the result of Historic Age ballast droppings (see Knippenberg 2006). Therefore they are left out of this presented list.

Other sedimentary siliceous stone varieties can be found in different places. Most extensive occurrences are on Antigua as well, where bedded cherts inter-layered with tuffs are present (Knippenberg 2006; Martin-Kaye 1959; Weiss 1992). But also La Désirade and some of the Virgin Islands host sedimentary cherts (Alminas *et al.* 1994; Bouysse *et al.* 1983; Donnelly 1966). On these latter islands it relates to deep marine radiolarian cherts.

Jasper and chalcedony can be found in different places as well. Most extensive jasper occurrences are known on Martinique and have recently been found on St. Lucia (Bérard and Vernet 1997; Knippenberg 2009). Other more limited jasper sources have been located on Carriacou, one of the most southern Grenadines (personal observation 2009), Terre de Bas of les Saintes (Christian Stouvenot, personal communication 2009) and on St. Martin (Christman 1953).

Work by Benoit Bérard and colleagues on Martinique have revealed three important regions, where multiple outcrops can be found of different types of jasper, mainly of a red and yellow-brown colour (see Figure 2) (Bérard and Vernet 1997). The southern region of Savanne des Pétrifications is best known and has revealed the clearest evidence of prehistoric exploitation (Bérard and Vernet 1997).

Jasper occurrences on St. Lucia have only very recently been discovered (Knippenberg 2009). During Leiden University's 2009 field season, three weeks were spent on St. Lucia to locate sources of siliceous stone. Within the island's northern tip, different jasper, chalcedony and fossilized wood outcrops and secondary deposits were found in addition to scatters of flaked material. Primary jasper material can mainly be found as veins in igneous rock, which are easily visible at different places along the rocky shorelines. The jaspers exhibit a great variety in colour from red, red-brown, yellow brown to even green. Red jasper predominates, followed by the yellow brown variety, whereas green jasper has only been identified at a single locality, Anse du Galet.

Chalcedony can be found in different places in the Antilles, often as very localized small outcrops, inclusions or isolated cobbles. It is most abundant on Martinique and St. Lucia, where it is found in association with the jasper occurrences. In addition it is reported on Antigua (Knippenberg 2006), Dominica (Honeychurch 1995), and rarely on Basse Terre, the southern volcanic half of Guadeloupe (Stouvenot, personal communication 2009). Most chalcedony is translucent; however banded² and more dull varieties occur as well.

Silicified wood is known from three places, on Antigua where it occurs associated with the bedded chert of Corbison Point (Martin-Kaye 1959), and on Martinique and St. Lucia, where it can be found in the same regions as the jaspers and chalcedonies. Exclusive, but extensive secondary occurrences of chert, for which it is unclear how the chert was formed and what the associated host-rock is, are known in the western part of Puerto Rico, in the Cabo Rojo and Moca areas (Knippenberg 2006).

² Banded varieties of chalcedony are generally referred to as agate. For reasons of simplicity I will group all (semi-)translucent varieties under the name of chalcedony.

In addition to these cryptocrystalline siliceous stone varieties, occasionally macrocrystalline quartz has been used for similar purposes in the Antilles as well (Knippenberg 2006; Rodríguez Ramos 2001). A source providing great quantities of workable quartz has recently been identified by the author on Mustique, at one of its northern beaches. Milky quartz is known to occur on Vieques (Rodríguez Ramos 2001).

Despite not being available on every island siliceous stone sources are more or less evenly distributed throughout the Antilles, when viewed from a regional point of view. The indigenous populations, however, made selective use of these listed occurrences. It can be stated that most of the different occurrences previously mentioned have been used to some extent, their importance from a local as well regional perspective, however, varies greatly. They can be broadly classified into four groups:

- Sources which have only been used very limitedly within the direct local surroundings (radius of say 15 km);
- 2. Sources which have been used limitedly in the direct local surroundings, and which rarely turn up in the multi-island region, but are of no significance in that region;
- 3. Sources which have been used much locally, but which are of no significance from a regional inter-island perspective;
- 4. Sources which have been used much locally and within the surrounding multi-island sub-region.

Distribution

Many, often small, sources or individual occurrences are included within the first group. A good example is formed by the radiolarian chert from La Désirade. Recent archaeological work on this small island and neighbouring Grande Terre by Leiden University and the local *Directions Régionales des Affaires Culturelles* (DRAC) has revealed that most of the Amerindian habitation sites on La Désirade and some of the sites on the northern coast of Grande Terre have produced this material (de Waal 2006; Knippenberg 2006). All sites, however, produced minor to very small abundances, even sites close to the source. On most of these sites Long Island flint from Antigua constituted the main siliceous stone used (see Figure 3).

Many of the chalcedony and silicified wood occurrences can be placed in this group as well. Almost nowhere in the Lesser Antilles, even on the islands where the sources are situated, do they make up the majority of a site's lithic samples. At some of the Martinique sites where they make up a significant part of the assemblage, the large variety among the chalcedony artefacts suggests exploitation of multiple outcrops. The use of fossilized wood can especially be considered rare. This limited usage may be attributed to the fact that these chert types always co-occur alongside significant sources of jaspers and that the Amerindians had a preference for the latter types of siliceous stone.

The second group of sources comprizes the Coconut Hall and Blackman's Point flint occurrences on Antigua among others. Both flint varieties were used much in the Late Ceramic Age settlement sites of the same name, lying just next to these secondary stone sources (Knippenberg 2006). In addition, small numbers of artefacts have been identified at larger distance at a number of sites on Guadeloupe, St. Eustatius, Saba, and Anguilla especially in the earlier phase of the Late Ceramic Age.



Figure 2 Location of siliceous stone source areas and use of siliceous stone at different Ceramic Age sites on Martinique and St. Lucia. Location of siliceous stone source areas on Martinique are derived from a map provided to me by Benoît Bérard (personal communication 2001).



Figure 3 Distribution of different siliceous stone varieties among the northern Lesser Antilles. A. Distribution of Blackman's Point flint during the Late Ceramic A phase (AD 850 – 1250); B. Distribution of the Coconut Hall flint during the Late Ceramic A phase (AD 850 – 1250); C. Possible distribution of Shirley Heights chert during the Early Ceramic A phase (500 BC – AD 400); D. Distribution of Long Island flint during the Early Ceramic B phase (AD 400 – 850).

Possibly the Shirley Heights chert³ source in the south-eastern part of Antigua fulfilled a similar role in the early phase of the Early Ceramic Age (Knippenberg 2006). Artefacts resembling this material have been found in a southern Antigua site, Doigs, and at early sites on Montserrat, northern Guadeloupe and Marie-Galante (Knippenberg 2006). At all sites, however, they do not make up the majority of the flaked stone assemblage.

The third group comprizes the jasper occurrences on Martinique and St. Lucia. The study of the characteristics of the different jasper varieties is still in its preliminary stage. At present no petrologic or geochemical analyses have been done to distinguish the Martinique jaspers from the St. Lucian ones. However, some general remarks can already be made with regard to local use and distribution patterns.

³ The chert probably is a more dull type of chalcedony.
The analysis of a number of lithic artefact collections from different Ceramic Age sites on both islands revealed that jasper and to a lesser degree chalcedony are the main materials that had been used by the Amerindians on Martinique and St. Lucia (see Figure 2). More than 95% of the material associated with the manufacture of flake tools belongs to one of these non-biogenic siliceous stone varieties. Almost all of these materials resemble natural rock on one of these islands. Rare varieties, for which no natural equivalent is known, likely are local as well, since our knowledge of all the available jasper and chalcedony outcrops is still incomplete on both islands.

From the site analysis it has also become clear that different jasper and chalcedony varieties were used within a single site and that the abundances per variety differ for each site. At most sites red jasper predominates, some however show a preference for the yellow-brown variety. From this it is at least clear that multiple outcrops were exploited by each site independently and that therefore each site had its unique mixture of siliceous stone varieties used. Furthermore the analysis showed that not all exploited outcrops were on the same island. On Martinique, the Dizac au Diamant site produced some green jasper, which does not occur on Martinique and which must have been collected from Anse du Galet on St. Lucia. Given the close distance from southern Martinique to northern St. Lucia, this probably did not involve exchange, but more likely the direct procurement by the Dizac people at the northern St. Lucian green jasper outcrop.

In addition to these local sites, the typical Martinique/St. Lucia red jasper rarely turns up at a greater distance. I have seen material from Ceramic Age sites on Guadeloupe, Montserrat, and St. Eustatius, which resemble these jaspers and are quite different from other known jasper occurrences more proximate (e.g. Les Saintes). It is interesting that this further distribution only relates to the red variety of jasper and not to the other naturally abundant one, the yellow-brown.

When we compare this example from the Martinique - St. Lucia micro-region with Antigua, the other important island hosting a variety of siliceous stones, strong similarities are present (see Figure 4). Looking at raw material use by sites on Antigua itself it is noted that a similar difference between sites in the use of siliceous stone varieties exists as is the case on St. Lucia and Martinique. Fortunately, on Antigua I am better able to distinguish the siliceous stone varieties from each of the different sources. It appears that large portions came from the closest sources available to that particular site. As already mentioned the inhabitants from the Coconut Hall locality made use of the Coconut Hall secondary source of flint just around the corner (Knippenberg 2006). This accounts as well for the Blackman's Point site, which used its local flint material frequently. In addition to these near-by source varieties, all sites yielded a significant amount of material originating from one particular locality, Long Island. The amount of Long Island flint, however, varied depending on the distance to the closest available alternative siliceous stone source. Sites, which did not have these alternative occurrences near-by, more heavily relied on the use of Long Island flint, as indicated by a high percentage at the site of Claremont along the south-western coast of Antigua, in an area devoid of siliceous stone (Knippenberg 2006).

This preference for Long Island flint becomes even more apparent when we direct our attention to sites on one of the islands directly surrounding Antigua. Settlement sites on Montserrat, Guadeloupe, Nevis, St. Kitts, and even Saba and St. Eustatius all produced



Figure 4 Location of siliceous stone sources and use of siliceous stone at different Ceramic Age sites on Antigua. Geological map is based on Multer et al. (1986:fig. 2.1).

high abundances of Long Island flint, likely more than 70%. Generally these abundances are higher than at most of the Antigua sites and the siliceous stone mixtures are quite different.

Again this points to an independent procurement for each site, suggesting that communities outside Antigua must have been visiting the source of Long Island itself, without interference by one of the Antigua communities.⁴ Otherwise you would find mixtures of siliceous varieties similar to one of the Antigua sites. This multi-island region surrounding Antigua is indicated as the supply zone of the Long Island flint procurement. It is clear that the region, in which people went directly to Long Island, is quite extensive and involved sometimes trips of more than 150 km, which by-passed different islands.

⁴ Exception to this pattern may have occurred during short periods of the Late Ceramic A and B phases, as both these phases witnessed small scale settlement activity on Long Island itself.

Apart from this independent direct procurement some of the data point to the existence of inter-community exchange between Antigua and its direct surrounding neighbours. The Anse à La Gourde site, along Guadeloupe's northern coast, for example, yielded Coconut Hall and Blackman's Point flint in deposits contemporary with the Amerindian settlement at both localities on Antigua (see Figure 5). Given the fact that these settlements to a great degree spatially overlap with these source locations, it is highly unlikely that the Anse à la Gourde people acquired these materials without interacting with these Antiguan communities. This is strong evidence for inter-community exchange.

This short discussion of siliceous stone use on Antigua and its surrounding islands clearly showed the micro-regional importance of the Long Island flint source over others. So far, it is the only group 4 source of siliceous stone that was used and distributed extensively within the Lesser Antilles. Even beyond the supply zone, Long Island flint had been utilized, attested to the finding of artefacts at sites as far away as eastern Puerto Rico and southern St. Vincent. At these sites beyond the supply zone, we are finding Long Island flint in significantly smaller percentages. When these percentages are set against distance the fall-off curve exhibits steep exponential decay, which is suggestive for a down-the-line mode of exchange (Renfrew 1977). During the Early Ceramic Age, for example, this probably did not involve more than two to three exchange steps, finally resulting in a distribution from St. Vincent in the south to the eastern part of Puerto Rico in the west.



Figure 5 Provenance of different stone materials used at the Anse à la Gourde site (Guadeloupe) during the Late Ceramic A phase (AD 850 – 1250).

Discussion and concluding remarks

When we summarize these data there are some patterns that emerge. In general it can be said that the bulk of siliceous stone used remained quite stable through time. Long Island turns up much in the northern Lesser Antilles throughout the entire Ceramic Age. Also the red and yellow jasper varieties can been found on Martinique and St. Lucia throughout all occupation phases. However, some minor changes can be identified as well. The use of the Shirley Heights chalcedony drops significantly after AD 400. Other sources like the Blackman's Point and Coconut Hall seem to increase in importance from that time. The florescence of the distribution of these siliceous stone varieties is strongly associated with the nearby settlement and must be ascribed to the interaction of these communities with their neighbours. The fact that in other periods their usage was negligible suggests that these materials were not specifically valued as a good alternative to Long island flint. They more likely functioned as a means to establish inter-community relationships, the latter being the primary goal, rather than that these relationships were formed for obtaining these locally non-available rock materials.

For the acquirement of the bulk of the raw materials for flake tool manufacture most communities did not interact with others but organized direct procurement trips to the main sources themselves, the Long Island flint and Martinique/St. Lucia jasper localities. This remained the primary means of acquiring material for almost the entire Ceramic Age. The constant usage and preference for this flint and these jaspers were not only related to their high quality, which specifically is the case for Long Island flint. One other feature makes some of these sources very attractive and that is their relative remote location. Long Island is situated on an off shore islet and the most important jasper sources are either lying on the remote tip of a peninsula or in both the sparsely populated southern end of Martinique and northern end of St. Lucia. These remote locations would make control by local communities on the same island difficult to achieve and this too some extent guaranteed direct access to these localities by outsiders. In other words, this kept these communities independent from others for the acquirement of these basic raw materials.

The other overall pattern that emerges, which stands in close relation to the point made above, is the unique mixtures of siliceous varieties that each settlement site used. On St. Lucia and Martinique each community was able to independently choose which outcrops to exploit. On the islands surrounding Antigua communities primarily relied on direct procurement to Long Island flint, but in addition occasionally acquired other varieties through interaction with multiple Antiguan communities. Such a scenario at least indicates that redistribution by central sites did not occur and supports the existence of socio-politically autonomous settlements.

It further shows that individual communities had many alternatives for obtaining their flake tool raw materials. If we take the Anse à la Gourde site as an example again, then we see that during the Late Ceramic Age this settlement obtained its raw material both by means of direct procurement and exchange from a whole variety of sources, including at least four on Antigua, one on La Désirade and possibly one within the Martinique-St. Lucia region. More can be added to this list as there are a few varieties for which I cannot specify a source location yet. This only accounts for the siliceous stone. If we further look at the stone materials used for other types of tools and different sorts of other objects found in this site, we can at least name another five exotic source localities to this list. This all attests to a highly interactive region in which stone materials, tools, and objects were circulating in multiple directions between the many Lesser Antillean islands and it underlines again the notion mentioned at the start of this paper that the ocean formed a high-way rather than a barrier for inter-island interaction.

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DIVERSE ORIGINS, SIMILAR DIETS

An integrated isotopic perspective from Anse à la Gourde, Guadeloupe

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We present the combined results of stable isotopic analyses of bone (carbon and nitrogen) and tooth enamel (strontium) to reconstruct the life histories of the ancient inhabitants of Anse à la Gourde, Guadeloupe. Strontium data indicates diverse foreign origins for a significant proportion of the burial assemblage. Certain nonlocals have strontium (Sr) values consistent with the origins of their grave goods. Carbon (C) and Nitrogen (N) isotope data reflect a mixed diet of terrestrial and marine protein sources as suggested by the faunal evidence, similar to other coastal sites in the Lesser Antilles. Comparative analyses of isotopic data sets with demographic structure reveal no clear correlations between mobility, diet, and demography for this population. However, correlations between locality and diet for certain individuals indicate that, carbon and nitrogen data can contribute to the identification of geographic origins.

Presentamos los resultados combinados de análisis isotópicos estables del hueso (carbón y nitrógeno) y del esmalte de diente (estroncio) para reconstruir las historias de vida de los habitantes antiguos de Anse à la Gourde, Guadeloupe. Los datos del estroncio indican los orígenes extranjeros diversos para una proporción significativa de la ensambladura del entierro. Ciertos nonlocals tienen valores estroncio (Sr) constantes con los orígenes de sus objetos mortuorios. Los datos del isótopo del carbón (C) y del nitrógeno (N) reflejan una dieta mezclada de las fuentes terrestres y marinas de la proteína según lo sugerido por la evidencia fáunica, similar a otros sitios costeros en las Antillas Menores. Los análisis comparativos de los conjuntos de datos isotópicos con la estructura demográfica no revelan ninguna correlación clara entre la movilidad, la dieta, y la demografía para esta población. Sin embargo, las correlaciones entre el lugar y la dieta para ciertos individuos indican datos eso, del carbón y del nitrógeno pueden contribuir a la identificación de orígenes geográficos.

Nous présentons ici des résultats combinés d'analyses d'isotopes stables effectuées sur des ossements humains (carbone et nitrogène) et d'émail dentaire (strontium) pour tenter de reconstruire l'histoire de la vie quotidienne des habitants préhistoriques de l'Anse à la Gourde en Guadeloupe. Les données de strontium (Sr) indiquent diverses origines étrangères pour une forte proportion de l'assemblage funéraire. Certains « étrangers » ont des taux de strontium correspondant aux origines de leur mobilier funéraire. Les données isotopiques du carbone (C) et du nitrogène (N) reflètent une alimentation mixte composée de protéines d'origines terrestre et marine, comme suggérée par les résultats de l'étude faunique, et est similaire à celle observée sur d'autres sites côtiers des Petites Antilles. Des analyses comparatives de séries de données isotopiques et de structure démographique ne

révèlent pas de corrélation claire entre mobilité, régime alimentaire, et démographie pour cette population. Néanmoins, des corrélations entre la localité et le régime alimentaire pour certains individus indiquent que les données isotopiques du carbone et du nitrogène peuvent contribuer à l'identification des origines géographiques.

Introduction

We present here an integrated isotopic approach to investigating patterns of ancient mobility and paleodiet for the burial population of Anse à la Gourde. The approach is integrated in the sense that like much recent research utilizing isotopic analyses we explicitly seek to integrate data from multiple isotopes both with each other and with other lines of archaeological evidence to provide a clearer picture of the lifeways and life histories of past peoples (Bentley and Knipper 2005; Evans, Stoodley, and Chenery 2006; Evans, Chenery, and Fitzpatrick 2006; Knudson and Price 2007; Knudson *et al.* 2009; Montgomerey *et al.* 2005; Montgomery and Evans 2006; Schroeder *et al.* 2009; White *et al.* 2007). The isotopes analysed for this study include strontium which is primarily utilized for examining mobility (Valcarcel *et al.*, this volume), in addition to carbon and nitrogen which reflect different aspects of dietary practices.

The relative scarcity of skeletal remains in certain regions, such as the circum-Caribbean, requires that when discovered they should be utilized to their fullest potential. Tropical and sub-tropical environments generally lead to fairly poor conditions for the preservation of skeletal remains, and although many burials have been found throughout this region, many if not most are generally in poor states of preservation. Cemeteries or burial areas containing large numbers of burials or human skeletons are even more scarce. Nonetheless, the amount of useable data generated from the analyses of these remains have been rather disproportionate to the potential amount of information that they contain. This state of affairs is attributable to a variety of causes including; unequal histories of archaeological research, the generally poor condition of much excavated skeletal material, the relative dearth of skilled specialists working in this region and the lack of contextual data for material excavated in the distant past, to name a few.

In recent decades this disparity between the potential richness of the archaeological record and the implementation of research to actualize said potential has begun to be remedied. This is surely in part due to an overall increase in the volume of archaeological activity throughout the region. More archaeology has led to the discovery and excavation of more burials and skeletal remains. These recent excavations have been conducted at a time of increased attention, from the public and the archaeological community, to the promises and potentials of scientific and technological developments and the application of such advances in archaeology, Broadly speaking, we are referring to archaeological sciences and analytical archaeology, and particularly to a set of archaeometric techniques which have come to be routinely applied to archaeological skeletal materials throughout the world. The integration of archaeology, archaeometrics, ethnohistory and ethnography represents the future course of research into the history and prehistory of Caribbean peoples (Hofman *et al.* 2008).

As previously mentioned large skeletal assemblages excavated with modern archaeological standards and techniques are fairly uncommon throughout the West Indies and particularly so in the Lesser Antilles. Therefore, the burial population of the site of Anse à la Gourde represents a rare opportunity to fill a very large gap in our knowledge about the prehistory of this region. However, this opportunity can only be fully realized through the integration of a multi-disciplinary approach. As such the skeletal collection from the site of Anse à la Gourde, has been subjected to a number of complementary analytical approaches. These include but are not limited to mortuary analysis (burial position and orientation, grave goods, taphonomy) (Hoogland *et al.* 2001, 2003), osteological analysis (demography, pathology) (Hoogland and Panhuysen 2001; Weston, personal communication 2010), dental analysis (wear, pathology, non-metric traits) (Coppa *et al.* 2008; Mickleburgh 2006), and biogeochemical analysis (radiocarbon dating, strontium, carbon and nitrogen isotope analysis) (Booden *et al.* 2008; Hofman *et al.* 2003a; Laffoon and Hoogland 2009; Stokes 1998).

Site and setting

The site of Anse à la Gourde is situated on the north-east peninsula of Grande Terre, the limestone part of the island of Guadeloupe (see Figure 1). It lies on a lower limestone terrace in a large bay facing north into the Atlantic Ocean. The bay is protected by a barrier reef lying just off the coast. The site, which covers approximately 4.5 hectares, has been extensively investigated between 1995 and 2000, with approximately 1452 m² having been excavated (Delpuech *et al.* 2001; Hofman *et al.* 2001). Three occupation phases were recognized, radiocarbon dated between AD 450 and 1350, whereas the major occu-



Figure 1 Map of the Lesser Antilles and the position of Anse à la Gourde on Guadeloupe From (Booden et.al., 2008, fig.15.1).

pation took place between AD 1000 and 1350 which is assigned to the post-Saladoid or Troumassoid period (Hofman *et al.* 2003b). Eighty-three burials were found containing 92 individuals which are also ascribed to this period. All of the burials were situated within the habitation area, with most of them inside house structures (Bright 2003; Delpuech *et al.* 2001; Duin 1998; Morsink 2006). A complex and wide variety of burial practices is visible at Anse à la Gourde suggesting social inequality and close affinity with the dead and ancestors (Delpuech *et al.* 2001; Hofman and Hoogland, this volume; Hoogland *et al.* 2001, 2003).

Isotopic approach

Strontium isotope analysis represents the oldest and most widely applied analytical tool for inferring the movement of individuals in the past from a biogeochemical perspective. This technique was originally applied to a portion of the burial population of the site of Anse à la Gourde by Booden *et al.* (2008) to investigate patterns of ancient mobility. This study can be characterized as the first large-scale application of this method to this region. Our research expands on this earlier work through the inclusion of the results from the analysis of an additional 18 individuals as we elaborate on the initial results and interpret them from an integrated perspective.

In addition this research focuses on the analysis of carbon and nitrogen stable isotopes (¹³C and ¹⁵N) in human bone collagen in order to reconstruct the paleodiet at the site of Anse à la Gourde. Following a broadly similar study by Stokes (1998) which covered a large part of the Caribbean area, we expand her data on 21 individuals from this site with an additional 39 individuals. The total sample forms a large representative dataset of the 92 individuals excavated from Anse à la Gourde. The information collected contributes to dietary reconstructions of the burial population of Anse à la Gourde and can also discriminate between the diets of specific individuals or certain groups, thereby complimenting evidence for past diet based on evidence from faunal and floral remains. The combination with other data obtained from the skeletons, such as demographic structure and strontium isotope analysis, allows us to correlate paleodiet with other observed patterns within the burial population.

Strontium (Sr) isotope analyses

What follows is a brief discussion of the basic principles of strontium isotope analysis but for the sake of brevity we refer the reader to more detailed discussions (Bentley 2006; Bentley *et al.* 2004; Grupe *et al.* 1997; Hodell *et al.* 2004; Price *et al.* 2002). The specific laboratory protocols and procedures utilized in this research can be found in Booden *et al.* (2008). The utility of Sr isotope analyses for investigating human migrations and mobility from human remains relies on several interrelated parameters. Strontium isotopes vary geographically, owing primarily to underlying differences in bedrock geologies of different regions (Beard and Johnson 2000). This is rather simplistic as in fact the total strontium contributions for any particular ecosystem are dependent upon the combination of all environmental sources (Bentley 2006; Laffoon and Hoogland 2009). Owing to its broad similarities with calcium, strontium is likewise taken up by the body and incorporated into skeletal tissues although at trace (but measurable) concentrations (Burton 2008; Burton *et al.*1999). Unlike most light isotopic systems, strontium does not undergo biofractionation as it moves through a foodweb, thus most animals (including humans) occupying a given ecosystem will share broadly similar Sr isotope signatures within their skeletal tissues. Because dental enamel does not undergo any substantial alteration after the completion of mineralization and is relatively resistant to post-mortem contamination (Budd *et al.* 2000; Kohn *et al.* 1999), it preserves the isotopic signal of the period of growth and development (Hillson

Fnr.	Sex	Age	C&N	C:N	δ¹³C	δ¹⁵N	Sr	δ ⁸⁷ Sr	Deviation	Local
050a	F	>46 yrs	S	3.27	-16.69	9.62	В	0.709171	0.000008	I
089	F	26-35 yrs	V	2.74	-13.59	12.00	В	0.709161	0.000007	I
108a	М	36-45 yrs	S	3.27	-14.38	10.38	В	0.709172	0.000015	I
137a	U	>18 yrs	-	-	-	-	L	0.709131	0.000014	I
138a	F?	>18 yrs	S	3.28	-13.86	10.45	-	-	-	-
139	М	>46 yrs	S	3.31	-14.64	10.99	В	0.709034	0.000009	I
159	F	18-25 yrs	V	2.69	-14.53	10.81	В	0.709146	0.000009	I
171a	М	18-25 yrs	S	3.27	-13.81	10.52	В	0.708636	0.000020	n
194	F?	>46 yrs	V	2.85	-13.84	10.94	-	-	-	-
195	U	5-9 yrs	S	3.12	-12.57	11.91	L	-	-	-
196	М	>18 yrs	S	3.30	-15.11	10.72	В	0.709038	0.000009	I
197	М	18-25 yrs	-	-	-	-	L	0.709125	0.000015	I
199	U	>18 yrs	S	3.30	-15.12	10.70	-	-	-	
200	F	18-25 yrs	-	-	-	-	L	0.709001	0.000031	I
202	F?	>18 yrs	S	3.22	-13.97	10.42	В	0.709127	0.000012	I
206a	М	>18 yrs	-	-	-	-	В	0.709127	0.000009	I
207	F	36-45 yrs	S	3.28	-15.39	9.57	В	0.709116	0.000013	I
212	F?	>18 yrs	S	3.28	-13.74	10.40	В	0.709083	0.000010	I
218	M?	>18 yrs	V	2.77	-15.24	11.59	-	-	-	-
219	U	10-14 yrs	V	2.81	-16.44	10.09	L	0.709063	0.000027	I
238a	M?	>18 yrs	V	2.73	-14.73	11.61	-	-	-	-
238b	F	26-35 yrs	-	-	-	-	L	0.709148	0.000011	I
241	U	Unknown	-	-	-	-	В	0.709058	0.000008	I
253	F	>18 yrs	V	2.73	-14.92	11.90	В	0.709162	0.000015	I
288	F?	26-35 yrs	S	3.23	-14.61	10.72	В	0.708646	0.000008	n
289	F	>18 yrs	V	3.10	-14.06	11.28	-	-	-	-
291	U	<18 yrs	-	-	-	-	L	0.709088	0.000011	I
292	M?	36-45 yrs	V	1.45	-15.07	11.86	В	0.708755	0.000010	n
304	F	26-35 yrs	S	3.19	-15.01	9.81	В	0.709122	0.000040	I
307	М	>46 yrs	V	2.82	-14.47	11.56	В	0.709165	0.000008	I
311	F	26-35 yrs	S	3.17	-14.50	10.40	В	0.708849	0.000014	n
332	F	18-25 yrs	S	3.28	-14.85	10.25	В	0.708278	0.000009	n
335	F	>18 yrs	S	3.27	-15.58	10.35	L	0.707638	0.000032	n
339	M?	>18 yrs	S	3.44	-14.24	10.10	L	0.709100	0.000009	Ι
342	М	26-35 yrs	S	3.24	-14.32	10.74	В	0.709031	0.000007	Ι
348	U	>18 yrs	-	-	-	-	L	0.709130	0.000009	Ι
349a	М	26-35 yrs	-	-	-	-	L	0.709139	0.000011	I

Fnr.	Sex	Age	C&N	C:N	δ¹³C	δ¹⁵N	Sr	δ ⁸⁷ Sr	Deviation	Local
349c	F	26-35 yrs	-	-	-	-	В	0.708590	0.000009	n
350	F	36-45 yrs	v	3.15	-14.77	10.52	В	0.709182	0.000010	I
377	U	1-4 yrs	-	-	-	-	В	0.709071	0.000027	I
378	F	18-25 yrs	S	3.28	-15.30	10.66	В	0.707490	0.000009	n
430	F	26-35 yrs	V	3.26	-14.78	10.88	В	0.708794	0.000009	n
446	F?	>18 yrs	v	3.08	-14.66	11.58	В	-	-	-
447	F	18-25 yrs	V	2.75	-13.90	11.49	В	0.709090	0.000011	I
449	M?	36-45 yrs	v	3.28	-16.82	11.28	-	-	-	-
450	М	26-35 yrs	V	3.18	-14.19	11.50	В	0.708690	0.000009	n
451	F	26-35 yrs	v	2.69	-14.28	11.56	В	0.709113	0.000008	I
452	F	26-35 yrs	v	2.91	-15.33	11.00	В	0.709182	0.000006	I
454	F	>18 yrs	-	-	-	-	В	0.709164	0.000009	I
529	F	18-25 yrs	V	2.85	-14.86	10.91	L	0.709107	0.000012	I
706	M?	26-35 yrs	V	2.87	-15.18	11.15	В	0.709168	0.000018	I
726	М	18-25 yrs	V	3.28	-15.84	11.92	В	0.709228	0.000013	I
953	F	>46 yrs	v	2.68	-15.52	11.07	В	0.709162	0.000012	I
1126a	F	>18 yrs	-	-	-	-	L	0.709120	0.000008	I
1126b	М	>18 yrs	v	3.17	-14.54	11.37	-	-	-	-
1203	M?	26-35 yrs	v	3.00	-14.66	11.95	В	0.709131	0.000012	I
1226	М	26-35 yrs	V	3.30	-14.43	12.06	В	0.709068	0.000009	I
1413	U	1-4 yrs	-	-	-	-	В	0.709193	0.000018	I
1496a	М	18-25 yrs	-	-	-	-	В	0.709158	0.000007	I
1651	М	26-35 yrs	V	3.02	-14.22	11.95	В	0.709168	0.000006	I
1922	U	1-4 yrs	-	-	-	-	L	0.709136	0.000010	I
1945	F?	18-25 yrs	v	3.51	-15.36	10.60	-	-	-	-
1948	М	26-35 yrs	V	2.94	-15.55	11.36	-	-	-	-
1958	F?	>18 yrs	v	2.74	-15.28	11.94	L	0.708996	0.000010	I
2005	F?	18-25 yrs	v	2.83	-13.68	11.04	В	0.708475	0.000012	n
2106	М	>46 yrs	V	3.21	-15.24	10.27	L	0.709143	0.000009	I
2107	F?	10-14 yrs	V	2.77	-13.70	10.69	В	0.709149	0.000008	I
2109	F	>18 yrs	v	2.80	-13.85	11.05	L	0.709071	0.000010	I
2211	U	1-4 yrs	-	-	-	-	В	0.709412	0.000014	n
2212	F	36-45 yrs	V	3.07	-14.01	10.99	В	0.709100	0.000008	I
2213	F	>46 yrs	v	3.12	-14.59	11.68	L	0.708854	0.000008	n
2214	U	>46 yrs	v	3.03	-14.01	11.14	В	0.709156	0.000012	I
2215	F	26-35 yrs	v	3.08	-16.80	10.33	В	0.707747	0.000007	n
2216	м	36-45 yrs	v	2.81	-14.96	11.21	В	0.709165	0.000006	I
2217	F	18-25 yrs	v	2.59	-13.93	11.34	В	0.709168	0.000005	I
2140	M?	>18 yrs	V	2.93	-15.20	11.63	-	-	-	-

Table 1 Results of isotopic analyses.

M=Male; F=Female; F?=Possible Female; M?=Possible Male;

C&N= carbon and nitrogen data source; S=Stokes (1998); V=de Vos

Sr= strontium data source; B=Booden (2008); L=Laffoon

l=Local; n=Non-local; C:N= carbon to nitrogen ratio

1996). If an individual moves or migrates between isotopically distinct regions after the time of formation of their dental enamel this can be detected through the comparison of their enamel values with that of the local Sr isotope range. This allows us to identify which individuals are nonlocal to a particular site or region and to make further inferences concerning the demographic composition of locals and nonlocals, the timing or age of migration, and the potential geographic origins of migrants.

Sr isotope: results and patterns

The underlying geology of Grande-Terre where the site of Anse à la Gourde is located is primarily composed of uplifted Pliocene and Quaternary limestone. The Sr isotope signal of this formation is essentially identical to modern seawater and as such any locally grown or raised biological organism should posses a ⁸⁷Sr/⁸⁶Sr signature very close to 0.7092. In fact, analyses of soils from burial pits, archaeological faunal remains (rice rat enamel), and the majority of the individuals from this site all have ⁸⁷Sr/⁸⁶Sr values which fall within a narrow range similar to modern seawater. Initial research identified 14 of the 50 individual humans sampled as non-locals based on this estimate of the local range, a pattern supported by statistical assessments of the same data set (Booden *et al.* 2008). These results proved promising in that all lines of evidence pointed to a rather narrow Sr isotope range for this site and for the island as a whole. We expect that other geologically homogeneous settings, such as many of the carbonate islands, should produce similarly restricted local range estimates and thus permit the identification of nonlocals from isotopically discrete regions.

It is only through the comparative and contextual analysis of the Sr isotope data that the utility of this methodological approach can be appreciated. Comparison of the Sr isotope data with the demographic structure of the burial population reveals several interest-



Figure 2 Graph of Strontium Isotope Results.

ing patterns. As previously stated, we analysed an additional 18 samples making a total of 68 individuals. Of these we have identified 17 (25%) as nonlocals, including 14 adults and 3 juveniles. This represents a substantial number of immigrants (not originating from Grande-Terre) buried at this site. Of the adults identified as adult females or probable females, 10 out of 36 (28%) are nonlocals, whereas of the adults identified as males or probable males, only 4 out of 21 (19%) are nonlocal (see Table 1 and Figure 2).

The significant difference in the percentages of nonlocal males versus nonlocal females may be a reflection of patterns of residential mobility tied to marriage practices or merely an artefact of small sample size. Due to the fact that both males and females appear to be migrating to the site, we cannot at this time make specific inferences concerning types of post-marital residential relocation, such as addressing hypotheses concerning patrilocal versus matrilocal systems. The results may suggest that this group either practiced flexible post-marital residency and/or that residential mobility is not the only type of mobility reflected in the isotopic data. The isotopic values of the nonlocal females display a greater degree of variance than the nonlocal males most likely indicating more diverse origins for the former relative to the latter.

The exact geographic origins of the nonlocals cannot be determined via Sr isotope analysis alone, or any other single isotopic system for that matter, but the range of values for the nonlocals points to potential origins from volcanic or older limestone islands/regions. Two of the three juveniles identified as nonlocals have Sr isotope values that are elevated relative to the estimated local range. These values are difficult to interpret, as Sr values higher than seawater (~0.7092) are expected to be relatively rare in the Lesser Antilles. Possible origins for these two individuals may include Trinidad, some regions of the Greater Antilles, or even the continental mainland. More research into the isotopic variation of the Caribbean region will have to be conducted to further narrow down possible origins for isotopic nonlocals.

Several interesting patterns are also revealed by the comparison of Sr isotope data with the mortuary patterns of this site. No clear correlation appears to exist between burial location, type, or orientation and isotopic values or origins as determined by Sr analysis. However, this lack of correlation needs to be more rigorously tested through statistical analysis. Clear correlations with the presence and type of grave goods relative to locality and origins do exist. Of the 17 nonlocal individuals, eight of them are interred in a burial containing one or more grave goods. This is somewhat exceptional considering that most burials at the site contained no grave goods. Furthermore, of these eight nonlocals with grave goods, five of them are adult females interred with rare, foreign or exotic grave goods. Two individuals, F349c and F430, were interred with a large flake core of Long island flint and a small celt possibly of St Martin greenstone (although the possibility that the celt is actually jadeite is being explored), respectively. Their Sr isotope values are *consistent with* the origins of these particular grave goods (Antigua and St Martin, respectively) but also with many other regions of the West Indies and beyond. In other words, the Sr isotope data supports a hypothesis of similar origins for both raw materials and humans from the same graves but cannot rule out the possibility of variant origins. These patterns are suggestive of possible links between mortuary treatment and origins that require further exploration.

¹³C and ¹⁵N isotope analyses

The stable isotopes ¹³C and ¹⁵N are variants of the normal carbon and nitrogen isotopes ¹²C and ¹⁴N, with the addition of an extra neutron in the core of the atom. The variants are chemically similar to the normal isotopes, however they are heavier. Of all naturally existing carbon around 1.1% consists of ¹³C besides the normal isotope ¹²C (98.9%) and a very small amount of the radioactive ¹⁴C (1 in 10¹² to 1 in 10¹⁵). Next to the normal nitrogen isotope ¹⁴N (99.64%) around 0.36% of all nitrogen consists of ¹⁵N (Schoeninger and Moore 1992; Sulzman 2007). Due to the differences in mass between the lighter ¹²C and ¹⁴N and the heavier ¹³C and ¹⁵N isotopes there are variations in the ratios of these isotopes in natural systems.

There are some major differences in ¹³C and ¹⁵N isotope abundances in nature that provide information about the diets of humans and animals. A primary source of carbon isotope variation in plants derives from the difference in photosynthesis between C3 and C4 plant types. C4 plants (for example some tropical grasses such as maize) discriminate less against the heavier ¹³C during CO² uptake than C3 plants (most plants in temperate environments) and are therefore less depleted in ¹³C. Organisms that feed on these plants will similarly have a less depleted ¹³C signature. In addition, due to differences in the abundance of ¹³C and ¹⁵N in seawater relative to the atmosphere, in general marine organisms have elevated levels of ¹³C and ¹⁵N relative to terrestrial organisms. A final visible trend concerns the trophic level effect, whereby the amount of ¹³C and ¹⁵N increases with every step up in the food chain (Hedges and Reynard 2007; Schoeninger and Moore 1992; Sulzman 2007).

An extra issue addressed by earlier isotope studies in the Caribbean region by Keegan and DeNiro (1988) and Stokes (1998) is the influence of reef fish consumption on the isotopic signature of the consumer. Other than pelagic marine fish which cause the isotopic signature of a consumer to be enriched in both nitrogen and carbon, reef fish cause a similar enrichment in δ^{13} C but only a minor enrichment in δ^{15} N due to nitrogen fixation occurring in reef environments (Capone and Carpenter 1982; Wada and Hattori 1976).

The amount of ¹³C and ¹⁵N can be measured in any organic tissue that contains either carbon or nitrogen. Because the amounts and differences are so small, the isotope ratios are compared to a standard containing a known amount of ¹³C and ¹⁵N. The results are presented as differences in isotope ratios relative to an external standard, in this case δ^{13} C and δ^{15} N. The analysis in this research is performed on human bone collagen (Mook 2006; Schoeninger and Moore 1992; Sealy 2001). Because bone collagen is made out of proteins it reflects mostly the protein part of a human's diet (Ambrose and Norr 1993), although it is not possible to distinguish between animal and plant protein.

Throughout the life of a human, the bones of an individual will continuously remodel and therefore slowly adopt new isotopic signals when a diet is changed. Bone collagen therefore represents the average of an individual's diet over the last 10 to 30 years of his/her life. Dental enamel and primary dentine are not subjected to remodelling or turnover after formation and mineralization have ceased, resulting in an isotopic representation of the period of the formation of the specific tooth (Hedges *et al.* 2007; Sealy *et al.*1995).



Figure 3 Graph of Carbon and Nitrogen Isotope Results.

C and N isotopes: results and patterns

The work by Stokes (1998) and Norr (2002) has revealed widespread geographic variation in dietary patterns throughout the Caribbean area. Clear spatial clusters are visible which are explained by Stokes as the outcome of the availability of food resources on each island due to island size, geomorphology and ecosystems. There is a clear distinction between small limestone islands with extensive reefs but poor terrestrial resources and larger islands with richer terrestrial food resources but perhaps less access to reef resources. In addition, smaller differences are visible within islands concerning the location of sites, for example the distance to the coast and an associated reliance on marine resources. This clear clustering of dietary patterns on different islands makes dietary reconstruction with ¹³C and ¹⁵N isotopes a helpful extra parameter for migration and mobility studies, as discussed further below.

The combined δ^{13} C and δ^{15} N results from the study by Stokes (1998) and this study on the human skeletons of Anse à la Gourde cluster spatially in a pattern which is consistent with the expected diet of this population. A significant offset is visible between both datasets, although it does not affect the interpretation of the results (Figure 3). The results show a mixed diet of terrestrial food resources combined with an extensive amount of reef fish. A mixing model obtained from the isotopic signals from animals with a pure marine and a pure terrestrial diet provides estimates of the percentage of reef fish in the diet of the Anse à la Gourde population around 50%, with the remainder of the protein component of the diet derived from terrestrial C3 sources.

There is no clear correlation visible between diet and biological sex or age at death. This means that there are no observable differences in dietary patterns based on demography, or in other words, the whole population shared a broadly similar diet. There is also no clear correlation between diet and locality. With few exceptions the $\delta^{13}C$ and $\delta^{15}N$ data of all non-locals cluster with the locals, suggesting that the non-locals had a similar diet to the locals. Bearing in mind that the strontium isotope signal obtained from tooth enamel represents the childhood geographic origin, whereas the $\delta^{13}C$ and $\delta^{15}N$ results obtained from bone collagen represent the diet in the last decades of an individual's life, this lack of correlation could be interpreted in multiple ways. Either, the dietary patterns (and thus the

 δ^{13} C and δ^{15} N signals) of the nonlocals' place(s) of origin resembles the dietary pattern of Anse à la Gourde (for example, another coastal site on a limestone island) or the nonlocal individuals spent enough time on Grande-Terre for their bone collagen isotope values to equilibrate to the local dietary pattern. Analyses of nitrogen and carbon isotope signals of dentine collagen could provide information concerning dietary consumption during childhood and thus provide an opportunity to discriminate between these two hypotheses. In addition, the isotopic data concerning non-local childhood diets may contribute to the identification and interpretation of geographic origins considering the broad spatial patterning or clustering of dietary isotopic data in the Caribbean.

Integrating isotope results and an individual life history approach

The integration of multiple isotopic data sets with other lines of archaeological evidence shows great potential for gaining insight into paleodietary and paleomobility in this region. While the strontium isotope results have revealed substantial migration to the site and multiple origins for nonlocals, the carbon and nitrogen isotope results indicate homogenous dietary patterns for this burial population. Although there is no clear patterning between diet and locality within the site, the integration of the two data sets could provide further insights. The clear dietary patterning within the Caribbean, with different islands or regions being represented by rather distinct clusters of isotopic data points, potentially provides an extra parameter for the identification of geographic origins for nonlocals. In other words, when a correlation is found between locality and diet, the dietary information could contribute to the determination of origins.

Both types of analyses are suitable to perform on different skeletal elements and tissues which represent different periods of an individual's life. With that information, a more detailed study can be made on the life course or history of specific individuals, for example, to determine the age at which residential relocation occurred for nonlocal individuals and whether migration itself is linked to other changes in behaviour, such as dietary practices. As there is no clear correlation with locality between specific groups based on sex or age, this individual life history approach is the only way to gain insight into the motives for and patterns of migration. Several pilot studies will help us to clarify the possibilities of this approach in this particular case and whether it can provide answers and/or generate new questions.

To illustrate our point, preliminary results from one pilot study indicate that individual F2215, an adult female determined to be nonlocal based on the Sr isotope data, possesses C and N isotopic results in her dentine which is clearly different from that of the rest of the analysed burial population. In fact, the C and N data from this individual cluster very closely to that of published data from the site of Boca del Soco, Dominican Republic (Stokes 1998). This evidence points to south-western Hispaniola as a potential origin for this individual which can be further tested through comparison of her Sr values with estimates of the Sr isotope variation for that region. The C and N results from this same individual's bone collagen is somewhat closer to but still distinct from the main local dietary cluster. One possible explanation for this fact is that this person lived at Anse à la Gourde long enough for her bone collagen to begin to equilibrate to the local dietary pattern but not long enough for the original isotopic signal to be completely obliterated. Furthermore, future isotope analyses of various other tissues, such as dental calculus and bone apatite, may further elucidate the timing of this individual's migration to Grande-Terre and her

subsequent dietary change upon arrival. In addition, various other biogeochemical methods including sulphur, oxygen, hydrogen and lead isotopes and trace element analyses offer great potential for further exploration of patterns of ancient human behaviour in this region.

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TRIO MOVEMENTS AND THE AMOTOPOAN FLUX

Jimmy L.J.A. Mans

To bridge the gap between archaeological and anthropological understandings, the dynamics of a present-day Trio community (Suriname) are studied in a synchronic, ethnographic perspective by relating these to the material dimension of a single small village. The movements of the community in the landscape are discussed as they have been observed in the field, as well as part of the exchanges of this village with other villages. Subsequently a diachronic perspective is adopted in which the 'coming into being' of this new village is elucidated. The movements of its inhabitants are presented in concert with the material development of the village.

Con el fin de cerrar la brecha entre los entendimientos arqueológicos y antropológicos, se consideran las dinámicas de una comunidad Trío actual (Suriname) desde una perspectiva etnográfica sincrónica entre las observaciones etnográficas y la dimensión material dentro de una peqeña aldea. El movimiento de la comunidad sobre el paisaje se discute según observado en campo, así como parte de los intercambios de esta aldea con otras aldeas. Finalmente, se adopta una perspectiva diacrónica para dilucidar el 'advenimiento' de esta nueva aldea. Los movimientos de sus habitantes se presentan en sintonía con el desarrollo material de la aldea.

Afin d'effectuer un rapprochement entre les compréhensions archéologiques et anthropologiques, les dynamiques d'une communauté actuelle de Trio du Surinam sont étudiées selon une perspective ethnographique synchronique, en les reliant à la dimension matérielle d'un unique petit village. Les déplacements de la communauté dans le paysage sont discutés tels qu'ils ont été observés sur le terrain, tout comme faisant partie des échanges de ce village avec d'autres implantations. Par la suite, une perspective diachronique est adoptée afin d'élucider comment ce nouveau village est «venu au monde ». Les mouvements de ses habitants sont présentés parallèlement au développement matériel du village.

Caribbean archaeology and the theory of movement

In Leiden, Caribbean archaeological research on the islands is guided by research questions that are rooted in the research themes of mobility and exchange. The essence of these research themes goes against the notion of the isolated communities that are sometimes imagined when island communities are considered. Rather, Leiden researchers reveal the dynamicity of contacts between the different sites and islands (e.g. Boomert 2000; Bright 2007; de Waal 2006; Hofman et al. 2007; Hofman and Hoogland 2004; Hoogland and Hofman 1999; Knippenberg 2006). The analytical focus hereby transcends the boundaries of the site, which is the archaeological locality of observation. The more explicit archaeological awareness that the principle of human movement underlies regional integration seems stronger in archipelagic environments than in mainland ones (Adams et al. 1978:491). In archipelagic environments the seascape surrounding the islands has been entered by humans in order to fish or to trespass; in other words: to cross, not to inhabit. It can therefore be referred to as a non-place matrix, which contrasts with the places of islands that can be inhabited. In the late formative days of Caribbean archaeology it must have been this inescapable archipelagic dichotomy between place and non-place that contributed to the continuing popularity of 'human movement' as the main explanation for diachronic changes in the archaeological record of the Caribbean islands (e.g. Rouse 1986:13-14,177-178, 1992:26-37).

In recent decades a shift in theoretical focus in the archaeological discipline has been suggested away from using 'human movement' as the explanation for cultural assemblages and their change through time towards explaining 'human movement' by questioning the act itself (Adams *et al.* 1978:523; Anthony 1990:908-909, 1997:29-30; Burmeister 2000:539; Lightfoot 2008:3-6; Hakenbeck 2008:20-21). A factor that greatly contributes to this shift is the fact that our units of observation in archaeology are becoming smaller. New technologies improve the archaeological resolution by, for instance, the ability to provenance specific individuals through their skeletal remains and objects through their chemical characteristics. It is now possible to elicit the individual in this discipline (Lightfoot 2008:3-4). In the quest for theory on this matter inspiration is drawn from other disciplines, ones that actually deal with the act of 'human movement', such as cultural geography, sociology and anthropology. In these disciplines the act of human movement can be directly observed. This inevitable advantage is surely responsible for the large contribution in these fields to the theory of human movement. This being said, these studies have not explicitly focused on 'human movement' in relation to material culture.

The present archaeological practice necessitates material anchors of reference, along which theory can be incorporated or created. In archaeology past dynamics are elicited through their material traces. The only situation in which archaeologists can directly observe human movement, together with the formation of a material assemblage, is in the present. To contribute to the archaeological theorizing of prehistoric 'human movement' involving the material world, archaeologists are therefore forced to conduct their own ethnographic studies. For Caribbean archaeologists the place to do this is in the tropical lowlands of South America where the movements of the descendant communities are observable.

Archaeologists focussing on the contemporary tropical lowlands of South America

We must keep in mind that the image of the small-sized mobile communities living in the tropical lowlands of South America today, can now, to a certain extent, be considered the result of post-Columbian histories. This does not mean, however, that spatial stasis should be ascribed to all protohistoric Amazonian communities, nor that the study of the movements of these and their members, both present and past, should be discarded all together (Alexiades 2009:1-2; Politis 2007:341-343; Rival 2002:177-188). This counts not only for the study of hunter-gatherers, but also that of horticulturalists. Although villages do not move, the people that inhabit them show, and have shown, the ease of moving in and out of these villages as individuals, in sub-groups or in groups. They have shown the willingness to move to new villages or to found new ones themselves. Only on relatively few occasions has this been with a whole group at once, which can be considered archaeologically the most readily visible manifestation of human movement (Adams et al. 1978:488-489). To counterbalance this archaeological emphasis on human movement, the movements in and around a single village, which shape its material assemblage in the process, should receive some more conceptual attention. In order to avoid misunderstandings of yet another tyranny of the present, a few words are needed to explain the goal of this research.

Archaeologists simply need analogies in order to build an interpretative archaeological framework. The uses of contemporary analogies in archaeology are therefore as old as the discipline itself. The first deliberate use of specific historical analogies in archaeology developed in early American archaeology, and was derived from the implicit strategy in the early decades of the twentieth century that later came to be known as the direct-historical approach (Lyman and O'Brien 2001:167-168; Steward 1942). However, the first theoretical paradigm in archaeology that actively created and explicitly correlated present universalized analogies with the past is associated with New Archaeology. Protagonists of this movement embraced the new methodology of ethnoarchaeology that aimed and still aims to construct universal analogies by means of contemporary ethnography, to come to an interpretation of the archaeological record (David and Kramer 2001:18-22,37; and for some Amazonian studies in this vein, see Carneiro 1979:42-55, DeBoer and Lathrap 1979:102-104; Roe 1980:64; Siegel 1990:320).

From the 1980s onwards, the post-processual reaction was to move away from these universal models by attempting to topple generalized archaeological reasoning by the ethnographic demonstration of cultural specifics. Their focus in the present differed by demonstrating these specifics as black swans or cautionary tales to discredit universalized archaeological reasoning for a specific region. Instead the post-processual perspective preferred a contextual-historical approach to archaeology as demonstrated through their material studies in the contemporary present (David and Kramer 2001:22-24,37; for Amazonian studies in this vein, see Bowser 2000:241-244; Politis 2007:325-344; Rostain, this volume). A perspective that has continued in this line is contemporary archaeology. This field of study combines anthropological material culture studies and archaeological studies on the recent past of the twentieth and twenty-first century. Here, the period studied is seen not as part of a source-target construction, but as a study of the recent archaeology in its own right (Buchli and Lucas 2001:4, see also McAtackney *et al.* 2007). In the approach taken here, bits of both strategies are adopted. On the one hand, it follows the post-processual and contemporary archaeological perspectives in seeing the ethnographic case study as temporally and regionally specific. It is intended first and foremost to connect to a preceding historic and proto-historic period in its own specific region. Seen from an archaeological perspective, the study of the recent period this ethnographic case is set in, has the advantage that it can be informed through the disciplines of anthropology, ethnohistory and archaeology. What brings these fields together in this perspective is the material dimension that can be observed. Aided by the abundance of ethnohistoric and comparative ethnographic texts, the understanding of an evolving material culture set in a specific regional history can be greatly enriched.

On the other hand, specific and particular as the case study may be, it must be stated that archaeological source-target constructions cannot be broken. It even works in reverse: the archaeologist in the present works towards analogical answers to his or her archaeological questions. It appears an inescapable analogical loop of reasoning. The challenge, therefore, is to *contrast* contextual sequences from different periods with the main goal of enhancing comprehension of both, instead of projecting only one onto the other as has happened, for instance, in early Amazonian archaeology. In these decades the model of the tropical forest culture dominated interpretation of Amazonian prehistory. In recent years, however, Amazonian archaeological evidence has been provided to contrast this long standing tyranny of the present for a certain part of Amazonia (Heckenberger *et al.* 1999:353-355). To create this contrast, compatible research categories should be adopted in the study of the recent period that can facilitate a subsequent contrast with an archaeological parallel. Material parameters are therefore sought that enable us to learn as much about the present as well as the past through their mutually generated differences.

To continue in this line of reasoning the material parameters of a single small, present day, village (Trio, subgroup Okomoyana), called Amotopo, were studied. The movements of its inhabitants are illuminated through the material dimension of the village: its regional integration is ethnographically studied from within.

The setting of Amotopo village

The Okomoyana village of Amotopo¹ is positioned on the eastern river bank of the Corentyne river in the midwest of Suriname, just to the south of the confluence of the Corentyne and the river Lucie and just to the north of the confluence of the Kutari and the New River. As historical ecologists in Amazonia have made us aware in recent decades, a closer look could show that we might in fact be dealing with an anthropogenic landscape. The vegetation of the area around Amotopo has unfortunately not been studied to date, but botanists have documented surrounding forests further into the Guyanese interior. These forests show a gradual increase from least disturbed forests characterized by mono-dominance of large seed tree species (rodent-, water- or gravity dispersal) in central Guyana, to a varied composition of smaller trees characterized by a dominance of small seed species

¹ All the villages on the Corentyne mentioned in this article, including Amotopo, are positioned on the map in figure 1. In these villages Trio (Cariban) is the main language. This language group is further divided into smaller identities. The families living in Amotopo, for instance, consider themselves as belonging to the Okomoyana, or "the Wasp people".



Figure 1 Trio villages on the Corentyne river.

(wind-, bat-, bird- or primate dispersal) in the Southern part of Guyana, which show a high disturbance rate mostly indicative of pioneer vegetation (Ter Steege and Hammond 2000:102). Trees in the flooded forests of the southern interior, which were smaller than those of the central area, were also documented by the botanist Hoffman for central and southern Suriname (Hoffman 2009:58). Extrapolated from this regional perspective, the village Amotopo, situated in the midwest of Suriname, would therefore be positioned in a more low-disturbed forest.

However, despite this having been crudely established, near the village of Amotopo contrasting vegetation patches of bamboo and cotton trees can be found that, together with ceramics, recall prior and historically unknown occupations (see also Versteeg 2003:36,38). Amotopo itself is positioned in a recently cleared area. This area was briefly explored and exploited by the Surinamese government just after the independence of the nation in the late 1970s and early 1980s. An airstrip was constructed there and even a road from Paramaribo up to Amotopo was constructed. A year or two after the construction of this road, the Surinamese guerrilla war of the 1980s disrupted the country especially in the interior. The site and the newly constructed road were deserted and quickly overgrown by the forest again. The witnesses of this period near Amotopo are the airstrip, a rotten wooden building and an old overgrown JCB.

Nowadays only the small Okomoyana village of Lucie and an eco-lodge half an hour upstream from Amotopo (the reason why the airstrip is still open) can be found in the vicinity. Beyond these it takes a day by motorized canoe upstream to reach the Aramayana ("the Bee people") village of Kuruni to the southeast and also a day to reach the Mawayana ("The Frog people") village of Casuela in the south. A day by canoe downstream lies the Aramayana village of Wanapan and further towards the coast lies its satellite village called Sandlanding which is positioned close to Apura.

Immobilia: Amotopo in a time slice²

"Science cannot deal with time and motion except on condition of first eliminating the essential and qualitative element- of time, duration, and of motion, mobility." Bergson (1913:115)

The first challenge in studying this village (seen in Figure 2) is coming to a terminology that connects the material dimension with the movements of its inhabitants. In the first place this is done by describing what, in village time, is moving which we will call 'mobilia', and those artefacts that are fixed in the landscape, which here are referred to as 'immobilia'. In an archaeological setting the whole of the material assemblage excavated consists only of



Figure 2 Amotopoan immobilia: Post structures (from left to right ST-20, ST-25 and ST-1) and stake structures (ST-8 and ST-9) in the foreground (2007).

² The lengthy rainy season from May till August in 2008 is chosen here as the time slice for this synchronic discussion.

immobilia. The terminology in this case helps to remind us that all this material was once 'moved'. Already familiar with its final archaeological situation, the task is therefore to reason to its point of initiation: from where an object or its material has been collected, to its relationship to the human movers, and finally to its immobilization process within the boundaries of the site. To provide ourselves with context, we will start with the immobilia. The term 'immobilia' refers to anthropogenic traces in the landscape that are fixed in space and are no longer moveable. Alteration of the landscape, as mentioned in the former section, is one aspect, the built environment is another. I will discuss the group of immobilia first, since they provide us with the necessary spatial context.

The village of Amotopo lies between the airstrip and the river Corentyne. The village consists of 23 refuse deposits, 11 hearths, 9 ditches and a total of 639 posts and stakes that have been recorded. Including the refuse deposits and peripheral posts and stakes, an area encompassing all traces, the site area has a surface of 8142 m^2 (0.81 hectares). Instead of the postholes, the posts themselves were documented. Although the actual depth of the refuse deposits could not be documented, it was possible to document its outline. Most of the posts and stakes can be defined according to the structures they support. A distinction is made here between the post structures (n=16) and the stake structures (n=26). They are distinguished on the basis of the intended depths of the supports (see Figure 3). A further



Figure 3 A Trio structure model with specific posts and stakes and their intended depths.

distinction can be made subsequently within the category of the post structures. This group consists of communal structures, the habitation structures, cooking structures and pot structures. The cavities for the supports of the post structure are dug according to human body measurements. The elliptical structures require the following supports: a roof ridge support (RRS), a roof support (RS) and an elevated floor support (FS). The intended post depths are measured by human leg length (ca.101 cm), arm length (ca.72 cm) and knee length (ca.35 cm) respectively. Another support, the roof extension support (RES) is the only one that is thrust into the ground.

Of the 'stake' structures all the supports are thrust into the ground probably to a depth of no less than 30 cm deep. The stake structure category consists of drying racks, intra-support structures, dog structures, camps, lavatories and plant supports. These structures are surrounded by a toss zone in which 23 concentrations of refuse, or refuse deposits, were observed (see Figure 4). Ditches had been constructed for several of the post structures to prevent rain water from pouring in. Altogether these structures, ditches and refuse deposits form the group of immobilia, since they form the non-moving artefacts that create the anchors in space within which the still moving artefacts operate. Of all these traces, the refuse deposits are the only localities that vertically accumulate on a daily basis. Below two specific types of mobilia, namely food products on the one hand and the humans themselves on the other, and their different role in the immobilization process will be elaborated on.

Mobilia: food in duration

Mobillia are defined as those animate beings or inanimate objects that are moved by humans without permanently fixing them to a geographical position. First, we introduce the movers of mobilia: the inhabitants of Amotopo consist of mainly one Trio speaking extended family belonging to the Okomoyana subgroup, subdivided into four main nuclear families. In 2008 there were 17 residents of which 13 were 'movers' consisting of 7 men and 6 women, the other four being children. With the term 'mover' I mean a person who brings substantial mobilia into the village. ³ For the purpose of this article certain food mobilia in the daily movements of the Amotopoans were tracked as they were observed for two months in the large rainy season of 2008.

The daily movements of the men and women are related to their daily tasks which are strictly gender related. The men go hunting and fishing and the women take care of the cultivation and preparation of the crops. In this respect men seem to have the first contact with everything that is outside the cultivated area of the village and the garden. Within the cultivated area anything can be handled and further processed by women. As we shall see, task division does not necessarily run along degrees of physical effort or strength that is needed in the process. The material focus that is taken on mobility here, is on the maximum spatial distance and the goods transported back to the village over the period of 57 days (nearly two months). First I will discuss the mobility patterns of the women.

³ Girls of young age already fully function in the daily tasks of the village, while boys of the same age still practice their hunting skills, in a playful manner, on anything that moves within the village boundaries. Two young girls, Merissa aged 10 and Felitia aged 14 years, are therefore considered 'movers' in this study since they also bring manioc and firewood from the gardens into the village.



Figure 4 The village of Amotopo and its development in isochrones.

Seen from a material perspective one of the tasks of the women is to bring loads of firewood, manioc (*Manihot esculenta*) and sugarcane (*Sachharum officinarum*) into the village. The loads they take on their backs and bring into the village can range up to 40 kg. Their movements are mainly restricted to the gardens that lie near the village. Over 25 days the 6 women of the village, with the occasional guest, collected 875 kg of firewood, necessary for the preparation of food and drink. Furthermore, they collected a total of 524 kg of manioc and 70 kg of sugarcane. On average this resulted in totals of 35 kg of firewood, 21 kg of manioc and 2.8 kg of sugarcane per day. The average maximum distance outside the village clearing is 206 m (disregarding one anomaly) and is restricted by the limits of the gardens (see Figure 6).

The men go out fishing and hunting, so the mobilia they bring into the village on a daily basis are mainly animals and the fruits they happen to encounter on the way. For the purpose of this article I focus here on the animal component. Over 57 days these 7 men, at times assisted by occasional guests, fished and hunted a total of 320 animals. The majority of this number, 79% (n=253), comprises fish in which the catfish category dominates, such as the Manduba (*Ageneiosus inermis*), the red-tailed catfish (*Phractocephalus hemioliopterus*) and the tiger shovelnose catfish (*Pseudoplatystoma fasciatum*), but other species such as pacu (*Myleus rhomboidalis*) and piranha (*Serrasalmus* sp.) were also caught. The other 21% con-



Figure 5 Fifty-seven days of mobilia collection by the Amotopoan men.
sists of hunted animals, of which mammals dominate, such as agoutis (*Dasyprocta leporine*), howler monkeys (*Alouatta seniculus*), armadillos (*Dasypus novemcintus*). A minority consists of birds, such as black curassows (*Crax alector*), and reptiles such as caimans (*Caiman croco-diles*) and iguanas (*Iguana iguana*). A daily average of this number can be calculated to 4.4 fish and 1.2 game for all the 17 residents together. The average maximum distance (disregarding one anomaly) travelled for these mobilia is 2,834 m (see Figure 5). The number of game is overrepresented since the hunting of the rodents was facilitated in this period by the flooding of the islands which in one instance brought a very fruitful bounty of twenty agoutis, one paca and seven armadillos.

The greatest part of the above mentioned mobilia was consumed and its remains deposited in one of the refuse heaps. Here the mobilia are subjected to their final deposition and are transformed into immobilia; they become a permanent feature, geographically fixed in the landscape. A smaller component of the food items, however, stays 'mobile' and was observed being given to members of other villages in return for other mobilia. Not only animals and root crops are given away to people outside Amotopo, but other mobilia gathered by the residents on trips to the coastal area are also desired exchange items for the members of other villages. One can think of industrial items such as metal pots, plastic containers, clothes, metal tools such as machetes, knifes, fish hooks, etc. that are exchanged mainly for perishable items, such as woven manioc squeezers, sieves, resins, arrow reed and bow wood.

Over a total period of 72 days⁴ only 35 kg of manioc (one carrying basket, T: *Katari*) was exchanged, together with some processed products, such as 7 kg of cassava bread and 5 litres of cassava beer. This must be considered a small amount, since a large number of the manioc plants in the gardens were rotten due to the heavy rains. A year before, in 2007, this had also happened at their former village of Kwamarasamutu. Then, Amotopo sent their former co-habitants a surplus of 400 kg of manioc. The observed animal exchanges over a period of 72 days showed that 67 individual animals⁵ of the total of fish and game were exchanged. Except for one smoked iguana, these were all fish. Averaged to a daily total, 0.95 of the 4.40 caught fish is exchanged from Amotopo. In other words, 22% of all the caught fish leaves the village.⁶

As we can see from the food items, the greater part of the mobilia are turned into immobilia through the final deposition on the refuse heaps, in the form of cassava peels and the skeletal remains of the animals consumed. The vertical growth of these refuse deposits is helped by the weeding of the village area, which is also a daily task in the rainy season. These weeds and soils are also deposited on the refuse heaps, which removes the stench of the rotting food remains. However, as we have seen not all the food is consumed within the village boundaries. The remaining part continues as mobilia until it becomes immobilized in another village. Mobilia that enter the village and subsequently leave its boundaries again is what is referred to here as the village flux.

⁴ The total fieldwork in 2008 lasted 72 days in which exchange could be monitored. Within this period trips to two other villages were made by the author, which meant that I was not able to track the daily mobility in and around Amotopo.

⁵ Of these 67 exchanged animals, 51 were whole individuals and 16 were represented by parts. This last mentioned should be understood as, for instance, only the exchange of a fish head or only its tail.

⁶ At a certain moment during my fieldwork a large exchange was being prepared that included several smoked and grilled mammals. This exchange, however, was cancelled at the last minute when it appeared that the small airplane, the intended vehicle of transport, was not continuing to its expected destination.



Figure 6 Twenty-five days of mobilia collection by the Amotopoan women.

Mobilia: humans in duration

"[Duration/motion] is not a quantity, and as soon as we try to measure it, we unwittingly replace it by space" (Bergson 1913:106)

Besides the food mobilia that are part of the flux before they are deposited, the same counts for the human residents themselves, who move their bodies through the landscape. How are their movements reflected in the built environment of the village? We start this discussion with the first residents in 2001 who made a clearing and a garden on the location that came to be known as Amotopo.

The Okomoyana stepbrothers Paneshi Panekke and Pepu Ipajari were both *Kapiteins* in the village of Kwamarasamutu which is the largest Trio speaking village in Suriname. In 1999 Granman Asongo, the paramount chief of the Trio, reasoned that their former land had to be cultivated again before people from the coast could claim it as their territory. The Okomoyana stepbrothers were asked to go back to the land of their Okomoyana ancestors,

Pehkëtë, which is roughly the area between the Frederik Willem IV falls and the confluence of Lucie and the Corentyne rivers. Another reason given for sub-group movements out of Kwamarasamutu is that the resources of Kwamarasamutu slowly became exhausted; the children also became sick, which made some families decide to leave the village.⁷

The Okomoyana families were not the only ones to leave Kwamarasamutu. Some years before they left, two Aramayana (the 'bee people') sub-groups, and a Mawayana (the 'frog people') sub-group moved out of Kwamarasamutu to found new villages to the north-west, along the border river the Corentyne. One settled on an abandoned military camp (Kuruni), one close by another military camp (Casuela) and another one on a prehistoric site (Wanapan below the Wonotobo falls). All seem to be positioned on former clearings.

In 2000 Kapitein Paneshi Panekke moved from Kwamarasamutu to Kuruni and finally to Casuela. He stayed there, while looking for a suitable spot in Pëhkëtë, and found just that near the airstrip of Amotopo. Then Pepu came from Kwamarasamutu and together they moved to the new spot. They decided to live in the wooden building that was already there, while constructing a garden 100m further away. As they started with just a small garden, they had no manioc and received some at times from the people of Casuela. When the first manioc was ready to be harvested in 2001 their wives Toke and Apëpïn came over to Amotopo, together with Pepu's daughter-in-law Consita, and a grandson named Aterie. First a camp structure (ST-5) was built, and from there the communal structures (ST-01 and ST-02) a kitchen structure and some dog structures were constructed in the garden. Slowly, a village clearing started to emerge. After a year Aterie left to go back to Kwamarasamutu and a nephew of Apëpïn, Erijam Numephë came over to Amotopo. Erijam was on his way to visit his mother in the Trio village Sandlanding. In Amotopo he helped with extending the limits of the garden and the village, and in the end, stayed for two years before he continued his journey.

In 2003 the household group of two nuclear families was expanded with another nuclear family: that of the eldest son of Paneshi, Atinio Panekke. He constructed a house for his nuclear family (ST-12). In 2004, Putu, the husband of the stepsister of Apëpïn, arrived in the village and started the construction of a house for himself and his wife (ST-25, and a kitchen, ST-26). A year later stepsister Sarawa came over. In the same year, two more nuclear families came to Amotopo. The first nuclear family was that of the eldest grand-daughter of Paneshi with her son and husband who constructed a house in the second ring (ST-32). Secondly, the youngest son of Paneshi, Mepi, together with his wife Sarita, arrived in Amotopo and moved into the house of his father (ST-20) who then moved his residence to an extension of the communal house (ST-01). In that same year, the other founding nuclear family, namely that of Pepu, his wife Toke and their daughter-in-law Konsita, moved out of the village. They founded their own village, called Lucie, on an island in the Corentyne, 5km downstream from Amotopo. In 2006, Aterie came back to Amotopo and started constructing his own house in the third ring from the communal house (ST-35).

In 2007 another nuclear family, the step sister of Apëpin, Sarawa, and her husband Putu moved out of the village to the Trio village Sandlanding in the north to collect her social security money and to visit her daughter. In the period of my last fieldwork it was not yet clear if she was coming back. In 2007 another nuclear family, that of the second son of

⁷ The village Kwamarasamutu has been continuously inhabited from 1976 up to the present. In 2004 the estimate for the number of inhabitants was between 800 en 900 (Carlin 2004:2), whereas by 2009 this estimate had diminished to 600 inhabitants (Carlin and Van Goethem 2009:17).

Paneshi, Petinia, his wife Senairë and their children, came to Amotopo. Paneshi built a house for them (ST-36). Petinia himself was looking for gold in the east and came a year later. In 2007 yet two other nuclear families (the family of Mepi and the family of Mereo) both went to live in Kuruni for a year. Both Mereo and Sarita were pregnant and Kuruni is the nearest village that offers governmental health care. In 2008 they both returned to Amotopo. In 2008 the nuclear family of the second son left to visit family in the Trio villages in Brazil, they did not know if they were coming back. In 2008 Erijam also arrived back after his visit to his mother in Sandlanding and started to construct a new model house (ST-42) as he had seen there, in the third ring next to Aterie's house.

As becomes clear from this diachronic description, not all the inhabitants of Amotopo are in residential stasis as they move back and forth between different localities. Whereas a rough concentric village lay-out could be distinguished in 2008, it became clear that only part of it was lived in. While new residents were building new structures in the second and the third circle around the communal structure, some residents of the first circle might already have left. In the early years of the village the human flux is reflected in a horizontal accumulation. The outline of the village in 2008 should therefore not be seen as the material representation of the 17 residents, but instead should be seen as the sum of its human flux over the 7 years which in this case is that of 24 residents.

So far, however, none of the villagers have passed away, which means that all 'movers' are themselves still 'mobilia'. They are still in flux. Some of the Trio seem to move residence at least three times in their lives (Mans 2009:83) and because of their frequent travels, it is not always easy to distinguish *the* place of residence for each individual at a specific moment. To get an idea of the immobilization of the human flux, we need some help from history. Through interviews a reconstruction could be made of the human flux of one of the first missionary villages, the village of Araraparu. Of the Araraparu residents documented by anthropologist Peter Rivière in the early years of the village (Rivière 1969:309-318), 146 residents and their subsequent residential movements could still be remembered by the Amotopoan elders. Of this group of residents 15 persons are said to have been buried in Araraparu. The 129 other residents, and those that arrived in Arararparu after Rivière's fieldwork, all moved to Kwamarasamutu and other villages. Although these numbers do not give us the exact human flux of the village, it does provide us with a relative estimate. The human immobilization, the remembered 'movers' that were eventually buried there, form in this case 10% of the total of remembered residents in the first years of Araraparu's existence.

The Amotopoan flux

This case study shows the relationship between Trio dynamics and Amotopoan traces, and calls for approaching the spatial configuration of the immobilia encountered in archaeological excavations as reflecting the flux of a locality. Since we cannot capture movement itself, we must approach them through the spatial configuration of its traces. The study of the spatial layout of a settlement can inform us about the former movements of its inhabitants. A first step to take is to perceive a village in terms of duration, which is helped by perceiving objects in terms of movement. Therefore, an archaeological site should not be considered a temporally flattened mirror of its population, but rather a distorted image of immobilia. The flux of mobilia slowly shapes a locality through a process of immobilization.

What I hope to have demonstrated in this paper is the difference between the two dimensions of mobilia and immobilia and my perspective on how they relate to one another. In archaeology we tend to look at the total of the material dimension of one occupation phase and connect it to a number of people who lived there. However, of the total village flux only a part is immobilized, while the rest moves on. These immobilia in turn have an effect on the subsequent flux of mobilia. The flux of food and of humans, as discussed here, are only two elements of this total. The food mobilia that become vertically immobilized on top of refuse deposits have an effect on the subsequent growth of a settlement. Although the human mobilia in the village Amotopo have not yet immobilized, their flux has already had a lasting impact on the spatial configuration of the village. The structures, seen as composite artefacts, are instantly immobilized upon their creation within the village boundaries. Whenever a structure is made by humans it limits the space in which the next structure can be built, and sometimes it even determines it. While the people themselves can move on, the existence of their former houses can still influence the position of a neighbouring new structure in the same village. The built environment is therefore an interesting category, from a movement perspective, that needs further exploration.

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Culture Contact

El Chorro de Maíta

A diverse approach to a context of diversity

Roberto Valcárcel Rojas, Darlene A. Weston, Hayley L. Mickleburgh, Jason E. Laffoon and Anne van Duijvenbode

This paper applies an innovative, multidisciplinary approach to the human and cultural remains recovered from the cemetery of El Chorro de Maíta, Cuba. The study of this indigenous cemetery, dated to late prehistoric and early contact period, provides new insights into the issue of Indigenous-European interaction and processes of culture contact. The authors have used an integrated osteoarchaeological approach, combining a demographic study of the population, the study of intentional cranial modification, dental anthropology and strontium isotope analysis with a (re)analysis of the material culture encountered in the burial context. This dynamic period of contact and interaction between the indigenous population and Europeans appears to be characterized by a greater degree of cultural, social, and biological diversity than hitherto recognized in the Caribbean archaeological record.

Este papel aplica un acercamiento multidisciplinario innovador a los restos humanos y culturales recuperados del cementerio de El Chorro de Maíta, Cuba. El estudio de este cementerio indígena, fechado al período prehistórico tardío y al período de contacto colonial temprano, proporciona nuevos percepciones sobre el tema de la interacción entre amerindios y europeos y los procesos de contacto cultural. Los autores han utilizado un enfoque osteoarqueológico integrado, que combina un estudio demográfico de la población, el estudio de modificación intencional cráneal, la antropología dental y el análisis de isótopos de estroncio con un (re)análisis de la cultura material encontrado en el contexto de los entierros. Este período dinámico de contacto y interacción entre la población indígena y los europeos parece caracterizarse por un mayor grado de diversidad cultural, social, y biológica hasta ahora reconocido en el registro arqueológico del Caribe.

Cet papier prend une approche pluridisciplinaire innovante aux restes humaines et matériels culturelles retrouvés dans le cimetière d'El Chorro de Maíta, Cuba. L'étude de ce cimetière indigène, datant de la préhistoire tardive et du début de la période Coloniale, éclaircit beaucoup sur la question de l'interaction entre Amérindiens et Européens et les processus de contact culturel. Les auteurs ont utilisé une approche intégrée ostéoarchéologique, combinant une étude démographique de la population, l'étude de la modification intentionnelle du crâne, l'anthropologie dentaire et l'analyse des isotopes de strontium avec une (nouvelle) analyse du matériel culturel rencontré dans le contexte d'inhumations. Cette période dynamique de contact et d'interaction entre la population indigène et les Européens semble être caractérisé par un degré plus élevé de diversité culturelle, sociale et biologique, que a été reconnu dans l'archéologie des Caraïbes jusqu'à présent.

Introduction

Understanding the process of contact between Europeans and indigenous peoples in the Caribbean is often difficult, since it does not always generate material evidence that is easily recognizable in the archaeological record. Certain details of the materiality of contact can elude detection by the traditional methodologies used to study indigenous sites; in order to elucidate details researchers must begin with an approach which is suited specifically to locating and identifying them (Deagan 2004:603-604).

Through the use of such traditional methodologies, an image of a distinct differentiation between the Native and the European has arisen, based on the implicit assumption that these cultural entities are homogenous. This approach reduces the ability to observe the inherent variability of both the indigenous and European worlds, which was so essential to the processes of contact and interaction. In this way we have also come to lose the diversity of the indigenous world, to one that is entirely reshaped by the European: a new and colonized being where multiple ethnicities are now grouped into social positions and categories which are solely dependent on the European schemes of control. In order to overcome these difficulties we must learn to perceive the process of contact as more than merely a significant presence of mixed cultural characteristics in archaeological sites. It is essential to use research tools that allow us to evaluate the diversity in processes, from various perspectives, in this way corroborating or completing the individual data sets in order to establish an integrated and coherent image.

In recent years, this approach has been the premise of archaeological investigations of the site of El Chorro de Maíta, in north-eastern Cuba. Our paper highlights the utility of a multidisciplinary approach as a resource to uncover rarely identified details of Indigenous-European interaction at this site and in this way better understand a society impacted by colonial actions. This study centres on the human and cultural remains of the cemetery situated at this site and reveals a universe both diverse and dynamic, as much in its schemes of interactions as in its social and ethnic structures. This provides a new perspective that contrasts with the predominant ideas on this cemetery and shows aspects hitherto unrecognized in the archaeological record of this region.

El Chorro de Maíta

The site is located in the present-day province of Holguín, about 4 km from the coast, on the slope of a hill commonly known as Cerro de Yaguajay. Preserved here are the remains of a large settlement of the cultural type known as *Etapa agroalfarera* (Tabío Rey 1984) or *Fase agricultores* (Guarch Delmonte 1990). Ceramics found at the site belong to a local variant of the Meillacan Ostionoid subseries (Rouse 1992:96; Valcárcel Rojas 2002:64). In 1941, Benjamin Irving Rouse explored the site and compiled a report on his observations on the site itself and the provenance of the archaeological materials found there (Rouse 1942:103-106). Between 1986 and 1987, archaeologists of the Departamento de Arqueología in Holguín, under the direction of José Manuel Guarch Delmonte 1996:20). The cemetery was the only one reported to date for this type of community in Cuba.

During these excavations, non-funerary spaces were also investigated. Here, and in the cemetery, small quantities of materials of European origin were discovered together with indigenous materials. These primarily consisted of ceramics and pig remains (*Sus scrofa*).

The non-funerary contexts are thought to be the remains of a village that surrounded the area of burials (Guarch Delmonte 1996:16).

Previous research

From the cemetery the remains of at least 108 individuals were excavated (Guarch Delmonte 1996:17), including one burial (no. 36) of modern appearance, and a skull (no. 22) with facial and craniometric characteristics which some investigators interpreted as being European (Rivero de la Calle *et al.* 1990:85). In the latter case, no post-cranial remains were found (Guarch Delmonte 1996:17-20).

The initial investigation focussed on the physical characteristics of the human remains and the analyses of the materials associated with the burials. Physical anthropological and craniological analyses included a study of the presence of fronto-occipital cranial modification (also known as tabular modification), and an interpretation of racial origin based on cranial morphology and stature. The results of these studies indicated that most individuals had modified crania with the exception of burial no. 22 (the possible European), one adult (no. 45) and a number of juveniles. The practice of cranial modification is typical for Late Ceramic Age communities in Cuba and the Greater Antilles in general (Guarch Delmonte 1996; Tabío and Rey 1985:143). Furthermore, excluding burials no. 22 and no. 36, all skeletons were found to be Amerindian (Guarch Delmonte 1996:21). The recent re-investigation of the physical anthropological characteristics of the skeletal population at El Chorro de Maíta, however, has shed new light on the composition of the group with regards to number of individuals, ancestry and the practice of cranial modification, as is discussed below.

A small number of burials contained objects of bodily ornamentation, ear spools, necklaces and bracelets composed of stone, coral, or vegetable resin (Guarch Delmonte 1996:21). But the cemetery's largest and most complex assemblage of ornaments was buried with skeleton no. 57, an adult female (Guarch Delmonte 1996:21). Beads of gold, quartzite, coral and pearl, as well as laminar pendants made of an alloy of gold, copper and silver, known as *guanín*, were recovered. Other objects made of these ternary alloys, a material of great value amongst the indigenous peoples of the Caribbean and handled mainly by *caciques* (Oliver 2000), included a small bell and a bird's head ornament with South American stylistic affinities (Guarch Delmonte 1996:21-22). In 17 graves, small metal tubes of about 29 mm in length were discovered, and were initially thought to have been made of copper (Guarch Delmonte 1996:20). In one case (burial no. 25) the tubes were attached to a metal disc covered in fabric, resulting in an ornament which was placed by the leg of the individual.

A great variety of burial positions, including extended burials were found. However, a supine position with the legs flexed to varying degrees was the most common, although some individuals, such as no. 72B, were interred face down. There was a certain tendency for orientation of the skeletons toward the north and the west. All burials appeared to be primary interments, although many burials had been disturbed. This occurred most frequently in the central part of the cemetery, where the largest number of burials was located. In some cases, rocks were placed on and around the bodies; in one burial the body was placed on a bed or base of stones.

Unlike other known burial contexts in Cuba, at this site no ceramic vessels containing food remains were reported, although in some burials ceramic and faunal (primarily pig bones and marine shell) remains were present but were considered to be intrusive (Guarch Delmonte 1988:163). In fact, there were no concentrations of remains to suggest domestic use of the cemetery area.

The picture generated by the previous studies underlined the importance of the site of El Chorro de Maíta for understanding indigenous funerary practices. The exceptional nature of the cemetery, not only its large size but also the presence of ceremonial objects, personal ornaments and its location in a settlement, is important as no others like it are known in Cuba to date. This suggests a pre-eminence of this place and indicates that it may have served as the seat or head of an incipient cacical organization. Supporting this interpretation is the possible existence of an elite group and of social differentiation inferred by the restricted distribution of bodily ornaments in burials. Furthermore the use of *guanín* and gold in one case is thought to be associated with the cacical elite (Valcárcel Rojas and Rodriguez Arce 2005:141,146). Although it was previously considered that contact with Europeans could have influenced certain visible aspects of the cemetery, such as the absence of cranial modification in certain (mainly juvenile) individuals and the practice of extended burial positioning (Guarch Delmonte 1996:22), this subject was not explored in depth and as a result the site became a symbol of the Native, and of indigenous religious practices and mortuary customs.

Recent research

In 2005 the Departamento Centro Oriental de Arqueología, of the Ministerio de Ciencias, Tecnología y Medioambiente, in Holguín, initiated a new investigation of the site under the direction of Roberto Valcárcel Rojas. This work, although still in process, has benefited from the collaboration of several international academic institutions, studying in parallel different aspects and areas of the site. At the start of this investigation, radiocarbon dates were obtained from the remains of two skeletons (Valcárcel Rojas 2002:142): burial no. 25 (conventional radiocarbon age 870 ± 70 BP, Beta – 148956; $\delta^{13}C/^{12}C$ = -19 %; 2 σ calibration: Cal AD 1020 to 1280 (Cal BP 930 to 670)) and burial no. 39 (conventional radiocarbon age 360 ± 80 BP, Beta – 148955; δ^{13} C/ 12 C = -19 %; 2 σ calibration: Cal AD 1420 to 1670 (Cal BP 530 to 280)). One additional date was secured from a space outside of the cemetery in Unit 5, which indicated the pre-Columbian use of this part of the site (conventional radiocarbon age 730±60 BP; Beta –148957; d δ^{13} C/ 12 C = -25.0 %; 2 σ calibration: Cal AD 1200 to 1320 (Cal BP 750 to 630) and Cal AD 1350 to 1390 (Cal BP 600 to 560)). In Unit 5, one skeleton was also found. In addition, the small metal tubes found in some of the graves were found to be made of brass (Valcárcel Rojas 2002a), a metal first brought to the Americas by Europeans.

These data confirmed both the pre-Columbian origin of the occupation and use of the site and the post-contact dating of some of the burials. Taking this information into account, subsequent investigations focused on determining the incidence of all aspects of European influence in the development of the settlement and the cemetery. Investigations of non-funerary spaces at the site directed by Roberto Valcárcel Rojas with Vernon James Knight and A. Brooke Persons, of the University of Alabama (Persons *et al.* 2007; Valcárcel Rojas *et al.* 2007) uncovered indigenous elements dating to the thirteenth through the first half of the fifteenth century, and soil layers containing a range of European ceramics known to have been used between 1490 and 1650 AD. Further investigations showed that the presence of animal and ceramic materials of both indigenous and European origins in the cemetery is more widespread than initially thought, and to date it is not possible to explain their presence in the graves. These details require further attention due to their potential for establishing a timeframe for certain burials. Some of the most revealing data, however, have been derived from the study of materials directly associated with individual graves, and from the re-analyses of the human remains utilizing new methods and techniques in collaboration with investigators from University College of London (UCL), and Leiden University.

Metals

In 2005 Valcárcel Rojas, Martinón-Torres, Cooper and Rehren, analysed the small metal tubes found in a total of 17 graves in the Wolfson Laboratories of Archaeological Sciences at the Institute of Archaeology at UCL (Martinón-Torres *et al.* 2007; Valcárcel Rojas *et al.* 2007). Six samples were investigated using energy-dispersive X-ray fluorescence (ED-XRF), optical microscopy and scanning electron microscopy with an attached energy-dispersive spectrometer (SEM-EDS). The analysis indicated that the samples were composed of brass – as opposed to copper as originally thought – with a composition similar to brasses obtained by cementation and produced in Central Europe during the fifteenth and sixteenth centuries, and were especially similar to brasses made in Nuremberg, Germany (Martinón-Torres *et al.* 2007:200).

Considering the results of these analyses, specifically the similarity in composition between all of the analysed pieces, it is highly likely that the remaining metal tubes from this site were also made of this type of brass. There is no evidence for the production of this metal in the Americas using the technique of cementation before the arrival of Europeans (Martinón-Torres *et al.* 2007:8). For this reason the tubes must have arrived at the cemetery following some form of contact between the local population and the Europeans. The shape of the pieces of metal also support this interpretation; a review of the pictorial sources, the data concerning European archaeological contexts from the fifteenth century (Martinón-Torres *et al.* 2007:201) and the information from early colonial contexts in the Americas (Deagan 2002:174-175), reveal that the tubes are elements used in European clothing during the fifteenth and sixteenth centuries, known as *agujetas* (or aglets), and used in cords and shoelaces to fasten articles of dress.

Perhaps some individuals were buried with European clothes. The presence of fragments of cloth reported in burial no. 57 supports this idea; nevertheless the available evidence does not permit a clarification of the situation at this time. In the case of burial no. 25 it is clear that aglets were used to fabricate an indigenous ornament; in the other burials the location of the aglets suggests that they were originally positioned by the wrists, near the neck and chest, or next to the waist. These places coincide with the areas where aglets would have been used in sixteenth century European clothing, but also with places on the body where indigenous peoples wore ornaments. For this reason it cannot be excluded that the aglets were obtained separately from items of clothing and used as an independent piece of personal ornamentation. In fact, the aglets, as independent objects were used by the Spaniards after their arrival to the New World, in exchanges with indigenous inhabitants (Álvarez 1977:92; Colón 1961:149), who attributed sacred qualities to brass that made them practically as valuable as the alloy *guanín* (Oliver 2000:214). Possibly these ideas of sacredness influenced the use of this metal to make the ornament found with burial no. 25.

The analysis of the metallic compositions of various objects of *guanín* and the smelting techniques used to make them confirmed details which are referred to in the ethnohistoric sources where such objects are mentioned (Martinón-Torres *et al.* 2007:197). The manufacture of alloys by smelting was not known in the Antilles at the time of the arrival of the Europeans, and the origin of the *guanín* is believed to lie in South America (Valcárcel Rojas *et al.* 2007:117,129). The bird's head ornament also displays certain iconographic elements that are commonly found on pectorals from the Tairona culture of Colombia (Valcárcel Rojas *et al.* 2007:121). The latter perhaps confirms the exotic origins of these goods, one of the reasons which must have contributed to their great value amongst these indigenous peoples (Oliver 2000:199).

These data not only change earlier interpretations of the nature of the metal tubes, but they also completely alter our perception of the cemetery by clearly demonstrating that a substantial number of burials (at least 17) date to after the arrival of the Europeans and thus that the process of contact between them and the indigenous peoples may have played a significant role in the formation and use of the funerary space. On the other hand, the presence of a set of *guanín* objects, the largest yet recovered in the insular Caribbean (although the precise dating of its arrival is unknown), indicates the important status of the individuals who were interred with brass objects, and suggests the existence of a community with well-defined social distinctions at the moment of contact.

Aspects of mortuary treatment

The presence of a substantial number of brass tubes shows that these burials definitely date to after the European arrival. A large number of individuals were found buried in an extended, typically Christian position, in which the body is placed on the back, with legs stretched, the hands crossed on the chest or the abdomen, and an east-west orientation of the body. A large proportion of the extended individuals (40 percent) were found with brass objects, enabling us to securely date them to after contact; however the remaining 60 percent could not be dated in this way. It is important to note, however, that this position is infrequently reported for pre-Columbian burial sites in Cuba or sites with "Meillacan" or "Chican" ceramics in the Greater Antilles in general (Crespo Torres 2000:157; Veloz Maggiolo et al. 1976:317, note 4). On the contrary, in early European towns this was the customary burial position, and it was even used to bury indigenous individuals at the contact period sites of La Isabela in the Dominican Republic (Guerrero 1999:108) and in Puerto Real in Haiti (Marrinan 1995:179). As many of the extended burials at El Chorro de Maíta conform more or less to this type, and a large number of them contain European brass, we suggest that the mortuary practices in these cases were influenced by relations with Europeans, and therefore that the number of post-contact burials at the site may be quite large. The presence of European burial positions at El Chorro de Maíta suggests substitution of local cultural practices (such as the typical indigenous flexed burial positioning) by new ones, tied to Christian burial rituals, perhaps an early expression of European attempts to Christianize the local peoples. Contrastingly, the majority of burials containing brass objects do not follow European burial traditions but indigenous ones, suggesting a situation of persistence and continuity of the local cultural traditions. In fact, burial no. 25, who was originally radiocarbon dated to the pre-contact period, was found with a brass ornament but was interred in an extremely flexed position. The shape and appearance of the ornament are typical for indigenous culture and style, showing the adaptation of this metal to indigenous cultural norms. This demonstrates persistence of indigenous culture during the early contact period, and suggests dynamic interaction between indigenous and foreign actors in which the indigenous population maintains certain cultural aspects while adapting others according to European influences.

On account of the radiocarbon dating of burial no. 25 the cemetery was originally considered to be – in part – pre-Columbian (Valcárcel Rojas and Rodriguez Arce 2005:132). The presence of brass in this burial, however, disqualifies this date. The supposed pre-Columbian origin of the cemetery is somewhat ambiguous at this point, as we must consider the absence of similar cemeteries during this period in indigenous Cuban sites. Furthermore, the substantial number of clearly post-Columbian burials at the site means that we are confronted with the possibility that we are dealing with either an indigenous burial area transformed into a cemetery through interactions with Europeans, or a cemetery established entirely after contact.

Demography and ethnicity

A reanalysis of the El Chorro de Maíta skeletal population was undertaken in June 2010 by Darlene Weston and significant alterations were made to the minimum number of individuals, and age and sex distribution reported by the original investigators. Adults were aged based on morphological changes to the pubic symphysis (Katz and Suchey 1986; Todd 1921a, 1921b), auricular surfaces of the os coxae (Lovejoy *et al.* 1985), and sternal rib ends (Işcan and Loth 1986a, 1986b) as well as the degree of cranial suture closure (Meindl and Lovejoy 1985) and dental attrition (Brothwell 1981; Lovejoy 1985). Juvenile age was determined using the stage of dental development (Smith 1991), long bone length (Sundick 1978; Ubelaker 1989), and the degree of epiphyseal fusion (Scheurer and Black 2000). As it is not possible to determine the exact chronological age of an individual based on morphological changes to the skeleton and teeth, adult and juvenile skeletons were assigned to standard age groups.

The biological sex of the El Chorro de Maíta skeletons was estimated based on various morphological traits of the skull (Ascádi and Nemeskéri 1970; Buikstra and Ubelaker 1994) and pelvis (Buikstra and Ubelaker 1994; Phenice 1969), in addition to metric traits of the clavicle (Jit and Singh 1966), scapula (Iordanidis 1961), humerus (Stewart 1979), and femur (Pearson and Bell 1917/1919; Stewart 1979). As is common practice, biological sex was not assigned to the juvenile individuals due to a lack of secondary sex characteristics found in the skull and pelvis (Scheuer and Black 2000). Table 1 illustrates the revised El Chorro de Maíta age and sex distributions.

In total there were 90 adults (67.7 percent) and 43 juveniles (32.3 percent). Among the entire sample population, the majority (16.5 percent) were aged Adult (18+ years). The adults were spread fairly evenly among the adult (18+ years), 18-25 and 26-35 age categories (16.5, 14.3 and 14.3 percent respectively), while amongst the juveniles, most (13.5 percent) were aged between 5-9 years. In the adult population, females outnumbered males, with combined totals of 44 (48.9 percent) and 39 (43.3 percent), respectively. When the age and sex data for the entire skeletal sample are combined, the most commonly represented group is juveniles 5-9 years (13.5 percent) followed by males 26-35 (9.8 percent) and adult females (18+ years).

Age	Male (M + M?)	%	Female (F + F?)	%	Indeterminate	%	Total	%
>0 (foetus)	-	-	-	-	2	1.5	2	1.5
<1 yr	-	-	-	-	3	2.3	3	2.3
1-4 yrs	-	-	-	-	8	6.0	8	6.0
5-9 yrs	-	-	-	-	18	13.5	18	13.5
10-14 yrs	-	-	-	-	6	4.5	6	4.5
15-17 yrs	-	-	-	-	6	4.5	6	4.5
18-25 yrs	7	5.3	11	8.3	1	0.8	19	14.3
26-35 yrs	13	9.8	5	3.8	1	0.8	19	14.3
36-45 yrs	5	3.8	9	6.8	0	0.0	14	10.5
46+ yrs	9	6.8	7	5.3	0	0.0	16	12.0
adult ≥ 18yrs	5	3.8	12	9.0	5	3.8	22	16.5
Total	39		44		50		133	≈100

Table 1 Age and sex distribution for El Chorro de Maíta.

The most notable feature of the El Chorro de Maíta skeletal population is the relatively large proportion of children it contains. Typical attritional cemeteries, i.e. those that accumulate naturally over time, have a large proportion of infants, with a decreasing number of deaths through to adolescence, and an increasing number of deaths through adulthood to old age (Paine 2000). Mortality in the El Chorro de Maíta cemetery population peaks at the 5-9 year age group and then remains fairly steady among the adults. A cemetery with a large number of children is more consistent with a catastrophic cemetery, i.e. one where mortality is due to a single or short-term catastrophic event, such as a natural or man-made disaster or a disease epidemic. As the catastrophic episode typically strikes without regard for age or sex, the cemetery population usually mirrors the once living population (Paine 2000). In the case of the El Chorro de Maíta cemetery, the temporal context of the site, spanning the pre- and post-contact periods, suggests that epidemic disease may have been an important factor in the structuring of the site's mortuary profile.

When Europeans colonized the New World, they brought with them a plethora of infectious diseases previously unknown in the indigenous populations. Having no immunity to these new diseases, the local populations often rapidly succumbed (Verano and Ubelaker 1992). A preliminary palaeopathological analysis of the skeletal population corroborates the possibility that acute infection may have affected the population.

Through the use of craniometrics, it was possible to estimate the ancestry of three of the El Chorro de Maíta individuals: no. 22, 45, and 81. Standard cranial measurements from these three individuals were compared to Howells' (1973, 1995) reference populations using the FORDISC 3.0 software package (Jantz and Owsley 2005). Cranium no. 22 scored most similar to a White male, cranium no. 45 scored most similar to an African male, while cranium no. 81 scored both equally similar to an African female and an Hispanic female, suggesting that this individual may be of mixed ancestry. These results are interesting as they reflect the types of ancestral groups recorded as being present on Cuba in the historical records at this time.

Intentional cranial modification

Intentional cranial modification has previously been defined as "the dynamic distortion of the normal vectors of infantile neurocranial growth through the agency of externally applied forces" (Moss 1958:275). The source of these forces can range from natural – due to a genetic defect or disease – to artificial modifications, in which human actions create a different shape of the cranium. A key distinction is made between intentional and unintentional modification. In the first instance, an altered head shape is created deliberately using a modification device made of bandages or boards. In cases of unintentional modification the resulting head shape is an unexpected side effect of child rearing practices, such as the use of cradle boards in North American indigenous societies or a prolonged supine sleeping position in modern infants (Gerszten and Gerszten 1995:375; Littlefield *et al.* 2005:45-46).

Intentional cranial modification is practised in various cultures throughout the world. Each society has different reasons for altering the head shape of their infants, but general motivations can be deduced from archaeological, anthropological and ethnohistorical literature. Aesthetic reasons and gender differentiation can play a role. Occasionally, religious motivations are mentioned, such as the desire to resemble the mountain of origin in certain Andean societies (Blom 2005:4; Schijman 2005:947). The expression of social rank or status is often cited as a motivation (Dingwall 1931; van Duijvenbode 2010). Among the Chinook of North America, an altered head shape expressed freedom and slaves were expressly forbidden to modify the heads of their children (Dingwall 1931:165-166). Finally, the presentation of group identity can also be an important reason, as has been demonstrated among several Andean populations (Torres-Rouff 2003). Since intentional cranial modification is a permanent alteration which must be initiated almost immediately after birth, these group identities are often based on kinship: family, clan, lineage or ethnic identity (van Duijvenbode 2010). Essentially, all motivations mentioned here are expressions of identity on a different level, representing parts of either individual or group identities.

An analysis of the practice of intentional cranial modification at El Chorro de Maíta was executed by Anne van Duijvenbode in July 2009. This study used a sample of the entire burial assemblage, based mainly on the preservation of the crania. The sample consisted of 54 individuals: 42 adults, 5 adolescents and 7 children. The sex distribution is relatively equal with 20 males and 19 females whilst the remainder of the sample could not be sexed.

Table 2 shows that intentional cranial modification is present in approximately 80 percent of the sample. Furthermore, 82.5 percent of the modified group has the same head shape: fronto-occipital parallel modification (see Table 3). Figure 1 shows an example of

Intentional Cranial Modification	Percentage of Population	Number of Individuals
Yes	79.6%	43
Possibly	3.7%	2
No	16.7%	9

Table 2 Prevalence of intentional cranial modification inEl Chorro de Maíta.

Type of Modification	Percentage	Number of Individuals		
Fronto-Occipital Parallel	82.5%	33		
Fronto-Occipital Vertical	2.5%	1		
Occipital Flattening	7.5%	3		
Frontal Flattening	7.5%	3		

Table 3 Distribution of shapes encountered in El Chorro de Maíta.

the fronto-occipital parallel modification which is typical for this sample. Overall, the pattern at El Chorro de Maíta shows a large percentage of the population undergoing the practice and little variation in the type of head shape. Further analysis of the data revealed no significant correlations between head shape and sex or grave goods. A potential correlation between age and intentional cranial modification was observed. When the sample is divided into age groups, 90 percent of the adult individuals have an altered head shape. However, among the adolescents this is only 60 percent and among children 57.1 percent. (van Duijvenbode 2010).

Individual 72B is the only exception in the homogeneity of shapes in the sample. This female has fronto-occipital modification of the vertical subtype (see Figure 3). She was buried in an unusual position: facing down with a large stone on top of the legs. The different shape of the skull suggests that this individual may not have been born in the region of El Chorro de Maíta.

A number of motivations for intentional cranial modification were discussed earlier. Gender differentiation can be ruled out, since no significant correlation was found between sex and head shaping. The presentation of social status or rank is also unlikely. There was no relation between grave goods and intentional cranial modification and the high incidence of similar shapes would mean that the status or rank would have to be shared by at least 80 percent of the population. Only one source was found discussing potential religious motivations. Cuban researcher Herrera Fritot suggests that head shaping was an attempt to mimic the head shape of a turtle, an important animal in indigenous Caribbean mythology (in Rivero de la Calle 1960:252). No evidence supporting this hypothesis was found.

Aesthetic reasons are a possible motivation, since the altered head shape is considered beautiful by indigenous informants in several colonial sources on the circum-Caribbean (Davies 1666:338; Roth 1924:412; Stedman 1988:314). An alternative reason behind the



Figure 1 A: Lateral view of individual 51, B: Superior view of individual 91, C: Lateral view of individual 72B.

practice is the expression of kinship-based group identities. The relatively high percentage of modification among the population combined with one main type of modification is connected to the expression of group identity in societies with a higher level of social organization (Torres-Rouff 2003). The pattern of intentional cranial modification in El Chorro de Maíta encountered during this research is similar to her results and the relation to group identity in the Greater Antilles, which had already been suggested based on ethnohistoric sources and earlier archaeological research (Crespo Torres 2005:62), was confirmed by this investigation.

Finally, the question remains why there is a significantly lower percentage of altered crania amongst the children and adolescents. This unequal distribution was also noted by the original investigators and Guarch Delmonte (1996:21) suggested that it might be related to a discontinuation of the practice due to European influence. This explanation is in line with the known effects of intercultural contact on the practice from ethnographic and ethnohistoric sources (van Duijvenbode 2010). However, without a sound internal chronology for the burials in the cemetery, this hypothesis was difficult to test as there was no evidence that the children and adolescents concerned were contemporaneous. The recent reanalysis of the skeletal assemblage has concluded that the demography of the population suggests that the cemetery was the result of a single or short term event. This is the first evidence that these burials could be considered contemporaneous and that the discontinuation of intentional cranial modification might indeed have been due to European influence on the local population.

Intentional dental modification

Individual 72B has been mentioned above for her remarkably different type of intentional cranial modification in comparison to the rest of the persons interred at El Chorro de Maíta, most likely indicating that she did not originate from that area. In addition to the dissimilar type of intentional cranial modification, this individual presents a clear case of intentional dental modification, which was identified during a dental anthropological study of the human remains from this cemetery, conducted by Hayley L. Mickleburgh in July 2009.

The practise of intentional dental modification has a long history in various cultures across the globe for aesthetic, religious, ritual and socio-cultural reasons. A range of techniques for dental modification are known, such as filing, chipping, cutting, drilling, incising, inlaying with stone materials, and extraction or ablation (Alt and Pichler 1998; Vukovic *et al.* 2009).

Individual 72B's dental modification affects the upper incisors and canines, with the central incisors most prominently modified. All upper incisors and both upper canines appear to have been filed extensively, considerably reducing the crown height and leaving the occlusal surfaces extremely smooth and flattened. The central incisors have a further modification of the occlusal surfaces at both the mesial and distal margins, in the form of buccolingual grooves which extend across the entire occlusal surface. The grooves are 1.5 to 2mm wide and 1.5mm deep. In frontal view, the grooves appear to be semi-circular in shape, however the pits of the grooves are in actual fact almost completely flat (see Figure 2). The remaining teeth in the dentition are unmodified and only very slightly worn. There is no corresponding wear on the lower anterior teeth, excluding a masticatory activity as the cause. Moreover, the striking symmetry and precision of the grooves and flattened oc-

clusal surfaces indicate that the modification must have been intentional as opposed to activity-induced (i.e. the result of the use of the teeth as tools).

A small number of individuals with clear intentional dental modification has previously been found in the Caribbean region, however in all cases these individuals were identified as African slaves (Crespo and Giusti 1992; Handler 1994; Handler *et al.* 1982; Haviser, personal communication 2010; Rivero de la Calle 1974; Stewart and Groome 1968). As most of these burials were accidental discoveries, little information is available on their precise archaeological context. However, what is clear is to the dental modifications in these cases are significantly different in appearance and aetiology than the El Chorro de Maíta case. The African modifications tend to be achieved by rough chipping or cutting of the enamel, although more refined chipping also occurs. Furthermore, most African modifications resulted in a decidedly pointed or 'fang-like' appearance of the anterior teeth. The general appearance and degree of craftsmanship displayed in individual 72B is more





Figure 2 A: Frontal view of the upper incisors and canines of 72B, showing clear intentional dental modification, B: Oblique occlusal view of the upper incisors and canines of 72B.



Figure 3 Schematic representation of the intentional dental modification in 72B.

consistent with Mesoamerican types. When compared to known types of dental modification from Mesoamerica as documented by Romero, the central incisors can be classed as category A4 with further A2 modifications of the occlusal surfaces, and the lateral incisors and canines as category A4 (Romero Molina 1986). No previous cases of this type of dental modification are known for the pre-Columbian Caribbean islands. Considering the absence of a precedent for individual 72B's type of dental modification in the Caribbean islands together with her dissimilar type of cranial modification, the possibility that this individual originated in Mesoamerica must be considered.

Early studies into dental modification resulted in elaborate classification schemes still in use today, often taking special care to separate the types of modification according to their geographical origin (see Romero Molina 1986; Rubín de la Borbolla 1940; Stewart 1941). More recent studies on Mesoamerican sites in Belize, Guatemala, Honduras and Mexico have highlighted regional and temporal differences in both style and technique of dental modification. Results point to the use of dental modification as a manner of expressing identification with a lineage, polity, ruler or region (Havill *et al.* 1997; López Olivares 1997; Tiesler Blos 2001; Williams and White 2006). Through comparison of the type of dental modification present in the dentition of individual 72B with the types presented in these early and recent works it appears that this type of modification is most compatible with types known for the Mesoamerican region of Belize, Guatemala and Honduras. In particular, this type of modification has been documented for Postclassic sites in Belize (see Williams and White 2006). Considering the dating of the site of El Chorro de Maíta, which falls generally within the Postclassic time period, we tentatively suggest that individual 72B originated from the mainland region of Belize.

Isotopic perspectives on diversity

Strontium isotope analysis has been widely applied to the exploration of migration from the archaeological record (Beard and Johnson 2000; Bentley *et al.* 2007; Bentley *et al.* 2005; Bentley *et al.* 2002; Grupe *et al.* 1997; Knudson *et al.* 2009; Muller *et al.* 2003; Price *et al.* 2008; Schroeder *et al.* 2009; White *et al.* 2007; Wright 2005). Its primary benefits derive from the fact that it allows researchers to directly identify migrants (individuals who are interred in a region which is isotopically different from that one in which they raised), instead of relying on various proxy measures from the material record that characterizes more traditional approaches to migration studies in archaeology. The primary limitation of this approach is that only first generation migrants from isotopically different regions are identifiable (Price *et al.* 2006). Therefore, strontium isotope analysis alone (or any other single isotopic system) does not usually permit the direct identification of geographic origins. For these reasons, strontium isotope analysis and similar biogeochemical approaches are considered to be complementary with, various other macro-scalar approaches to migration and mobility which rely on human biological or material evidence.

The usefulness of strontium isotope analysis rests on several basic premises: 1) that strontium isotope ratios (⁸⁷Sr/⁸⁶Sr) vary spatially; 2) that owing to broad similarities to calcium, strontium replaces calcium in the inorganic fraction of human bone and dental enamel; 3) that unlike bone, dental enamel is a relatively fixed tissue (once formed, it is metabolically and isotopically inert) and thus does not undergo subsequent remodelling throughout an organism's lifetime, meaning that dental enamel preserves the isotopic signal of the time of formation or mineralization; and 4) unlike most other light stable isotopes, strontium does not undergo substantial mass dependent biofractionation, meaning that very little alteration of isotopic ratios is observed as one moves through the food web (Bentley 2006; Price *et al.* 2002).

All aspects of strontium isotope analysis were conducted by Jason Laffoon at the Faculty of Earth and Life Sciences at the Free University Amsterdam, The Netherlands, according to protocols described in Booden *et al.* (2008). Samples were analysed for strontium isotope composition with a thermal ionization mass spectrometer (TIMS, ThermoFinnigan MAT 262 RPQ plus). All measurements were automatically corrected, using an exponential correction factor, to an ⁸⁶Sr/⁸⁸Sr value of (0.1194). For external reproducibility and quality control, we used the certified reference material NBS (NIST) SRM-987 as our external standard. Over the period of analyses, analyses of this standard produced results of (⁸⁷Sr/⁸⁶Sr mean value = 0.710236 +/- .000009 standard deviation, 2σ).

Herein we report on the data obtained from human (n=79) and faunal (n=8) samples. All strontium data for human samples were derived from dental enamel, primarily from premolars although other dental elements were analysed when a suitable premolar was not available. The faunal samples were collected and analysed both to contribute to assessments of the local range of biologically available strontium and to test the possibility of animal mobility. Faunal samples from controlled excavations of this site include three hutia (family *Capromyidae*) remains and two land snails (family *Camaenidae*) which form the basis of our initial local range estimates. In addition, samples from three domestic pigs (*Sus scrofa*) were also analysed to determine if these animals were being raised locally or imported into the site/region. Sr isotope analysis was conducted on dental enamel for the hutia and pig samples and on shell for the land snails. Results of our strontium isotope analyses from El Chorro de Maíta are displayed in Figure 4. The human data is provided on the left side of the graph and is divided into four categories; adult females, adult males, unsexed adults, and juveniles (unsexed). The faunal remains lie on the right and are separated by type. We tentatively define the local range of ⁸⁷Sr/⁸⁶Sr as approximately 0.70795-0.70880, based on the absolute range of the faunal data (excluding the pig samples for reasons discussed below). This range is in rather good accordance with the majority of the human samples as would be expected if most local residents were buried in or near their place of birth. Therefore the majority (n=60/79, or ~74 percent) of the humans are determined to be local. All three pig remains have been identified as nonlocal and fall at or near the lower end of the range of human values.

As the geology of Cuba is rather complex (Pardo 1975) we have not placed too much reliance on the geological literature in our estimations of strontium isotope variation. In fact, owing to direct and indirect marine influences on the local ecosystem we support the approach proposed by Price *et al.* (2002) whereby local range estimates primarily rely on the analysis of local faunal remains. Since our local range estimate is based on a relatively few number of samples (n=5) we consider it to be preliminary at this time. Research to better refine the local range at the site itself including analyses of more local fauna samples and to determine the extent of spatial variation of strontium isotope signals throughout the region is ongoing.

Nonetheless, inferences can still be made based on the structure of the isotopic data patterns themselves and comparative correlations with other data sets from a contextual perspective. In other words, future research may suggest a slight broadening or shifting of the local range but this does not appreciably alter our initial interpretations, for example the fact adult males and females display broadly similar ranges and variance. However, there are some observable differences between these two groups. For example, to date 8 of the 30 adult females or possible females analysed are identified as nonlocals (~27 percent), while 10 of the 28 males or possible males analysed are identified as nonlocals (~36 percent),



Figure 4 Strontium Isotope Results for El Chorro de Maíta.

suggesting slightly higher rates of male immigration relative to females. In addition, the Sr values from the males display greater variance with the 3 lowest and the single highest outliers. We interpret this as evidence of more variable geographic origins for these nonlocal males. In the absence of adequate chronological controls we cannot determine at this time whether these patterns reflect either or both, pre- and post-contact mobility patterns, although we might expect rather diverse origins for adult males in early contact period burial assemblages. Lastly, 16 of the 17 juveniles analysed have been identified as local. This agrees with expectations based on the premise that juveniles are less likely than adults to have migrated within their relatively brief life spans.

Other notable patterns are revealed through the comparison of the strontium isotope data set relative to other lines of evidence, for example mortuary practices (burial location, type, position, orientation) and dental and cranial modification practices. Of the adult females analysed, only one (no. 81) clearly lacks cranial modification, she has been identified as an individual of possible mixed African and Hispanic ancestry and has also been identified as a local. All four of the females interred with grave goods are locals, while none of the nonlocal females have been interred with grave goods. Of the four adult males with clearly unmodified crania, 3 are nonlocal, including no. 45 (discussed below), and one is local (no. 22), an individual identified as being of European ancestry. It is interesting to note that while brass tubes have been recovered from both local and nonlocal graves, ornaments of other materials such as stone and coral are exclusively found in association with local individuals. Also, various burial positions (flexed, semi-flexed, and extended) occur amongst local and nonlocal individuals.

The Sr isotope signatures of certain individuals require further elaboration. Burial no. 45 has an ⁸⁷Sr/⁸⁶Sr ratio of 0.711033, which is a clear outlier for this population and for the Caribbean region in general. In fact, our analyses of several hundred Sr isotope ratios from the West Indies, and a review of previously published Sr isotope results from archaeological and geochemical research within this region revealed no results for local individuals which are this radiogenic (high). We interpret this highly elevated signal as supporting the hypothesis of a non-Caribbean origin for this individual, although this identification must remain tentative until a database of strontium isotope variation for the Caribbean region is developed, a project which is currently underway (Laffoon and Hoogland 2009). Strontium isotope signals alone cannot definitively pinpoint a specific geographic origin owing to the limitations of equifinality (Price *et al.* 2007). As burial no. 45 has been identified as a person of African ancestry, a comparison of his Sr signature with published Sr ranges for various regions of Western Africa, from which enslaved migrants were known to have originated from, may help to further narrow down this person's geographic origins (Schroeder *et al.* 2009).

Burial no. 72B has been highlighted as unique based on the presence of cranial and dental modification types which are rare for this region but have been reported for Mesoamerican groups, and a unique burial treatment for this assemblage (prone with large stones placed on the lower extremities), as previously discussed. The ⁸⁷Sr/⁸⁶Sr ratio of individual no. 72B is 0.707546, a result that also clearly identifies this individual as a nonlocal. Although this signal is also consistent with natal origins in many regions of the Caribbean, the available contextual evidence suggests a possible Mesoamerican origin for this individual. This Sr isotope signature is consistent with geographic origins in the Yucatán Peninsula, particu-

larly with reported Sr ranges from the Southern Maya lowlands (Hodell *et al.* 2004; Wright 2005).

Lastly, all three Sr results from the domestic pig samples fall outside of our local range estimate, suggesting nonlocal origins for the pigs also. This illustrates two important points about this analytical technique; 1) that caution must be taken in the selection of 'local' faunal samples for local Sr range estimates owing to the possibility that certain species are often highly mobile, in this case probably attributable to transhumance, and 2) that Sr isotope analysis thus offers the potential to investigate non-human mobility as well (Hoppe *et al.* 1999; Schweissing and Grupe 2003).

Discussion and conclusions

Our multidisciplinary approach to the cemetery of El Chorro de Maíta has profoundly altered the perception of this site, in part owing to a better understanding of the diverse influences in the formation of this mortuary space. Understanding the nature of these diverse influences has been complex given the difficulties in establishing a chronology for the burials.

The reanalysis of the human remains has indicated that the cemetery contained a much higher proportion of children between 5 and 9 years of age than would typically be expected for a cemetery assemblage which accumulated over a long period of time. These findings seem to indicate a single or short-term catastrophic event, such as a natural or man-made disaster or a disease epidemic. The latter is most likely, considering the temporal context of the site and the results of the preliminary palaeopathological analysis. Furthermore, another important result of this study has confirmed the speculated European origin of individual no. 22, while also identifying no. 45 as an individual of African origin and no. 81 as a mestizo of mixed African and European ancestry.

The identification of European brass provides a reliable chronological indicator, showing that the cemetery was maintained during the post-Columbian period and that many of the burials date to this time period. The latter corresponds well with the observed catastrophic mortality profile of this burial population, as increasing contact during this period led to the exchange of diseases to which the indigenous population had no resistance. At this time in El Chorro de Maíta traditional indigenous mortuary practices were combined with new cultural influences, such as extended (Christian) burial positions and processes of adoption of European materials into indigenous culture. The predominant fronto-occipital parallel cranial modification, typical for Late Ceramic Age cultures in the Greater Antilles, appears to have served as an indigenous group identity marker at El Chorro de Maíta. Its absence in individuals' no. 22, 45, and 81, together with clear evidence of different ancestry, may have been a visible marker of their foreign affiliations. In other cases, especially amongst the children, the absence of cranial modification could be related to changes generated by European actions. Individual 72B is the only person showing a different type of cranial modification (fronto-occipital vertical). This female also has remarkable dental modification of the upper front teeth. These two traits together are unique among known indigenous burials from the Caribbean islands, and along with this person's strontium isotope signature appear to indicate a Mesoamerican origin (possibly Belize). Although we do not have reliable chronological data for this individual at this time, it is possible that her presence here is tied to colonial activities, including the forced migration of indigenous slaves to the Caribbean and Cuba from different regions of the Americas (Deagan and

Cruxent 1993:94). Similar causes can be suggested for individual no. 45, although in this case the burial is clearly post-contact and the origin is most likely Europe or Africa, areas from which early slaves were taken to the Antilles.

The strontium isotope analysis shows that the bulk of the population at El Chorro de Maíta is of local origin, while it has also revealed the presence of a substantial number of nonlocal individuals of diverse geographic origins, including at least two possible long distant migrants or foreigners originating from outside of the Antilles. Furthermore, the presence of individual no. 81 indicates genetic mixing between the different groups represented at the site.

The resulting picture generated by the mixture of cultural elements at El Chorro de Maíta is that of a dynamic situation where conscious incorporation of certain European cultural elements by the indigenous population took place.

Historical and archaeological investigations (Deagan and Cruxent 1993:94-95) have already indicated that in many early Caribbean colonial settlements indigenous populations were grouped together with Europeans, Africans and *mestizos*. However, the fact that individuals of indigenous Caribbean, Mesoamerican, African, European and mixed ancestry were all buried in the cemetery of El Chorro de Maíta indicates a degree of diversity that has hitherto not been identified in the Caribbean archaeological record. While many questions still remain, our new integrated osteoarchaeological approach has shed light on the brief but turbulent period of changing cultural and social dynamics at El Chorro de Maíta. This period appears to have been characterized primarily by a high degree of cultural, social and biological diversity. Further investigation of the site of El Chorro de Maíta, including the radiocarbon dating of individual no. 72B, will lead to an even better understanding of a period in the history of the Caribbean which is still poorly understood.

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CONFLICTING COSMOLOGIES

The exchange of brilliant objects between the Taíno of Hispaniola and the Spanish

Floris W.M. Keehnen

First contact between the Taíno peoples of the Greater Antilles and the Spanish resulted in the convergence of two very distinct cultures. An attempt was made to bridge the undeniable and clear differences in worldview, valuations of wealth and aesthetic cognition through the exchange of objects. A major focus of these exchange relationships was on objects whose glittering surfaces appeared equally attractive to both sides. Attractive for different reasons though: the Spanish were mainly interested in their economic value, while for the Taíno shiny objects had a symbolic meaning as part of a much broader context in which these were considered to contain powerful cosmological forces. This paper shows the very different cultural attitudes towards shiny matter and explains how this led to the creation of new social and material worlds in the course of the contact period.

El contacto inicial entre los pueblos Taíno de las Antillas Mayores y los Españoles tuvo como resultado una convergencia de dos culturas muy distintas. Se hizo el intento de superar las diferencias, evidentes e innegables de su cosmovisión, el valor otorgado a la riqueza material y la concepción estética mediante el intercambio de objetos. Muchos intercambios Taíno-Españoles se enfocaron en objetos con superficies brillantes, los cuales por esta característica parecieron igual de atractivo para los dos grupos. Sin embargo, atractivos por motivos distintos: los Españoles principalmente tenían un interés económico, mientras que para los Taínos la importancia de los objetos brillantes surgió de un contexto más amplio en el cual fueron considerados de poseer poderosas fuerzas cosmológicas. Este artículo revela las diferentes actitudes culturales ante estos materiales relucientes y explica como estos actitudes resultaron en la creación de nuevos mundos sociales y materiales durante el período de contacto.

Le premier contact entre les peuples Taínos des Grandes Antilles et les Espagnols a abouti à la convergence de deux cultures très distinctes. Une tentative fut faite pour combler les différences indéniables et manifestes dans la cosmologie, l'évaluation des richesses et la cognition esthétique par le biais d'échange d'objets. Ces relations commerciales se sont surtout concentrées sur des objets dont les surfaces brillantes étaient tout aussi attractives pour les deux parties. Attractives pour différentes raisons, pourtant: les Espagnols étaient principalement intéressés par leur valeur économique, alors que pour les Taínos, ces objets scintillants possédaient un sens symbolique comme faisant partie d'un contexte beaucoup plus large dans lequel ils étaient considérés avoir de puissantes forces cosmologiques. Cet article montre les attitudes culturelles très différentes envers ces matières brillantes et explique comment elles ont conduit à la création de nouveaux mondes sociaux et matériels lors de la période de contact.

Introduction

The encounter between the Europeans and the indigenous peoples of the Caribbean – referred to as the Taíno – on 12 October 1492, the day that Columbus made a landfall in the 'New World' on the Bahamas, is one of the most illustrious examples of culture contact.¹ The first encounter was followed by reconnaissance voyages to the Greater Antilles and the founding of La Navidad, the first Spanish settlement in Hispaniola – nowadays divided into Haiti and the Dominican Republic. Two worlds that were not previously aware of each other's existence came into contact and began adopting elements of each other's material culture (Deagan 2004).

From the onset of contact the Taíno and the Spanish started to exchange all kinds of objects in a friendly fashion.² The basic assumption is that the Spanish were mostly interested in gold, while the Taíno were willing to trade for pretty much whatever was given to them. The Europeans were used to operate within the Mediterranean interaction networks linking Europeans with Africans and Asians. In an attempt to find a westward route to Asia, Columbus had looked forward to acquire access to an overwhelming abundance of oriental spices and gold. However, the Spanish were unexpectedly confronted with the highly developed interaction networks operating among the peoples inhabiting the Caribbean area (Hofman 2008). The situation they encountered caused them to change their expectations and tactics (Las Casas 1992).

The author's current MA research aims to characterize the role of European material culture in intercultural contacts between the indigenous peoples of the Greater Antilles and the Europeans during the early contact period. In so doing, it is expected to elucidate the nature of the social relationships maintained between these cultures and how these came to influence indigenous culture. One cannot make full sense of the process, events and outcome of contact between cultures without a thorough understanding of all the actors involved. An important key to understand the cultures in question is to find out what objects they valued the most and why it were exactly these objects that were preferred. Most likely, part of the answer can be found in tracing the objects that were used in exchange relationships. The importance of the trade in these objects correlates with the relative value of these objects in their respective exchange systems. An important question to be answered is: why did the Taíno value the things that were given by the Spanish? Was their unfamiliarity with the objects alone, the unknown origin and the odd appearance the objects had for the Taíno, reason enough to value the European objects (Helms 1988)? Perhaps, but what was the reason for differences in the value given to the objects (Las Casas 1992)? This paper concentrates on the importance of a particular class of objects used in the exchange contacts between the Spanish and the Taíno: objects with gleaming surfaces. In general, there seems to have existed a special interest in these objects, both before (Boomert 1987; Oliver 2000; Rodríguez Ramos 2010) and during contact (Cooper et al. 2008; Martinón-

¹ Rafinesque, a Franco-American naturalist, adopted the term 'Taíno' for the original inhabitants of the Greater Antilles as he mistakenly believed that this was their "collective proper name" (Rafinesque 1836:163). In fact many different ethnic groups inhabited the islands, who most likely used the names of the local (chiefdom) polities to which they belonged as self-ascriptions (Rouse 1948). Anthropologists and archaeologists have continued to use the term ever since, however.

² Within a year this initial friendliness turned into violence, and mutual mistrust arose. Due to forced labour, sickness and harsh treatment the original population was decimated in a couple of decades (Deagan and Cruxent 2002).

Torres *et al.* 2007; Saunders 1999; Vega 1979). How valid is this observation and how can we explain the Taíno attraction to these objects?

Different cognitive processes

The exchange relationships between the colonists and the colonized in the early contact period were heavily influenced by the "socio-cosmic universes" of the involved actors: two different cultures that did not share the same perceptions tried to come to the best possible mutual understanding, not seldom resulting in a complete misunderstanding of which they were often unaware (Mol 2008). These perceptions can however be interpreted as constructs of more fundamental differences in cognition; the convergence of dissimilar cultures being a collision of different cognitive frameworks. These peoples had different worldviews and different modes of thought. Arguably, these differences can be traced back to the places of origin of those peoples. The way human perceptions of value develop depends on the socio-cultural context in which a person is raised. Recently, a socio-psychological study of Nisbett et al. (2001) has proposed that social organization is influential in two basic ways for establishing different modes of thought: "indirectly by focusing attention on different parts of the environment and directly by making some kinds of social communication patterns more acceptable than others" (Nisbett et al. 2001:294). For example, Nisbett and her colleagues contrast Western and Eastern thought, and question the assumption of an existing universality of basic cognitive processes among all human groups. Their basic premise shows that people from the East are "holistic, attending to the entire field and assigning causality to it, making relatively little use of categories and formal logic, and relying on 'dialectical' reasoning, whereas Westerners are more *analytic*, paying attention primarily to the object and the categories to which it belongs and using rules, including formal logic, to understand its behavior" (Nisbett et al. 2001:291).3

Although this study has been conducted among Westerners and Asians, the same oppositions can be observed between Westerners and other peoples around the world (e.g. Haviser 2008; Reichel-Dolmatoff 1981, 1996). The socio-cultural context of a culture affects the way by which the world is known in that particular culture; how the socio-cosmic universe is constructed, and how worldview affects the way of thinking. The oppositions between the Oriental and the Western mental templates are much the same as those between Amerindian people and Europeans. Systems of Amerindian classification and meanings are based on animistic beliefs and a holistic cosmovision. Different objects, phenomena, materials etc. are seen as belonging to the same class or group, sharing roughly the same significance and meaning. On the contrary, the western classification is taxonomic; it divides the world into kinds of physical matter, which makes us hierarchically distinguish animals from plants, and minerals from trees (Descola 1996).

The "New World" encounter thus was not only a collision of different cultures, but even more so a clash between peoples with totally different mental templates. The unfamiliarity with the socio-cosmic universe of the other is demonstrated in numerous occasions during the early contact period (Mol 2008). Amerindians all over the Americas who

³ Different modes of thought follow different logics. These modes of thought are culturally specific, which means this are not innate differences that are somehow caused by any "racial" distinctions. Hereby I wish to stress the mental unity of humanity in which there is no variation in mental faculties whatsoever among people around the world.

were confronted with the arrival of Europeans, tried to fit the newcomers and the objects and ideas they brought with them into existing cultural and social categories. The contact between the Spanish and the Taíno needed to be inserted in existing cosmovisions and cognitive patterns, which was not an easy process. During the contact period there was the continuous problem of how to treat these newcomers and how to classify them according to the indigenous system of value; the question was whether they were equivalent to commoners, elites, or gods (Viveiros de Castro 1998; Wilson 1990). This uncertainty is reflected in the initial responses to the presence of the Europeans that were logical and sensible from a Taíno point of view, but might have seemed strange and inexplicable to Europeans (Altman and Butler 1994).

Glittering exchange

Different cognitive perceptions, worldviews and systems of value brought along differences in aesthetic cognition (Haviser 2008). An attempt was made to bridge these differences through objects; objects as mediators between the distinct mental and physical worlds of the New and the Old World peoples (Miller 1987). Although there were clear, visible distinctions in aesthetic expressions between these peoples - their worldview being translated into their material culture – at first instance it was very difficult to define which objects were proper to give, and what objects in return would have been of commensurate value. Perhaps, experiences of seemingly uneven exchanges of earlier gift-giving with native groups along the western coasts of Africa were wrongly taken as indications that notions of value and property were non-existent for the peoples who had been encountered in the non-western world. The intentions of the giving of gifts in the early colonial Caribbean - a well established practice among both parties - most likely were different: the Spanish tended to see gifts in their economic value, calculating and intended to acquire the greatest return for the least expenditure, whereas the Taíno gifts were more heavily imbued with symbolic meaning, often gestures of wealth, respect or dominance (Axtell 1992). Social valuables were given and received by both parties but only interpreted and understood in their own cultural contexts. The unfamiliarity with the socio-cosmic universe of the other led to many objects being given (especially to the Spanish) of which the meaning was not completely understood by the receiving party. Very soon, however, the peculiarities of the other became more fully understood, although still not completely (Mol 2008). This process of hybridization resulted in a focus on objects that appeared equally attractive to both sides because of a single characteristic: a shiny surface. To both cultures this characteristic was already important in their own cultural contexts, yet the reasons for this were very different. Next to gold and silver, the Europeans valued only a couple of other shiny objects, like pearls and emeralds, that had high exchange rates at the European markets.⁴ For the Amerindians, however, shiny objects and the interplay of light on their surfaces were considered much more important and formed integral parts of daily life (Saunders 1999).

⁴ These objects also served political functions and were imbued with symbolic meaning as they were used as gifts at the royal courts of Europe (see Saunders 1999:251-253 for the role of pearls in Europe; and e.g. Zemon Davis 2000).

Worlds of brilliance

A glittering appearance and shiny surface turned an object into a social valuable for the Taíno. Valuing objects of light is, however, not restricted to the Taíno or the Caribbean. Nicholas Saunders has called this phenomenon "the aesthetic of brilliance" and shows its prevalence across the Americas (Saunders 1998, 1999, 2003). Its expression differs through time and from culture to culture. The materials used to exemplify this aesthetic, along with the technologies preferred to fabricate objects from these materials, varied, as well as the philosophies that influenced these choices. Although cultural traditions could be very different from each other, they were based upon a common theme in Amerindian thought - caused by a collective cosmovision that is believed to have been shared by many of the indigenous peoples of the Americas (Saunders 1998:226-230). Here, the concepts of cognitive theory are applicable, suggesting that this collective cosmovision is a direct result of the underlying cognitive patterns shared by the pre-Columbian inhabitants of the Americas; a mental template that consists of a holistic mode of thought that is influenced by social organization. Shared socio-cultural settings would have geared them for this "aesthetic of brilliance"; definitely this was an aesthetic cognition that differed from that of the Europeans!

Understanding the structure and concepts of the Amerindian cosmovision is a prerequisite if one aims to explain the enchantment brought about by these shiny matters. Ideas concerning the spiritual and creative power of light were integral parts of Amerindian cosmovision. Through time there are numerous cultural elements, myths and stories that imply the presence of a spiritual brilliance in the worldview of these peoples. It seems that a general shamanic worldview existed across the Americas, in which light, brilliant colours and glittering matter were indicators of the presence of spirits or a supernatural essence (e.g. Furst 1976:46,131; Kensinger 1995). The power of light was a source for strength and energy. The social, material, and cosmological worlds were imbued with this power, functioning to symbolize, but also generate and maintain life. For example, the reflective property of snowy mountains and lakes indicated the presence of portals by which the world was connected with the spirit realm (e.g. Reichel-Dolmatoff 1981:28). For the Inca, light brought structure and order to the universe (Classen 1993:38). Many other cultures across the Americas used strength-giving light in their battles (Czitrom 1994:193,196; González 1992:215) and symbolic forms of war (Vennum 1994:36). The accumulation of brilliant objects displaying the manifestation of light served as indicators of wealth and power for Taíno elites and noblemen (Oliver 2000:205-209).

The opposite is also true; where light signified life, darkness was death, illness, misery and cosmic disorder, for instance with disease or during eclipses. Among the Aztecs a person's soul was luminous if healthy and living right (López Austin 1988); otherwise it would turn dark (Gingerich 1977:324; Ruiz de Alarcón 1984:162). This opposition makes the power of light an ambivalent force that is transformational and therefore possibly dangerous. Only shamans, priests and others who had mastered these forces through their knowledge and performance of rituals, were therefore able to configure the cosmic (Saunders 1999:245). The Amerindian cosmological world was not only governed by analogical reasoning, but also put more emphasis on multi-sensory experiences – in which one sensory stimulus would have led to automatic experiences in a second cognitive pathway – than Europeans. This is, for instance, experienced by shamans when using hallucinogenic drugs to enter a specific state of consciousness. This synaesthetic aspect to their shamanic worldview shaped the meanings attached to the lights, sounds, tastes, and smells of ordinary life. These were quite contrary to European experiences, which were mainly focused on visual stimulae (Saunders 1999:245; see also Classen 1990; Howes 1991:3-5).

Brilliance was deemed a powerful and sacred force, and was as much present in daily life as it was infused in the world around them. It manifested itself in many natural phenomena, like the sun, the moon, water, ice and snow, clouds and rainbows. The same can be said about many natural materials (Saunders 1998:226-230). In the Caribbean, for example, brilliant colours and shininess can be found in all kinds of translucent shells, of which the *Lobatus* spp. and *Olivia* spp. are good representatives as they were often used for decorative purposes. Also feathers and plumage from colourful parrots and macaws had the connotation of brilliance. The fact that these materials occurred naturally in animated and sacred landscapes contributed to their value. Because these materials possessed the positive spiritual and creative power of light, artefacts that were made from such matter were by definition given the same status (Saunders 1999:246). Artefacts with such a value were often made from shell, polished wood and minerals like jade. Headdresses were composed of macaw feathers displaying a wide range of colours. Also objects fabricated from metal alloys possessed this inner sacredness, as will be discussed below. Saunders (1999:246) states that "making shiny objects was an act of transformative creation, converting - in a sense recycling - the fertilizing energy of light into brilliant solid forms via technological choices whose efficacy stemmed from a synergy of myth, ritual knowledge and individual technical skill". Because the energy in the natural materials needed to be transferred to the objects that were fabricated from them, special meaning was given to the production of shiny items: the physical forms were embodiments of the power of light. The same importance was given to the exchange and ritual display of these objects. Many of these items were reserved for elites and *caciques* as to display their status and justify their divine origin and power (Oliver 2000:296). Their unique ability to mediate between the different worlds was represented by the objects they wore.

Furthermore, the extensive use of these objects in exchange relationships across the entire Caribbean area indicates their importance as social valuables (e.g. Hofman et al. 2007). These exchanges can be seen in a diachronic perspective, originating from early inter-island transactions of personal adornments fabricated from various forms of "social jade", most notably serpentinite and nephrite. The earliest evidence for this has been found in archaeological context on the island of Puerto Rico, with dates for the sites containing these lithic materials going back to 2500 BC (see Rodríguez Ramos 2010 for a complete overview of sites). Natural sources have been located mainly in the northern Lesser Antilles (Knippenberg 2006). For the subsequent two millennia no evidence has been found for any exchange of these stones across the Caribbean sea. Nevertheless, the foundations were laid for the development of long-term macro-regional interactions (Rodríguez Ramos 2010). This is expressed by the transition to the "Iridescent period" (500 BC-AD 500/700) – a term proposed by Rodríguez Ramos (2010) - for which non-local stones like amethyst, aventurine, quartz, beryl, peridot, and garnet have frequently been found in Huecoid and Saladoid deposits; exotic materials that are sourced to northern South America (Siegel and Severin 1993:77). Exquisite micro-lapidary work consisting of jadeitites, turquoise and a variety of other gemstones were absorbed in the long-distance exchange networks operating among the peoples inhabiting the circum-Caribbean area (e.g. Boomert 1987; Hofman et al. 2007; Rodríguez Ramos 2010). A case in point for the dispersal of shiny matter in

this period is exemplified by the first documented find of a *guanín* (see below) artefact at the site of Maisabel, Puerto Rico (ca. AD 100), which is associated with the archaeological Hacienda Grande period (Siegel and Severin 1993). This find indicates that already in early ceramic times the material must have been desired by the inhabitants of the Greater Antilles, who otherwise would not have invested time and effort to acquire it over vast geographical distances. The distribution pattern of shiny materials in this period presumes a "shared underlying significance accorded to brilliant media" (Saunders 2003) among the peoples inhabiting the circum-Caribbean area; although local reinterpretations were possible, shared ideological traditions made the exchange of these items possible (Rodríguez Ramos 2010).

European influences

However, as previously mentioned, during early contact times European values and ideas concerning shiny matter were conflicting with those of the Taíno; the major ambition of the European colonists being the acquisition of gold. The material was only valued from a commercial standpoint, its mineralogical purity and weight as an index of convertible wealth. Conversely, the most prized indigenous metal was guanín (an indigenous term), which is an alloy of gold, copper and silver. The mineralogical impurity of this alloy made it of little value to Europeans. The qualities of indigenous valuables were often neglected by the Europeans and these objects became revalued according to a European system of commercial exchange. Saunders describes it effectively as "where previously an object's value had depended on a mixture of the general and personal meanings attached to it, it was now judged by physical characteristics alone" (Saunders 1999:246). So, with the arrival of the Europeans, changing social and material worlds were created by a re-contextualization and revaluation of indigenous material culture. The attitude towards certain objects changed and resulted in redefined relationships between the Europeans and indigenous peoples (e.g. Pugh 2009). The exchange of objects, the negotiation of different value systems, and the exchange of cultural information can be seen as part of a continuous process of creating social relationships. Related processes of acculturation and transculturation were a direct result of these contacts (Levinson 2006).

Unintentionally in the first place, lots of objects that were brought along by the Spanish displayed characteristics that were valued by the Taíno. Certainly not all objects that were shipped to the Caribbean were first intended to serve as trade items. However, they soon came to be so, when the Spanish realized the significance of particular items to the Taíno. Pieces of majolica, glassware, beads, and hawk bells were assigned with a divine or spiritual character, for example. Especially, the reflective property of glass made the material highly valuable; the Taíno were even happy with a broken piece of it since it could be used as a mirror. The Spanish ceramics had, unlike their own pottery, brilliant colours, and resplendent glazed enamel, which was therefore highly appealing to the islanders. Beads were made of glass, amber, stone and carnelian; all crafted in such a way as to display a gleaming surface. Small green beads seemed to have frequently formed part of the cargo and were called *abalorio*', "a term that generally refers to beads of little value" (Deagan 1987:157). The spiritual brilliance and the power of light that were from a Taíno point of view inextricably bound up in the materials of the aforementioned objects arguably formed important reasons for them to value these European items. Most likely, because of the materials the

European objects were made of, many other imported items must have attracted Taíno attention as well.⁵

The sacredness of metals

A special class of objects with a shiny surface became particularly important with the arrival of the Europeans; metals – especially copper-alloys – attracted the attention of the Taíno. Studies of Bernardo Vega (1979) and José Oliver (2000) have focused on the symbolism and classification of metals from an emic perspective. These works provide a useful background to understand the relation between the aesthetic of brilliance and the cognitive significance of copper alloys seen from an indigenous point of view. In the case of metals it was however not only their (often reddish) colour and shininess that accounted for their brilliance that were valued, but other characteristics seem to have played an equal role here. Remoteness, heavenly connotations, but also smell and taste are considered to be (at least) equally important reasons for their valuation (Helms 1988; Oliver 2000). This statement touches upon the concept of *guanín*, which I will discuss below in more detail.

Although endowed with a glimpse of brilliance, the least valued metal was pure gold (or *caona* in native terms), probably because of its natural occurrence. Quite contrary to European ideas, the Taíno only used gold for good appearance rather than wealth. The carefully crafted composition of gold with other materials, for instance nuggets of gold used as inlays in wooden statues (*duhos*) was valued the most. It was the configuration of gold with other (more valued) materials that gave it its power and that enhanced the value of the total display of regalia. The material itself was significantly less esteemed and less sacred than metal alloys that were based on copper. More important therefore were *latón* or brass (copper and zinc), *billón* (copper and silver), and *guanín* or *oro de baja ley* (gold, copper, silver) (Oliver 2000:198). One thing we can immediately conclude from this is the existence of a discrepancy among the values the Taíno gave to 'things of brilliance'; normal gold did not have the same attraction, despite having the same brilliance! Presumably, thus, an aesthetic of brilliance alone is not enough to account for pre-Columbian indigenous valuations of metal.

The metal that was the most special and valued was *guanín*. Its distant provenance and association with remote places made it a very attractive material (Helms 1988). *Guanín* does not occur naturally, but was a manmade product that had to come from the South American mainland. For the acquisition of the material some suggest a direct route across the Caribbean Sea, while others think a route through the Lesser Antilles is more likely. For the Taíno there was no way of understanding how this amalgamated material could have been formed: unlike the people from South America, the Taíno did not know the technique of melting. The alloy therefore had connotations with a divine origin and the spirit world. In contrast to gold and copper, which *were* found on Hispaniola, *guanín* was thus considered to be a very rare material. Usually *guanín* artefacts were worn by *caciques* in combination with other adornments such as *caona*, shell-beaded belts or quartzite neck-laces (*cíbas*). These regalia displayed their chiefly power and their privileged role as media-

⁵ Among these were religious and ritual objects like crosses, medals, amulets, and other items believed to possess magical properties that were taken for Spanish magico-religious purposes as well as for the indoctrination of the indigenous peoples with the Catholic Church. Probably some of these were used as gifts rather than for use by the Spanish. Finger rings, nails and coins would have had the same connotations (Deagan 2002:37-38, 87).

tors between the profane and sacred worlds (Bray 1997; Martinón-Torres *et al.* 2007:202; Oliver 2000:203-209).

The importance of brass only becomes noticeable after conquest, since it was undoubtedly imported by the Spanish (Vega 1979). Las Casas mentions the indigenous material's denomination as being *turey*, referring to something from the sky, as their name for sky was turey (Las Casas 1992:I-287). This material shared most characteristics with guanín. It originated in a remote place, the celestial disk (Siegel 1998), and was therefore imbued with sacredness. Linguistically, *guanín* and *turey* "correlate with and allude to the guality of iridescence that was imputed to a divine and remote origin" (Oliver 2000:206). Furthermore, its peculiar appearance and smell further added to its sacred character (Oliver 2000:198-199). One of the items the Spanish used for exchange purposes were brass hawk bells or *cascabeles*. The Taíno were very much fascinated by these trinkets because the material they were made of was thought to be guanín. Also the sound they produced when tinkling was appealing (Vega 1987:44-46). Cascabeles that were tied together resembled the Taíno rattlelike musical instruments that they used during their social and religious areitos (Las Casas 1992:I-286-287). In the course of the contact period the Spanish cunningly misused the Taíno value system by exchanging these European trinkets in order to have the least possible expenditure for the greatest return. In this manner, the Spanish obtained exchange rates of 200 caona for 1 guanín (Bray 1997). It is known that the Spanish promoted the import of guanin from the South American mainland to be used in their exchange with the Taíno on the Greater Antilles, as to acquire pure gold in return (Martinón-Torres et al. 2007).

The essence of things guanín

So, the explanation of the value of guanín cannot be restricted to its worth as a gold-copper-silver alloy alone. As mentioned earlier, Amerindians divided their world into classes comprised of different objects, phenomena, materials etc. that share roughly the same significance and meaning. The metal guanín was therefore only one material belonging to a whole class of guanín. Many more things were considered to be guanín: stars, the loggerhead turtle (Caretta caretta), the Cuban bee hummingbird (Mellisuga helenae), and specific flowers (e.g. Cassia occidentalis and Passiflora foetida) (Oliver 2000). In Taíno mythology even a South American off-shore island is mentioned that is called *Guanín*, which is also the term being used by the Taíno when referring to the south (Sauer 1966:61; Vega 1987:44). It is postulated by Oliver (2000) that the relation of these 'things of guanín' is demonstrated by the linguistic evidence from Taíno vocabulary. The prefix gua- seems to return in denominations of many indigenous social valuables, like guanín, guacamaya (the Taíno word for parrot), guaní (the hummingbird), and guaíza (or shell face); names of chiefs and mythical beings contain the prefix as well.⁶ Also the words for the turtle (caguamo) and the tagua-tagua plant (i.e. Passiflora foetida) contain the morpheme -gua-. The symbolic importance of trees from the Guaiacum sp. may be just another addition to this intriguing class of valuables (Ostapkowicz, this volume). Possibly we can speak of the essence of 'things guanín' (Oliver 2000). These objects or phenomena all possess the aesthetic of brilliance characterized by: a reddish (-purplish) colour, like the guanin metals; an ap-

⁶ Next to their personal names, Taíno *caciques* and principal men often bore several honorary titles, which "almost invariably contained a reference to precious metals, celestial bodies, and their shiny qualities" (Oliver 2000:205).

pealing iridescence, like the feathers of the macaw; or resplendent and shiny qualities, like the natural pearls or manufactured beads. In addition they also share other characteristics such as a sweet, pungent or peculiar smell, like some plants or an exotic origin. A combination of these treasured characteristics would have produced a greater effect; this could have occurred in a natural combination, but more often were actively brought together through the recombination of separate materials into one object.

Indigenous adaptations

As mentioned before, the European re-contextualization of objects had a dramatic impact for the Taíno attitude towards certain objects. Saunders (1999) has demonstrated this by applying a biographical approach to pearls in order to document the changing social and material worlds. A similar process takes place in the Caribbean where the function of the hawk bells was altered in the course of the contact period when they began to serve as a measure for tribute payments (Las Casas 1992:I-437).⁷ The significance these objects had in the value system of the Taíno changed drastically. It appeared that in the end, differences between Amerindian and European worldviews and systems of valuation were not reconcilable (Saunders 1999:244). As a result, changing attitudes towards objects like the *cascabeles* are characteristic of the changing relationships between the Spanish and the Taíno.

Nevertheless, positive changes occurred as well, when it was possible to incorporate cultural elements of the other into already existing cultural categories. Brass, for instance was conceptually transformed from a European functional metal into a symbolic and ornamental *turey* in Taíno cosmology (Martinón-Torres *et al.* 2007:202). Similarly, sherds of majolica and glass beads have been found in Taíno burial contexts (García Arévalo 1990:271). It seems that their glittering appearance was one of the most important reasons that made the objects attractive to the Taíno. Most likely these items now were funeral offerings as the dead were buried with their most prized personal possessions. Taíno beads, referred to as *cibas*, were now being replaced by the Spanish beads. Religious syncretism and symbolic substitution of lots of items seemed to have been common phenomena in the contact period.

Concluding remarks

This paper has offered different strands of argumentation that are thought to be helpful in the determination of the role European material culture played in the exchange relationships between the Taíno and the Spanish in the early contact period. With different cognitive frameworks mutual understanding of the other's value system was hardly possible: processes of hybridization resulted in reinterpretations of the materiality of the objects the other used to exchange. The very different attitudes to light and brilliance, as a result of conflicting cosmologies, exemplify the stark contrast and incommensurability of Amerindian and European systems of value.

For the Taíno the items that were brought along by the Europeans fitted in their already existing socio-cultural framework, since these objects displayed all of the symbolism an object would be valued for. An important characteristic, substantially adding to the value

⁷ In 1495 Christopher Columbus formally established the tribute system on Hispaniola. It forced Taíno *caciques* to collect of each Indian over fourteen years of age "enough gold to fill a small bell every three months" (Las Casas 1992:I-437).

of the object, was the "aesthetic of brilliance". Its shininess indicated its nature as a powerful cosmological substance, while the ability to produce it was regarded as a supernatural and magical talent (Axtell 1988:131; Saunders 1999:247). However, as the different indigenous valuations of pure gold as opposed to copper alloys have indicated, we must be cautious with giving too much explanatory power to the concept of the "aesthetic of brilliance". Shininess would have been an important quality of objects in pre-Columbian value systems, but remoteness (in geographical and symbolic distance) and esoteric knowledge (Helms 1988) for example would have been given similar importance.

The valuation of things that have a gleaming surface (or are otherwise considered to be brilliant due to their direct relation with other shiny phenomena) is closely linked with the esteem that was given to the class of "things *guanín*" that Oliver (2000) has discussed. These are not identical concepts however, since not all the values attributed to "things *guanín*" correspond to those attributed to objects displaying the "aesthetic of brilliance"; rather, the "aesthetic of brilliance" can be interpreted as a principle characteristic of the essence of "things *guanín*", a concept evolved from a particular emic cognitive perception of the world.

The attraction the Taíno had for the European objects has been proposed to originate from shared socio-cultural settings among the peoples inhabiting the circum-Caribbean area (Rodríguez Ramos 2010). This provided them with the same cognitive makeup responsible for the development of a holistic cosmovision and way of thinking, a product of symbolic reasoning. The "aesthetic of brilliance" (Saunders 1999) and the essence of "things *guanín*" (Oliver 2000) are concepts that are constitutive of the value given to a specific class of objects and/or materials that westerners do not recognize as autonomous categories of value. These concepts would have developed through time by materializing them into objects that circulated across the Caribbean Sea. Future work is needed, however, in order to map more sites across the circum-Caribbean area that provide us with a more detailed diachronic perspective on the role of shiny objects. Only more data and a comparative analysis towards the mainland will help clarifying the attractiveness of this intriguing class of materials. Finally, in order to fully account for the specific values the Taíno gave to the European objects the local social dynamics of the contact period have to be studied in more detail.

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IN SICKNESS AND IN HEALTH

Possibilities for studying the social and cultural implications of treponemal disease in the Caribbean area

Rachel Schats

Treponemal disease or treponematosis is a highly visible and very painful disease. It starts out as a skin disease, but eventually also the skeletal system of the infected individual becomes infected, making this disease also visible in the archaeological record. The disease has been noted in many Caribbean skeletal assemblages. Due to the high visibility of treponematosis it is unlikely that it would have gone unnoticed in prehistoric societies. It is interesting to study how the disease was socially and culturally perceived and dealt with. Based on ethnohistoric sources and material culture from the Caribbean area, it appears that treponemal disease had special significance in prehistoric Caribbean societies. This paper shows that the study of social and cultural implications of disease has great potential also outside the Caribbean area.

La enfermedad treponemal o treponematosis es una enfermedad muy visible y dolorosa. Comienza como enfermedad de la piel, eventualmente afectando el sistema esquelético del individuo enfermo, al final produciendo la visibilidad de esta enfermedad en contextos arqueológicos. La enfermedad se ha observado en muchas assemblajes de esquelétos en el Caribe. Debido a la alta visibilidad de treponematosis, es improbable que no hubiera sido notado en sociedades prehistóricas. Es interesante estudiar cómo la enfermedad fue socialmente y culturalmente percibido y enfrentado. De acuerdo con documentos etnohistóricos y la cultura material procedente del área del Caribe, hay indicaciones que la enfermedad treponemal tenía significado especial entre las sociedades del Caribe prehistórico. Este artículo argumenta que el estudio de implicaciones sociales y culturales de la enfermedad puede ser de mucho valor también fuera del área del Caribe.

La maladie tréponémale ou tréponématose est une maladie facilement reconnaissable et extrêmement douloureuse. Elle commence par une maladie de peau, puis se propage au squelette de l'individu contaminé, rendant cette affection également visible dans le registre archéologique. Cette maladie a été notée dans bon nombre d'assemblages osseux caribéens. Vu l'évidente reconnaissance de la tréponématose, il est peu probable qu'elle ait pu passer inaperçue dans les sociétés préhistoriques. Il est intéressant d'étudier comment la maladie a été perçue et traité socialement et culturellement. A partir de sources ethno historiques et archéologiques de la région caribéenne, il apparaît que la maladie tréponémale ait eu une signification particulière au sein des sociétés préhistoriques de la Caraïbe. Cet article montre que l'étude des implications sociales et culturelles de la maladie a aussi un grand potentiel en dehors de l'aire caribéenne.

Illness and disease

In archaeology, disease is generally studied through pathological lesions left within the human skeleton, a research area which is termed palaeopathology. Unfortunately for archaeologists not all diseases leave their marks on the human skeleton. Joint diseases such as arthritis, infectious diseases such as leprosy and tuberculosis, and even certain tumours can leave clear marks on the human remains. Treponemal disease is an infectious disease which can also leave marks in the skeleton. It refers to a set of four diseases, venereal syphilis, yaws, endemic syphilis and pinta, which are similar in nature and caused by the same bacterium, Treponema pallidum. All four progress in three stages; starting with minor, but highly infectious and contagious, skin lesions and ending, except for pinta¹, with severe bone lesions in the third stage of the disease (Farnsworth and Rosen 2006:181-182). Due to the bone deformations associated with the third stage of this disease, it can be clearly observed in the archaeological record, if the preservation of the skeletal material is adequate. However, not all infected individuals will develop the bone lesions; in only 5-10 percent the disease will manifest itself in the bones, making the archaeological dataset significantly biased (Ortner 2003:275). Based on osteological studies conducted in the Americas over the past years, it appears that this disease was prevalent on the American continent before the arrival of Columbus (Powell and Cook 2005; Schats 2010). Furthermore, also on the Caribbean islands, signs of a treponemal infection have been noted. Bone lesions consistent with the disease have been found in many skeletal assemblages from both the Greater and Lesser Antilles from AD 400 onwards. It appears that there are no skeletal assemblages showing the signs of a treponemal infection before AD 400, except for a very early case from the island of Cuba dating to 8000 BP (Vento and Gonzalez 1996:33). The fact that there are no other early cases can be due to the lack of many skeletal assemblages from before AD 400. However, it can also be related to the arrival of a new disease in the islands from the mainland (Schats 2010:55-60).

In American and Caribbean archaeology treponematosis has received much attention, mainly because archaeological data can contribute to the ongoing discussion on the origin of the disease. At the moment its origin and antiquity are highly debated. Skeletal evidence from the Americas supports the Columbian hypothesis, which states that treponematosis came from the New World and travelled to the Old World as a result of contact with the native inhabitants (Baker and Armelagos 1988:703-704). Therefore, archaeologists often only noted the presence or absence of the bone lesions associated with a treponemal infection. Hardly any attention was paid to the social and cultural implications of the disease. Considering its high visibility and contagiousness, along with the fact that it is very painful, it seems unlikely that it would go unnoticed within a past Caribbean society. It is important to study how such a disease was socially and culturally perceived of and dealt with. Every human society responds to disease and distress in a distinct way and also conceptions of the disease and theories of causations clearly differ between cultures. It is extremely interesting to look beyond the bone lesions and to assess what the disease meant for individuals suffering from this illness in the past and which ideas and conceptions are associated with it. In order to understand the social and cultural impact and perception of the disease, theories and frameworks that are currently used in the field of medical anthropology will be applied.

¹ Pinta is a solely dermatological condition; therefore, this disease will not be taken into account in this paper.

Medical anthropology is the study of medical phenomena, such as illness experience and healing, as they are influenced by social and cultural factors. This research field is highly interdisciplinary, drawing on anthropology and sociology as well as on medicine and other health professions. Ethnomedicine, a subfield within medical anthropology, focuses on health practices in relation to the larger social system. This research field used to be limited to primitive or folk medicine in non-Western countries. However, at present, the term ethnomedicine refers to the health system of any society, including those of the Western world. While Western medicine is primarily focused on the diagnosis and treatment of a disease, the study of ethnomedicine focuses on the totality of medical beliefs and practices in a society. Much attention is given to the roles of healers, patients, and family members, and to the symbolic and personal experiences of disease. The ethnomedical theories and frameworks are very useful for addressing social and cultural implications of treponemal disease (McElroy 1996:1096).

The ethnomedical perspective makes an important distinction between disease and illness. Leon Eisenberg (1977) has defined this division as follows: "illnesses are experiences of disvalued changes in states of being and in social function; diseases are abnormalities in the structure and function of body organs and systems" (Eisenberg 1977:11). "Disease" is a medical term, indicating a deviation from medical norms. "Illness" on the other hand, is culturally constructed; it is the experience of the impairment or distress, as culturally defined. The cause of an illness is not necessarily straightforward; it may lie in the social or spiritual realm. An illness is subjectively experienced and is associated with specific meanings and narratives.

The narratives that are created in response to an illness event can be extremely useful in analysing the social and cultural perception and impact of a disease. An illness is a disruption in life which appears to lack all connection to earlier events: the sense of temporal continuity is ruptured. The narratives, defined as the personal accounts/experiences of the patients, have the ability to form a new context in which the illness will fit. As Hydén (1997) points out: "Narratives can provide a context that encompasses both the illness event and surrounding life events and recreates a state of interrelatedness" (Hydén 1997:53). By illustrating the illness in the form of a narrative the illness events and symptoms are contextualized by incorporation within the same biographical framework. In this way, symptoms of the disease are integrated within social life and the diagnosis and prognosis make sense within that framework.

The illness narrative of treponemal disease has been previously neglected by archaeologists. Solely based on archaeological data the reconstruction of the illness aspect of the disease would be very difficult. Fortunately, archaeological data from the Caribbean area can be complemented with ethnohistoric sources, which allows the study of personal and societal conceptions associated with and reactions to the disease. Moreover, by analysing burial practices, it is possible to research further implications the sickness may have had. This paper discusses the possibilities of studying social and cultural implications of treponemal disease. It focuses on treponematosis as an "illness" and studies the possibilities to reconstruct the illness narrative associated with the disease on the basis of ethnohistoric sources and material culture.

Ethnohistoric sources

The Caribbean area is blessed with a wealth of ethnohistoric sources. Fernández de Oviedo and Bartolomé de las Casas provide a large amount of information on the daily life of the Taínos living on the island of Hispaniola (Lovén 1935; Oviedo 1959a, 1959b). The work of Ramon Pané, a missionary who accompanied Columbus on his second voyage to the island of Hispaniola in 1493, presents a unique account of the beliefs and rites of the Taíno people (Pané 1999). Moreover, also on the Lesser Antilles chroniclers provided interesting narratives about the inhabitants of the islands. The works of for example Raymond Breton and Caillé de Castres contain gripping information on the lives of the island populations. Interestingly, many of the early chroniclers mention the presence of treponemal disease in their accounts (Schats 2010). Therefore, the ethnohistoric sources have been used as evidence in the ongoing syphilis debate. However, the accounts of these chroniclers are also extremely useful in reconstructing the social and cultural implications of the disease. This will be illustrated with parts from the accounts of Oviedo and Pané. For details on treponematosis from other ethnohistoric accounts see Schats (2010).

In his Historia General y Natural de las Indias Oviedo describes a skin disease with symptoms similar to treponematosis as "mal de las indias" meaning the Indian disease (Oviedo 1959a:53). Oviedo was able to identify the disease due to the fact that he had witnessed the syphilis epidemic in Europe. The Spanish term for treponematosis at that time was bubas which translates as sores, a term describing the symptoms of the disease. The Taíno themselves also developed a name for the disease, *yaya*, meaning sore in Island Carib language (Lovén 1935:538; Oviedo 1959a:53-55). Interestingly, in Taíno mythology Yaya is a very important being. Yaya is an old man with whom the first area of creation began (Arrom 1997:68). Next to the name of the disease, Oviedo describes the remedies the Taíno had developed for this affliction. According to Oviedo the medicine they used was the wood of the Guayacan tree. The wood of this tree is very strong and hard and it is often referred to as a "holy" tree. The Taínos used this tree to make their idols and *duhos*. For the treatment of the disease, splinters of the tree were boiled in a certain amount of water. When more than half of the water evaporated, the pot with the decoction is removed from the fire. The afflicted individual had to drink this potion on an empty stomach every morning for approximately 20 days. Next to the drinking of the guayacan potion, the diseased people had to stick to a diet. The patients were not allowed to eat any meat or fish because these foods were thought to be very harmful. Oviedo states that this remedy has cured many from the disease (Lovén 1935:539-540; Oviedo 1959a:364-365; Oviedo 1959b:18-19,88-90).

In the book *Relación de Fray Ramon de las Antigüedades de los Indios* Ramon Pané describes the mythology, including the origin myth, and religion of the Taíno people. Interestingly, a disease with symptoms resembling treponematosis plays a role in the myth. Deminán Caracaracol was the first of four sons to be born out of Itiba Cahubaba. Caracaracol translates as the scabby one; it is said that he was born with a very rough skin. Even though Pané does not link his affliction directly with syphilis, Stevens-Arroyo (1988) relates his skin disease to congenital syphilis². Next to the rough skin, Deminán Caracaracol was suffering from a big ulcer on his back which resulted from a mixture of *guanguayo* (tobacco) and *cazabe* (cassava bread) which was thrown upon his back by Bayamanaco in an attempt to

² Mothers infected with syphilis can pass the disease on to their children who then show characteristic skeletal deformities.

heal him. This healing ceremony did not work and the ulcer on his back became extremely painful and swollen, and as Pané states: "the swelling grew so much that he was about to die" (Pané 1999:16). The three brothers of Deminán Caracaracol opened the ulcer and out came a female turtle. From this part of the myth it becomes clear that the disease is viewed as serious, however, some people, like Deminán Caracaracol were able to overcome it. The disappearance of the symptoms appears to have been a sign of fertility (signified by the female turtle) and shamanistic power (Stevens-Arroyo 1988:124-129). Stevens-Arroyo further shows that the turtle has direct relation with the disease. He states that a taboo rested on the consumption of fresh-water turtles called *'hicoteas'* because the eating of these turtles would result in syphilis (Stevens-Arroyo 1988:129). Interestingly, this food taboo also appears to have been present in the Lesser Antilles (Schats 2010:79-81)

Another, more direct, reference to syphilis is made by Pané when he discusses the origins of the Taíno people and social order. In sacred time the Taíno people lived in the mythical Cave of Caçibajagua. During this period, everything normal is inversed; the social order of the Taíno had not yet been established. Many of the proto-Taíno humans tried to leave the cave to create social order, but on every occasion they were punished for leaving the cave. One day, one of the men, Guayahona, is able to escape the cave without punishment. He leaves the men behind and takes all the women with him. The group travelled to the island of Matinino, where he leaves all the women and sets out to the magical destination *Guanín*. During his journey, Guayahona rescues a woman from the sea who according to Pané "gave him great pleasure, and at once he sought many lavations to bathe himself because he was full of those sores we call the French disease" (Pané 1999:9-10). The woman, named Guabonito, placed him in a *guanara*³, which is a separate place. While Guayahona was in *guanara*, he was cured of his sores (Oliver 2000:209-212; Pané 1999:8-10).

In this passage it is evident that Pané attributes the source of treponematosis to sexual relations with Guabonito. In light of what Pané knew from Europe this makes perfect sense. The disease was already very prevalent there and was attributed to sexual intercourse (Baker and Armelagos 1988:707-708). José Juan Arrom provides a different interpretation to the origin of the disease. Arrom argues that there is an important piece missing from the account of Pané (1997:76). The first Taíno people, who were living in the caves, were all brothers and sisters. Without contact with other human groups, they were forced to mate amongst themselves to reproduce. This act was a clear violation of the disease that Pané terms the 'French disease' (Arrom 1997:76). Guayahona left the cave with all the women to put an end to the incest. Interestingly, it appears that, in contrast to the analysis of Pané, Guayahona was already suffering from the disease before meeting with Guabonito. While in *guanara*, Guayahona washed himself with *güeyo* plant he took with him from the cave and was cured from the disease (Arrom 1997:76).

As Arrom, Stevens-Arroyo also interprets the taking of all the women by Guayahona as establishing marriage rules among the Taíno. By leaving the cave with all the women and then abandoning them again on the island of Matinino, Guayahona creates the rule of exogamy. However, even though Stevens-Arroyo does not state how Guayahona contracted his disease, he does not view the disease as punishment for incest in the past nor does he think that Guayahona contracted the disease because of sexual contact with Guabonito.

³ In parts of Cuba guanara is the name of a dove which lives in remote mountain areas (Arrom 1999:10)

Stevens-Arroyo identifies Guabonito as the sister of Guayahona. Moreover, he views Guabonito as a hero spirit and a representative of feminine culture just as Guayahone represents the masculine culture. He states that Guabonito is repulsed by Guayohona because of his disease, and in fact denies sexual intercourse and thereby reinforces the exogamy rule. Stevens-Arroyo argues that the healing which follows is more likely to be a mythological event than an actual medical process (Stevens-Arroyo 1988:193-196).

José Oliver (2000) offers a different interpretation. He argues that the disease is in fact a result of sexual intercourse with Guabonito, who Oliver also identifies as his sister. However, he does not view the disease as a punishment for this incestuous relation. Oliver argues that the disease is metaphorically used to express a condition which is directly associated with gold. After the healing took place in *guanara*, Guabonito presents Guayahona with *guanines* and *çibas*, which signify the initiation into the office of the cacique. In this way, the disease can be seen as being part of a rite of passage. Because of the disease, Guayahona was able to become a chief and acquire the chiefly attributes (Oliver 2000:209-212). This idea was already discussed by López-Baralt in 1976. She divided the narrative of Guayahona into several phases and show that these fit in the pre-liminal, liminal and incorporation phase as defined by Van Gennep in 1901 (López-Baralt 1976:39-45).

In many of the interpretations, Guabonito is often seen as the source of the disease and the illness is frequently related to sexual contact. I think that another interpretation is also possible. I feel that it is very likely that Guabonito solely has a role as healer in the myth. Women associated with healing and coming from the water are a common theme in Amerindian mythology (Boomert 2010:32). Moreover, the disease is not always sexually transmittable. Venereal syphilis is the only disease caused by the *Treponema pallidum* bacterium which spreads through sexual contact. If the disease mentioned in the myth is one of the other treponemal variants or a totally different disease, it does not have to be related to sexual contact at all. I feel that this may have been a misinterpretation of Pané or the other chroniclers. As said above, in Europe a similar disease was clearly related to sexual contact, which is why the disease witnessed in the Caribbean was also immediately attributed to sexual relations by the early European chroniclers. I do agree with Oliver and López-Baralt that it is likely that the disease was part of a rite of passage into a chiefly status. However, it is possible that Guabonito, sister or not, just plays the role of healer in the myth and is not the source of the disease.

The interpretations above show that the disease takes an important place within Taíno society. It appears that the sick individuals may have been destined to become a shaman or a chief. This is clearly illustrated by both the myth about Deminán Caracaracol and Guayahona. From societies all over the world it is known that disease episodes often precede or even predispose an individual for a position as a shaman or chief (Duin, personal communication 2010). This is also illustrated by a modern example from Hmong culture as described by Anne Fadiman (1997). Fadiman discusses the case of a Hmong girl who suffers from severe epilepsy. The parents are clearly worried about their daughter because they try to heal her with home medicine and drugs prescribed by medical doctors. However, next to the dangerous connotation this disease has, this particular illness, *qaug dab peg* – "the spirit catches you and you fall down" –, is also perceived as a disease of distinction within their culture. Many individuals who are known to have had the disease became shamans later in life. The parents perceive the disease as something dangerous but also as a great honour that their daughter has been chosen to become a healer when she grows older. As Fadiman

points out: "seizures are thought to be evidence that they have the power to perceive things other people cannot see, as well as facilitating their entry into trances, a prerequisite for their journeys into the realm of the unseen" (Fadiman 1997:21).

I feel that, based on the myths described by Pané and the treatment described by Oviedo, something similar may be the case for treponematosis in Taíno societies. Individuals suffering from the disease are not extremely special, but the actual disappearance of the symptoms, the overcoming of the disease, signifies that these persons are destined for greatness. Moreover, in the case of Guayahona the disease appears to have been a clear part of his rite of passage, as also López-Baralt and Oliver have argued. After overcoming the disease Guayahona was recognized as a chief. I feel that the sickness and the separate place may be associated with the liminal phase of the rite of passage, as also López-Baralt (1976) argued. The acquiring of the chiefly attributes is part of the third phase of the rite of passage in which Guayahona is re-incorporated in society with his new status and identity.



Figure 1 Sabre-shin deformity (Perine et al. 1984).

Material culture

From an archaeological perspective, it is extremely interesting to study whether, and if so, how treponematosis is reflected in material culture. If treponemal disease is indeed associated with shamanism and caciques as argued above, then it might be possible to find representations of this disease on ceramics or other artefacts made by the Taíno people. At the moment, the evidence for a material presence of treponematosis is not particularly strong. However, there are two examples in which ceramics may indeed show signs of a treponemal infection.

The effigy vase representing Deminán Caracaracol may be the clearest example of a representation of the disease. As discussed above, it is argued that he was born with syphilis and was cured from it by his brothers who broke the swelling on his back. This big ulcer is associated with the symptoms that are described in relation to treponemal disease.

A common feature of other Taíno effigy vessels is the thick calves that the represented individuals are showing. This aspect might be related to treponematosis. As explained above and as can be seen in Figure 1, in the third stage of the disease the bones of the sick individual are affected in a very characteristic way. One pathognomonic deformation associated with a treponemal infection is the sabre-shaped tibia. In this case, the tibia is disfigured by an abnormal deposition of new bone which gives it a very thick and curved appearance which can be seen on the image below. This deformity may have been depicted on the effigy vessels. However, the binding of the legs just below the knee, which was a common practice, may also result in the same, although less pronounced, thick appearance.

Discussion

The aim of this paper was to discuss the possibilities for researching social and cultural implications of treponemal disease in the Caribbean area. Treponematosis is an excellent disease to research since it is visible in the archaeological record, but also very notice-able during life. Based on the ethnohistoric sources it becomes clear that a disease close-ly resembling treponematosis was indeed something that did not go unnoticed within a Caribbean society. Most early chroniclers in the region mention the presence of the disease and describe the treatment plan developed by the indigenous inhabitants. Oviedo illustrated specific treatment used in a case of treponemal disease on the island of Hispaniola. The work of Pané interestingly demonstrates the presence of the disease in Taíno mythology. The origin heroes Deminán Caracaracol and Guayahona seem to have been affected by treponematosis.

It appears that treponemal disease had special meaning throughout the Caribbean. The disease is associated with special beliefs, remedies and even myths. This indicates that this particular disease was possibly more significant than any other disease they might have been suffering from. From the discussion of the sources above it is possible to asses the meanings which the disease may have had for the Caribbean inhabitants. The disease appears to be something dangerous and painful; the indigenous inhabitants had developed special remedies for the disease. Moreover, a food taboo associated with this disease appears to have been present. Even though remedies for the disease existed, it is very likely that none of the affected individuals were actually healed by the treatment. However, based on the mythology it seems possible that the sick individuals could have become cured from this disease. Medically speaking, it is possible to seemingly overcome the disease.

Treponematosis involves a latent period into which some of the affected individuals enter. During this period, which can last the lifetime of the individual, there are no visible symptoms; therefore it appears that this person is healed. I would argue that individuals suffering from this disease were not particularly special. It seems more plausible to argue that the individuals who were able to overcome the disease would be considered to be more special. This notion is further substantiated by the myths described by Pané.

This analysis of the social and cultural implications of treponemal disease has hopefully shown that this type of research has great potential, not only for treponematosis but for other diseases as well. However, solely based on archaeological data this type of research is extremely difficult. The main arguments and interpretations are based on the ethnohistoric sources. Future research should therefore combine ethnography, ethnohistory and archaeology to be able to come to the best possible understanding of how treponemal disease was socially and culturally perceived and experienced in the Amerindian societies of the Caribbean area.

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THROUGH THE EYES OF THE CHRONICLER

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This paper is an analysis of Bartolomé de Las Casas's description of Hispaniola in his *Apologética Historia Summaria*, in which we demonstrate that reading this document requires knowledge of Aristotle's *Politics*. The Aristotelian model of the organization of a civil society is basic to understanding the nature of de Las Casas' descriptions. Only a complementary reading of both texts will elucidate the complex western philosophical discussions that animated the apparently simple description of the houses and villages in Hispaniola by de Las Casas.

Este artículo analiza las descripciones de La Española hechas por Bartolomé de Las Casas en su *Apologética Historia Summaria*. Demostramos que leer la *Apologética* requiere conocer *La Política* de Aristóteles. Para entender la naturaleza de las descripciones Lascasianas, el conocimiento del modelo aristotélico de organización de una sociedad civil es fundamental. Sólo una lectura paralela de ambos textos posibilita la comprensión de la compleja discusión filosófica occidental, trasfondo de la descripción de casas y aldeas de La Española realizada por de Las Casas.

Cet article est une analyse de la description d'Hispaniola faite par Bartolomé de Las Casas dans son *Apologética Historia Summaria*. Nous démontrons ainsi que la lecture de ce document nécessite la connaissance de La Politica d'Aristote. Le modèle aristotélicien de l'organisation d'une société civile est fondamental pour comprendre la nature des descriptions de de Las Casas. Seule une lecture complémentaire des deux textes pourra éclairer le débat philosophique occidental qui a animé la description apparemment simple des maisons et des villages d'Hispaniola par de Las Casas.

Introduction

To obtain useful information from colonial documents, better known as Chronicles of the Indies, one is required to start with a process of textual selection and then perform an exercise in intertextual reading. The first task of the ethnohistorian is to establish criteria to narrow the number of documents. Since the arrival of Europeans to America narratives on this new geographical area and the way of life of the Native Americans has been profuse; around 200 chroniclers are recognized by modern scholars. Only some of them wrote about the Caribbean area and an even more limited group was actually present in the American continent, which narrows the number of documents. It is also necessary to remember that to analyse a text implies reconstructing its context to enable us to place it within its appropriate frame of reference. Distortions in the interpretation occur when we read fifteenth century documents based on our modern concepts. A "city" or a "village" are for us simple terms but they probably did not mean for Columbus what we now understand as such. Texts also have an undeniable historical context; most of our colonial sources were written as an answer to official requirements of the Spanish Crown and have questionable independence and autonomy. This is the case with Columbus' Diaries, which is why on arrival to Spain they were compared with the documents sent by an official of the Spanish Administration, who was posted amongst Columbus's crew with the specific task of documenting all his observations. In this way the Spanish Crown ensured the presence of a second document to compare and check the veracity of the Admiral's version. Not an unusual measure if we take into consideration the huge investment that Columbus' trip meant for the Spanish Crown. Economical, political and religious facts played a role in the production of such texts. Not to mention the unpredictable element of the personality of every traveller or writer. This personality was reflected in their version of the story (let's just remember Columbus' certainty of his arrival in India or his later quest for Paradise). The Chronicles of the Indies are far from a transparent description by eye witnesses, they are a construction.¹ The fifteenth century narrative had political, economic, social and religious interests complicating the already difficult task of describing the encounter with a new unknown world. This short introduction is meant as a schematic description of the different elements a reader of the chronicles has to take into consideration before addressing the contents of the documents or beginning the process of deconstruction that may in the end provide useful information.

One of the traditional documents consulted on indigenous Caribbean history is the text of Bartolomé de Las Casas, the Dominican Spanish friar, challenger of the encomienda, Bishop of Chiapas and well known as the *Apostle of the Indians*. Las Casas is one of the most respected sources, he was present in Hispaniola and demonstrated a clear interest as well as an inquiring mind in describing the life of the indigenous population. On the other hand we must not forget his political commitment to the indigenous cause that more than once resulted in biased observations or inaccurate data. The *Apologética Historia Summaria* is

¹ The Chronicles were documents produced by conquerors, soldiers, friars, civil servants and new citizens of the new territories. They all described and wrote about America. "Their writing was foundational, their discourse was trying, through the use of words, to construct a new identity for the colonized and his territory, but the point of departure was the symbolic world of the writer" (Borja 2002:5) [my translation]. That is a central idea in interpreting a Chronicle of the Indies. We have to keep always in mind that concepts of history, literature, the use of rhetoric and the texts participating in the exercise of intertextuality (medieval, biblical or classics) are all of a writer of fifteenth or sixteenth century.

one of the lesser consulted texts of de Las Casas, compared with the *Historia de las Indias* (1527) or the *Brevisima Relación de la Destrucción de las Indias* (1552) [both published in 1875-1876] or even his transcription of *Columbus' Logbook*. The *Apologética* contains the essence of his philosophical thoughts about the human nature of the inhabitants of Hispaniola. His arguments are based on the Aristotelian model that assimilates prudence with rationality. Aristotle defines prudence as an essential virtue that allows human beings to distinguish between good and bad, necessary for them as persons but also for the benefit of the community. Human beings possess intellectual virtues related to reason but also ethical virtues related to will and capacity of action, both combined allow humans to achieve perfection in action and in thought. A good way of acting in the world would be related to the capacity of controlling extremes or passions in a rational and adequate way. The objective should be to achieve balance taking distance from excesses. Prudence is, in that way, at the basis of all ethic virtues. Being prudent involves being rational and practical when taking decisions about what is good or bad.

Since the second decade of the sixteenth century the discussion about the Amerindians' lack of rationality and the following issue of the possibility of taking their liberty away was actively present between Spanish academics and jurists. This was necessary to construct a theoretical argumentation to legitimize the Crown's political control of the Indies.

Las Casas' objective was to demonstrate that indigenous inhabitants possessed rational capabilities and were also able to construct and maintain admirable "republics." Las Casas took the most important requirements mentioned by Aristotle to achieve a prudent life and tested their existence in the daily life of the inhabitants of Hispaniola expecting in such a way to prove that they possessed the Aristotelian characteristics for a prudent or a rational political life. We turn our attention to this text because of the possibility that the writer may have began its construction around 1523 (the scholars do not agree on a specific time) which means that this theoretical frame influenced also the documents produced later in describing Hispaniola and the inhabitants.

Las Casas' *Apologética*, is a document born out of the context of Spanish discussions about the barbarism of the American Indians, an idea that provided the foundations to justify the Spanish exploitation in America. Las Casas presented his philosophical arguments against the alleged idea that Indians were the natural slaves mentioned by Aristotle.² Based on his observation of the indigenous cultures, he offered examples to reinforce every step of his argumentation. When he described Hispaniola and its inhabitants he was talking from an authoritarian perspective given by his position as an eyewitness. Las Casas analyses the requirements mentioned by Aristotle and confirms the presence of those characteristics in the inhabitants of Hispaniola. Through this exercise he expected to dismantle the idea of barbarism.³ His descriptions of physical and environmental characteristics constitute the geographic foundation for his model. This is the first of the elements that influence the representation of the Indian's constitution. He describes the environment: the soil, the plants, the weather, the sea, the animals, presenting a picturesque description close to uto-

² Las Casas reacts against Gines de Sepulveda's affirmation that if Indians in America were barbarians then, following Aristotle, they were the natural slaves so they could be exploited and chained. They must accept Spanish rule in view of their incapacity to govern themselves. Las Casas defended the idea that Indians were able to govern themselves because their rationality was proved by the highly cultural level they have achieved.

³ Las Casas's strategy to dismantle the concept of barbarism is explaining the different meanings of the term. He concludes that only when referring to barbarians as people and ferocious people, incapable of living in society, it is possible to affirm that they will require the guardianship of the Spanish Government (Beuchot 2004:60).

pian paradise, rather than a chaotic exuberant nature.⁴ Instead of standing in the way of indigenous development every element is encouraging it. Climate influences the disposition of the inhabitants and so as a result of such an auspicious environment he concludes that the proportioned and beautiful bodies of the inhabitants can only contain a noble soul. Here he quotes Aristotle's concept that the soul is determined by the structure of the body.

[...] since all the inhabitants of these Indies, for the most part, and specially the boys and girls, have a good semblance and concordance of beautiful faces and proportioned limbs and bodies, and this since birth, as the Philosopher said, it demonstrates that God and nature gave and endowed and granted them with noble souls, and therefore made them reasonable and of good understanding (Apologética I:438).⁵

The idea of a savage nation begins to be erased, and any contradictory external elements damaging to the representation of Indian's constitution are counteracted. Having proved that even the natural world helped the American inhabitants to develop their potential, Las Casas begins to analyse every one of the Aristotelian qualities required for a rational life. The idea that a human being has to be able to live in society and be part of a group is the first element. This social tendency expresses itself in first instance on an economic level: by that he means the presence of a house, meant to be inhabited by husband, wife, children and servants or oxen, because a man also has to have possessions. About the house, the Aristotelian principle is that the man has to be able not only to acquire and select the materials but also be able to build it himself providing comfort and security to the habitants. Las Casas has no trouble finding a parallel to these ideas in Hispaniola.

The inhabitants of Hispaniola [...] made their houses out of wood and straw in the form of a bell. They were very tall and spacious and 10 or more people could live in each one. They sunk posts, as thick as human legs in the ground. All of the sticks came together in the ceiling where they were tied with ropes made of a root called bejucos (Apologética I:480).

Once the house exists physically, the next element is the government of the household. The requirement is the ability to supply the means for the family's subsistence. In Aristotle's view agriculture was the most important way to achieve this purpose. Again Las Casas is able to describe how Hispaniola can comply with this requirement.

Of all human capabilities, the most important is agriculture. This implies ploughing and the production of natural products of the earth, birds, hunting and fishing, these are natural resources needed to maintain family and children. All of this they had in abundance. In these islands they find and obtain everything from nature except the cazabi bread which they plant, treat and prepare, there was plenty of this and it was nice (Apologética I:481).

⁴ Describing the geographic characteristics that make Hispaniola a place able to be inhabited, Las Casas writes: "[...] the positive influence of the sky and the adequate distance of the earth from the sun had resulted in the fertility of the soil and the absence of swamps, stench and other disadvantages. Instead there is a healthy air and good winds making this region temperate and suitable for human habitation and worthy to be visited. It is possible that Paradise on earth should look like that [...]" (Apologética I:355).

⁵ All translations of *Apologética* are mine.

In third place the administration of the house requires order and organization in the distribution of tasks. Las Casas observed, as well in the case of the husband as in the case of the wife, that the inhabitants of Hispaniola followed the Aristotelian model.⁶ The same order and discipline apply to the case of the slaves because they constitute part of any human being's possessions. Las Casas here faces a problem because he is unable to find a comparable situation in Hispaniola, far from it, as he states the absence of slaves in the island.

A few people in the continent who had slaves (because <u>in the island there were no slaves between the</u> <u>Indians</u>) treated them so kindly and with such love that there was almost no difference with their own kids [...] (Apologética I:484) [Emphasis is mine].

How accurate his observation is and how far Las Casas would go to prove his argument has been researched by David Henige (1992) in his article *To read is to misread, to write is to miswrite. Las Casas as transcriber.* Henige studied Las Casas's *Historia de las Indias* where the friar quotes Columbus's *Diary* frequently to add veracity to his descriptions. The general idea that Las Casas transcribed faithfully and with scrupulous accuracy is questioned in the light of some problematic texts, like the one introducing the notion of Indian slavery of other Indians. Such affirmation would have contradicted Las Casas statements that slave raiding in the Caribbean was a Spanish innovation. So when quoting Columbus' description of Guanahani he just erases the lines refering to slavery⁷. The subject of the presence of slaves is solved arguing that if there were slaves –present on the continent (tierra firme) but not in the islands- they were treated as family. About the oxen, also mentioned by Aristotle as replacement for the slaves, they couldn't be found in Hispaniola either. This time Las Casas'creative observation adopts a well known argument of Columbus: God provided the indigenous population with such fertile grounds that they did not need oxen for agriculture.

People of these lands didn't have oxen to plough the earth, like the Philosopher asserts in Politics and Economics 1°: In the poor man's house the ox replaces the slave to plough the earth in place of the slave; but God provided them with fertile ground that needed only a strong stick to break the earth and obtain crops, so they did not need to plough [...] (Apologética I:485).

The next problem would be the Aristotelian concept of money or currency (*pecunias o dinero*), something rather difficult to find in Hispaniola. This is compensated by the assertion that the Indians were blessed with such natural wealth that they needed nothing else.

[...]God provided them with fertile ground that needed only a strong stick to break the earth and obtain crops, so they did not need to plough. They had this and all the necessary things for their daily survival [...] that is why they did not need money because they lack nothing (Apologética I:485).

^{6 &}quot;[...] the husband tilled the land and worked in the fields, fished and hunted; he brought wood and other materials to construct houses and buildings, and he built his own house and all other things that belong to manly work."(Apologética I:481) "[...] the wife[...] made bread, took care of the chickens, if they had them, went for water to the river, cooked, spun and wove cotton, clothes, shirts and blankets they wear and also the *naguas* [...] and the nets they called *hamacas* and used as beds, all this they made with much art" (Apologética I:484).

⁷ The lost passage is the one from Columbus' *Diary* describing his first impression about Indians in Guanahani, October 12: "I saw some of them with wounds and scars in their bodies. I asked with signs about the meaning of such scars and they answered that people from other islands nearby came to take them so they had to defend themselves. I thought and still think that people from the continent use to arrive here to take prisoners."

Compliance with the Aristotelian requirements is essential for Las Casas because only this parallel will allow him to prove his essential argument: the humanity of the indigenous Americans. That is why he goes further with another important observation, this time about the requirement of the existence of villages or populous places. To sustain his argument he uses his authority as an eye witness, but then provides conflicting descriptions, like for example the one that would create more than a headache for future researchers: "infinite villages" in Hispaniola (*infinitos pueblos en La Española*). In this case a comparative reading of his other documents rather than clarifying, makes the situation even more complex.⁸ Philosophically his solution is to re-define the concept of a city, taking this time an idea of Saint Agustine. What constitutes a civil community, called a city, village or hamlet, is not the number of inhabitants living protected by walls within a group of neighbouring buildings. Rather the essence is peace, justice and general agreement between neighbours. That is why even when we cannot find villages surrounded by walls or large numbers of buildings in Hispaniola, we can talk of cities.

[...] If the people of the Indies have peace, and they live normally and quietly and nobody harms anyone in their cities, villages and places [...] we can conclude that their republics are perfect and enough for them, even more perfect than other nations which do not have so much peace [...] (Apologética I:490-491).

Las Casas manages to prove his point, the inhabitants of Hispaniola are potential candidates to live a prudent life because they posses the economic, domestic, familiar and paternal Aristotelian requirements. We have also seen how far he can go in his efforts to fit the indigenous population into a certain western model. But we have also proved the limitations of Las Casas' observations in Hispaniola. Where can we find the descriptions of the American indigenous peculiarities? When do we find the details of the American landscape not contaminated or defined by this theoretical Aristotelian frame? Can we rely on Las Casas to provide us with a fresh, maybe even surprising first look at the unknown Hispaniola and the inhabitants?

What is clear from the *Apologética* is the lack of a description of a structured, unified politically organized Indigenous community. The republic, in the case of Hispaniola, was perfect because the people lived in peace between themselves and did not harm each other.

⁸ If we follow Las Casas descriptions about not only the dimensions of the so called villages but also how they were inhabited, it can get rather confusing. "A neighborhood is a clan that grows up, from one goes to many, and they inhabited many houses and created a neighborhood of sons and grandsons. As the Philosopher says a city is born from many neighborhoods together" (Apologética I:486). In Apologética II:524: "In Hispaniola, Cuba, San Juan, Jamaica and the Lucayos there were infinite villages, houses all together, many neighborhoods." Finally in Apologética II:491: "Even if in these Indies people do not have villages or cities protected by walls, beautiful buildings or high towers, as long as they live in peace and united, we can not deny their villages, hamlets or cities the definition of such. It is enough that they live together, not much of them but enough to take the form of a village or city, according to the number of neighborhoods, family ties or lineages together, even if there are only straw constructions because that is all they need."
For this group of beings,⁹ Las Casas asserts, it was enough to live in peace and happiness, with what they already had achieved: lack of chaos. Hispaniola was in that sense a perfect republic because the perfection of a city or village lies in the people living in peace and harmony. To reinforce this argument even more Las Casas describes how the American inhabitants were able to live in peace between villages. Those villages were formed of one to five hundred houses (Apologética II:524) and in each house 10 or even 15 neighbors lived with their wives and children. Even more surprisingly, and an important argument for the civilized nature of the inhabitants, was the fact that in a round straw house, more or less 30 or 40 feet in diameter, without room divisions, 10 or 15 inhabitants lived together all their lives without quarrels or discussions between husbands, wives or children.

But can we conclude then that the model of Indian villages in Hispaniola was only based on the presence of abstract ideas such as peace and justice? To find more information about indigenous communities in Hispaniola we have to make use of intertextuality and jump back to a document from 1516, the Interrogatorio Jeronimiano. We encounter, probably for the first time, an official document in which an original name is used to describe an Amerindian village: a yucayeque. How difficult it was to understand and to grasp the meaning of these communities is reflected in the number of words used in the document every time the authors tried to find a synonym for the word "yucayeque".¹⁰ The Hieronymite document provides useful information about the fact that in 1516 there were only a few Indian communities left in Hispaniola, since an official order from the Crown determined that all Indians had to be mobilized to cities. The Interrogatorio was written by the Hieronymite friars as part of a systematic documentation of the fulfilment of the task they have received: to study the possibilities of an independent Indian settlement in the Americas. The rapid disappearance of the Indian population was becoming evident, so the friars were charged to understand the Indian cultures and restore them. This was an attempt to put into practice the utopia of villages destined exclusively for Indians in the colonies under Spanish guardianship. The friars worked in a very organized way and one of their first measures was to ask the opinion of 13 well known members of the Santo Domingo community. The testigos, witnesses that answered the questions were members of the Spanish community: visitadores [Spanish government inspectors], owners of encomiendas [land and inhabitants granted to a conquistador], people that benefited from repartimientos [distribution of indigenous people for forced labour]. All of them declared that Indians were incapable of governing themselves, that they were degenerates and especially that they were unable to understand basic rules of survival: to make profit. Indians did not understand the idea of payment, exchange with capital gain or surplus. They were capable of working in their *conucos* [smallholding. Indigenous agriculture] but they proved unable

⁹ Being human beings without knowledge of the true faith made the Amerindians also unable to access a certain form of happiness that Aristotle calls *civil happiness* or the capacity to govern themselves and others with virtue. Las Casas established clear differences between Christian cultures and heathens or non-christians and in such a way makes clear the existence of a unique faith and other belief. But the fact that Amerindians were considered heathens was not a reason to take their sovereignty and freedom away. Las Casas explained that idolatry did not depend on more or less rationality, it was attributed to a natural state of human beings in absence of grace. Following Saint Thomas he asserts that all human beings had an inborn knowledge of God, in the case of the Amerindians maybe still confused, but that was why doctrine was needed to teach them, but this could never be used as a reason to subjugate them.

¹⁰ The word *yucayeque* replaces: asientos, haciendas, tierras, estancias, poblaciones, comarcas, pueblos, provincias, ciudades and villas. All these Spanish concepts applied along the documents of Indies when trying to describe Hispaniola's household without grasping the exact definition.

to make provisions for the future, they couldn't even sell the bread they produced. We read also in the document that Indians were born and brought up in *yucayeques* and were only forced to go to cities for work. Accepted and recognized caciques were the leaders of these communities (they even listed the names of some of the caciques: Alonso de Cáceres and Pedro Colón (Wesch 1993:119), don Francisco in Bonao and Dotor in Santiago (Wesch 1993:125). We also find the description of their labour system: the Indians lived in yucayeques, went to work in the Spanish properties and back to their *yucayeques*. This all is incidental information given in the context of a general complaint about how easily, when going back to the *yucayeques*, Indians forgot the beneficial things they learned during contact with Spanish civilization. This meant that they continued practicing their games, areitos [music and dance ritual], cohoba rituals [ceremony of an induced trance] and other practices considered unacceptable in a Christian society. The document shows opposition and resistance to changes from a strong lobby of Spanish interested parties who felt their basic privileges to exploit the indigenous population were threatened. After two years the Hieronymite experiment failed due to opposition from interested parties and the terrible role of the mayordomos in charge of the administration of the communities who prioritized their own economic interests, and finally due to a terrible outbreak of smallpox that took the lives of a great number of Indians.

As informative as this document proves to be we cannot reject Las Casas. His documents contain useful information precisely in the moments that the chronicler is confronted with the failure of the parallel between the Aristotelian model and the American reality. It is then when he is confronted with and tries to "compensate" the supposed gap in the theoretical frame that he describes American characteristics. The houses in Hispaniola were made of good materials, they were comfortable and strong, and their simplicity, which otherwise might have been a sign of barbarism, was compensated by their cleanliness, and building materials such as straw, braided into admirable and beautiful patterns *bejucos* [climbing plants of the Tropics similar to the liana] and the nice smell of some of the plants used for the construction (Apologética I:480-481, II:525).

For a deconstructive reading of Las Casas'philosophical ideas these details may sound simple but their presence constitutes material for other disciplines to develop these points and reconstruct an entire projection of Amerindian values, based on the simplicity of domestic beauty described by Las Casas.¹¹

The colonial documents continue presenting a challenge, to classify, to summarize and even to read, meaning that the information they contain remains as some kind of unknown land waiting to be decoded, named and displayed to the eyes of the world.

¹¹ A clear example could be archaeologist Dr. Alice Samson's dissertation: *Renewing the House. Trajectories of social life in the yucayeque (community) of El Cabo, Higüey, Dominican Republic, AD 800 to 1504.* She asserts: "[...] the archaeological evidence suggests that a cultural aesthetic of domestic beauty existed in El Cabo which focused on the structure of the house. This was identified by focusing attention on various aspects of the lifecycle of the house such as the coordinated, joint effort and exacting execution of house foundations, the monumentality of the house façade, dressing of the abandoned house like the dressing of the human social body and the responsibility to replicate or renew the successful home for perpetuity" (Samson 2010:272).

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FROM CAYO TO *KALINAGO* Aspects of Island Carib archaeology

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Recent investigations on the islands of St. Vincent and Dominica have yielded archaeological evidence considerably deepening our insight into the Cayo pottery complex of the Windward Islands and its settlement structure. It is now generally accepted that Cayo ceramics represents the earthenware repertoire characterizing the Island Carib (*Kalinago*) people from the late-prehistoric episode well into the colonial period. Besides, the predominant derivation of Cayo pottery from that of the Koriabo complex, known throughout the Guianas, is no longer in doubt, corroborating the claim of the Island Carib men, recorded in the mid-seventeenth century, to their origin in the coastal zone of the Guianas and their joint ethnicity with the Caribs (*Kalina*) of the mainland.

Investigaciones recientes en las islas de San Vincente y la Dominica han producido evidencia arqueológica que profundiza de manera considerable nuestra comprension del complejo cerámico Cayo de las Islas de Barlovento y de su estructura de asentamientos. Ahora está generalmente aceptado que la cerámica Cayo representa el repertorio alfarero que caracteriza a las Caribes Insulares (*Kalinago*) del período prehistórico tardío hasta entrando en el período Colonial. Además, la idea que la cerámica Cayo se derive del complejo Koriabo, documentado por todo las Guayanas, ya no cueda en duda, confirmando el reclamo de hombres Caribes Insulares, registrado a medio siglo diecisiete, de su origen en la zona costera de las Guayanas y de su pertenencia étnica con los Caribes (*Kalina*) de tierra firme.

Des recherches récentes sur les îles de Saint-Vincent et de Dominique ont apporté le témoignage archéologique permettant d'approfondir considérablement notre perception du complexe de poterie Cayo des Îles du Vent et de la structure d'habitat qui y est associée. Il est maintenant généralement admis que la céramique Cayo représente le répertoire de poteries caractérisant les Caraïbes insulaires (*Kalinago*) de l'épisode préhistorique tardif avancé de la période coloniale. En outre, la dérivation prédominante de la poterie Cayo de celle du complexe Koriabo, connu dans toutes les Guyanes, n'est plus mise en doute, et corrobore ainsi à la revendication des hommes Caraïbes insulaires, enregistrée au milieu du XVIIe siècle, de reconnaître leur origine dans la zone côtière des Guyanes et leur appartenance ethnique commune avec les Caraïbes (*Kalina*) du continent.



Figure 1 Map of the Eastern Caribbean, showing the distribution of the Cayo complex and the settlement area of the Island Carib ca. 1600 (interrupted line). Legend: (1) Cayo settlement sites; (2) Cayo individual finds.

Introduction

Undoubtedly the Cayo complex forms the least well-known but one of the most intriguing ceramic assemblages known from Lesser Antillean archaeology to date. First encountered by I.A. Earle Kirby at the New Sandy Bay site close to the Cayo River in northeast St. Vincent in the 1970s (Kirby 1974), subsequently Cayo ceramics were identified by the author as representing the pottery complex of the Island Carib who inhabited the Windward Islands during late-prehistoric and protohistoric times (Boomert 1986, 1995; see Figure

1). Nowhere is the presence of Cayo better known archaeologically than in St. Vincent, but closely related materials have also been recovered from sites in Basse-Terre, Guadeloupe (Richard 2002a, 2002b, 2003), Dominica (Boomert 2009; Petitjean Roget 1978:Photos 4-5), Martinique (Allaire 1984:Figure 3:A), St. Lucia (Hofman and Bright 2004), Ile de Ronde, Grenadines (Petitjean Roget 2001/2002:60-61), Grenada (Cody Holdren 1998:80-81, 87), and Trinidad (Boomert 1986:Figure 21:7). Besides, in 1993 Louis Allaire was able to identify Cayo pottery clearly associated with materials dating to the historic period such as glass beads and objects of iron, copper or brass and gunflint at the Argyle site of St. Vincent, including a unique Cayo potsherd with a series of glass seed beads inlaid in the rim (Allaire 1994; Allaire and Duval 1995).

Since Allaire's investigations at Argyle for more than a decade no further work was undertaken at the Cayo sites of St. Vincent and only sparsely elsewhere in the Windward Islands. However, in 2008 the Caribbean Research Group of the Faculty of Archaeology, Leiden University, initiated an archaeological project intended to undertake further archaeological and ethnohistorical research into the Island Carib occupation of the Lesser Antillean archipelago. As a first stage of this project a small team of Leiden University, cooperating with Dr. Lennox Honychurch of the Dominica Museum, Roseau, surveyed part of northeast Dominica in order to analyse a series of small sites of the Cayo complex in January 2008. The area investigated is situated some 6-15 km north of the present Carib Territory which houses a thriving community of (mixed) descendants of the historic Island Carib or Kalinago as they called themselves.¹ Subsequently the construction works for the new international airport at Argyle, St. Vincent, which will lead to the destruction of all archaeological sites in the area, were reason for Leiden University to perform rescue excavations at the Argyle site in 2009 and 2010, co-operating with Mrs. Kathy M. Martin of the St. Vincent and The Grenadines National Trust and partially funded by the St. Vincent International Airport Development Company. These investigations yielded for the first time in Caribbean archaeology patterns of postmolds of houses and other structures of a Cayo/Island Carib settlement next to mobile finds including Cayo pottery associated with historic pottery, glass and metal remains.

Cayo and the Island Carib

The recognition of the Island Carib ceramic complex formed an archaeological bone of contention throughout most of the second half of the previous century. While in the first instance the pottery of the Suazan Troumassoid subseries (then still called the Suazey series or tradition) was felt to represent *Kalinago* ceramics (McKusick 1960; Bullen 1964), subsequently the author tentatively identified the little-known Cayo complex of St. Vincent as such, using archaeological and ethnohistorical data (Boomert 1986). Although thereupon Davis and Goodwin (1990) discussed the 'Island Carib Problem' while fully ignoring this evidence, the ensuing recovery of Cayo ceramics from various sites between Grenada and Guadeloupe next to Allaire's discoveries on St. Vincent settled the matter quite conclusively. Research should now focus on the recovery of many more Cayo sites in the Windward Islands, preferably by combining ethnohistorical investigation with archaeological recom-

¹ That is to say: the men in Island Carib society called themselves as such, while the women used the term *Kalipuna*. The male form is essentially identical to *Kalina*, the name the Carib of the mainland still today employ to refer to their own people (see Boomert 1986).

naissance. Besides, the question why it has taken so long to identify Island Carib ceramics should be answered while the temporal and cultural relationship between the various Suazan and Cayo pottery complexes in the Windwards has to be further analysed.

One aspect of the problem, our knowledge of the *Kalinago* ceramic complex for as far it can be reconstructed from the documentary evidence has recently been studied to greater depth than previously (Harris 1999; Hofman and Bright 2004). Iconographically Island Carib ceramics are poorly known. Only a few pictures are known showing pottery as part of the Amerindian scenery in the islands (see Allaire 1984). Such an illustration is represented by an engraving of Sébastien Le Clerc which was published in Du Tertre's *Histoire Générale* of 1671. It shows a meeting between French sailors and Island Carib on the beach of one of the French islands (Du Tertre 1973:II-372). Unfortunately, the vessel illustrated by Le Clerc is of a very general shape. The only publication which is accompanied by detailed pictures of a number of Island Carib artefacts including pottery vessels is Sieur De la Borde's *Relation des Caraïbes sauvages des Isles Antilles de l'Amérique* of 1674 which shows a couple of vessels provided with somewhat pointed bases and decorated with designs which unfortunately appear to be largely or entirely arisen from the fantasy of the illustrator (De



Figure 2 Island Carib pottery vessels shown in Sieur de la Borde's Relation des Caraïbes sauvages des Isles Antilles de l'Amérique (1674).

la Borde 1992:Figures 10-11; see Figure 2). Other items such as a Carib warclub (*bouton*), a paddle and a *coui*, i.e. a halved calabash used for serving cassava beer, are shown to be ornamented with similar motifs. Whether the illustrator intended to show that these items were decorated with painted or incised designs is unclear. According to the Anonymous of Carpentras (2002:132-134), the Island Carib painted their *couis* all-over red or applied black motifs on a red background. Breton (1999:7) notes that they used to smudge most of their pottery by firing it in a reducing rather than oxidizing environment resulting in blackened surfaces and subsequently varnishing it with *élémi*, a natural resin derived from the bark of the locust tree (*Hymenaea courbaril*).

Interestingly, as noted previously (Boomert 1995), the nomenclature of the various Island Carib vessel shapes, recorded by seventeenth- to eighteenth-century authors such as the Anonymous of Carpentras, Breton, Rochefort, Du Tertre, Du Puis, De la Borde, Labat, and the Anonymous of St. Vincent, shows an interesting distinction between two gender-related functional earthenware categories. Vessels typically associated with the male sphere of activities carry names of Cariban linguistic affiliation while forms connected with the fe-male occupations in Island Carib society are indicated by Maipuran Arawakan or European names. The male-associated vessels include well-finished, more or less ceremonial ceramics, used for communal use during meals, the preparation of cassava beer or for serving the latter during drinking feasts, while the female-related earthenware comprizes only purely domestic vessels next to griddles.

The dimorphism in Kalinago vessel nomenclature accurately reflects the distinction between the gender-affiliated registers employed in Island Carib society in which the men, though speaking basically Northern Arawakan, used a largely Kalina (Mainland Carib) or Kalina-derived vocabulary, while the women employed a fully Arawakan lexicon (Hoff 1994, 1995). As is well known, part of the Island Carib myths of origin ascribe this linguistic situation by postulating that the men in their society are descended from Caribanspeaking warriors who once immigrated into the Windward Islands from the area of the Galibis, i.e. Kalina, of the Guianas, more specifically the lower Maroni River in northeast Suriname and northwest French Guiana. They would have extinguished the men and married the women of the original inhabitants of these islands who spoke a Maipuran Arawakan language closely related to Lokono or True Arawak of the South American mainland and south Trinidad. It is well to realize that contrary to the commonly held view, the Island Carib narratives on their origin are certainly not unanimous in claiming exactly this scenario. To the contrary, one of the versions recorded holds that in fact the Windwards were uninhabited at the time of the Island Carib immigration from the Guiana coastal zone (Gullick 1980).

The Cariban names characterizing the male-related Island Carib vessel repertoire suggested to Allaire (1977, 1984) that the origin of this portion of their pottery complex had to be sought in the Guianas. Though his reasoning cannot be accepted without qualification, the linguistic resemblance is certainly indicative of a mainland connection. Besides, Allaire's and the author's study of *Kalinago* pottery manufacture as well as vessel morphology and decorative patterns clearly suggests that the early historic Island Carib ceramic complex developed parallel to that of the present Kalina Indians of the Guianas out of a lateprehistoric ancestral tradition common to both. This latter ceramic assemblage could be identified as the Koriabo complex, an offshoot of the Koriaban subseries of the Guianas, itself forming part of the Polychrome Tradition or Marajoaroid series of Amazonia (Boomert 2004). As much of the Cayo pottery of the Windward Islands shows typically Koriabo vessel shapes and decorative motifs, the author has concluded that this insular complex forms a derivation from the Koriabo ceramics and, consequently, represents the *Kalinago* pottery tradition. Besides, just as much Koriabo pottery in the Guianas, a number of Cayo potsherds from New Sandy Bay, St. Vincent, appear to be tempered with *caraipé*, i.e. the burned bark of the *Licania* tree, which is indigenous to the Guianas and Trinidad, but unknown from the Windward Islands (see Boomert 1986, 1995).

It is noteworthy that not the entire Cayo ceramic repertoire can be interpreted as emanating from the Koriabo complex of the Guianas. Instead, one particular vessel shape, Vessel Form 4 of Boomert (1986), cannot be ascribed to this mainland ceramic tradition. It comprizes more or less biconical bowls of medium proportions showing concave necks and restricted composite contours, often decorated with punctated or nicked small knobs at the corner point (see Boomert 1986:Figures 3-4, 5-4, and 10-4). Form as well as ornamentation of this vessel shape show close similarities to the Late Chicoid bowls of Hispaniola, Puerto Rico and the Virgin Islands, especially those included by García Arévalo (1978: Figure 2, Lam. III:b-c) in his *cerámica criolla* category of historic times. This cultural link with the late-prehistoric Indians of the Greater Antilles may originate from the capturing of Taíno women by the Island Caribs which together with the raiding of *Lokono* (Arawak) women from the mainland and Trinidad can be taken to have been responsible for a continuous reinforcement of the Maipuran Arawakan element in Island Carib society. Otherwise, it might be ascribed to Taíno Indians who escaped from Puerto Rico and the Virgin Islands due to Spanish pressure in the contact period (Bright, personal communication 2010).

Although the mainland affiliations of Cayo ceramics suggest that the major theme in the Island Carib myths of their origin is historically correct, doubtlessly the Kalinago settlement in the Windward Islands formed only the ultimate outcome of already existing relationships of intermarriage, trade, and ceremonial exchange, thus cementing rather than disrupting long-established patterns of interaction and communication between the mainland and the Lesser Antilles. Clearly, the formation of the Kalina/Kalinago/Lokono sphere of interaction, closely knit by ties of kinship, ethnicity, language, exchange, war, and culture, which encompassed the Windward Islands, Trinidad and the littoral zone of the Guianas, had its roots in Troumassoid times. Indeed, if the Tobago evidence is exemplary for the Windward Islands, the gender-related division of Island Carib ceramics had its precursors in the Troumassoid series of the Lesser Antilles. Both subsequent Tobagonian Troumassoid complexes, Golden Grove and Plymouth, show a division into basically two distinct wares with specialized functions and, consequently, different occupational and gender associations, i.e. a male-related high-quality ware serving purposes of more or less ceremonial character and a female-affiliated coarse ware with purely domestic functions (Boomert 2005, 2007; Boomert and Kameneff 2003).

In 2008 northeast Dominica was selected for investigating archaeological sites yielding Cayo ceramics by the Leiden team as it is adjacent to the present Carib Territory and shows similar environmental characteristics. The Carib Territory consists of 1530 ha of heavily wooded hilly country crossed by deep ravines and rocky streams, extending along some 13 km of rugged, irregular coastline. Its population is concentrated in seven coastal hamlets, of which Salybia forms the administrative centre. These villages, which are distinguished by generally widely dispersed houses, are connected by the winding coastal road running from Marigot to Castle Bruce (Kouanari) and beyond. In addition, scattered dwellings are found along the hillsides. The bay of Salybia is the only landing of some substance for the fishermen among the Carib. At present houses are of Dominican Creole type, raised 0.5-1.5 m from the ground on piles, with flooring and walls of hardwood boards and galvanized iron sheeting for roofs (Honychurch 2000:10; Taylor 1938). They typically shelter nuclear families. Each house (*muinan*) has a mud courtyard behind it with a separate kitchen and latrine. As Hoogland (1984) notes, organic debris is generally disposed of by dumping it on sloping ground beyond the yard while metal and glass are thrown on top of a rubbish pile next to the yard. Food remains such as chicken bones and fish are fed to pigs or dogs.

The traditional Island Carib village showed a quite different layout. As described by seventeenth- to eighteenth-century observers such as the Anonymous of Carpentras, Breton, Du Tertre, Rochefort, Labat, and Le Breton (cited by Lafitau), it consisted of a large men's (assembly) house with a small plaza in front, surrounded by smaller family dwellings. The men's house (táboüi) was a barn-like oval to rectangular building, measuring 18-30x6-7.5 m (135-225 m²) and reportedly capable of holding up to 120 hammocks. It consisted of a row of heavy forked posts, placed at distances of ca. 2 m and embedded 0.5-1.5 m into the earth at the bottom, which supported the roof. From the top rafters radiated outward and downward to the ground, supporting the roof which was covered with palm leaves, tied with cords. Sometimes one end was entirely open while the other end was closed by a wall of roseau reed (Arundo saccharoides) lathes, only interrupted by a door. If the men's house was entirely closed, it had two doors, one at either end. Besides, it had a small opening in the roof, the 'devil's opening', which allowed the shaman's tutelary spirit to enter during a séance. The táboüi was surrounded by small family houses, i.e. oval to round huts with palisaded walls consisting of reeds fastened across and roofs covered with palm leaves. These huts had only one opening and were divided into two parts, one serving as the sleeping quarters of women and unmarried children and the other one forming the kitchen. A separate shed was used as the storeroom of weapons and valuable utensils.

The men's house served as a daily meeting place for the men of the village, as a place to receive and accommodate guests, to hold communal feasts, and occasionally to bury deceased (male) members of the community. The men used to spend part of the day in the assembly house, discussing matters of war and peace from their hammocks. Women entered only to serve meals or to wipe the (dirt) floor. The only contemporary representation of an Island Carib (or Kalina) village is shown on a unique ink and watercolour manuscript map, probably drawn by Willem Mollens, the Dutch governor of the Courlander settlement at present-day Plymouth on the leeward coast of Tobago, dating to 1656 (see Boomert 2002). This map, the original of which was destroyed during the Second World War, shows the Amerindian village at the back of the Courlander fortress Jekabs (Jacob), called after the Duke of Courland (present Latvia). The village consists of a rectangular, entirely closed, building with thatched roof, obviously the men's house, occupying the centre of an open square which is encircled by a series of (perhaps twenty) round family houses with conical, thatched roofs (Figure 3). The drawing suggests that the walls of both the men's house and the family huts were made of closely-sets poles or reeds. The structures are overshadowed by a tree of considerable size. Dark-skinned, sparingly clad Indians, holding spears in their hands, are shown inside the village (Mattiesen 1940:Karte B).



Figure 3 Part of an ink and watercolour manuscript map, probably drawn by Willem Mollens in 1656, showing a probably Island Carib village situated northwest of the Courlander fort Jekabs (here not shown) at present Plymouth, Tobago. Adapted from a reproduction by Mattiesen (1940:Karte B); original destroyed during the Second World War.

Cayo pottery revisited

As the technological and cultural aspects of the pottery materials recovered during the 2008-2010 surveys and excavations at St. Vincent and Dominica are still under study at Leiden University, only a preliminary account of these materials can be given. As to manufacture, the pottery found at all sites under discussion can be characterized as tempered predominantly with moderate amounts of local quartz sand and small quantities of black minerals. Whether these non-plastics can be identified as deliberate additions to the potter's clay or natural impurities has to be determined yet. Coiling apparently formed the primary method of manufacture. Bases were either made using moulds or by flattening out of a slab of clay. Firing took place in an open fire. Surface wall colour varies from black or dark grey to brownish red, depending on whether reducing or oxidizing conditions prevailed during firing. It is noteworthy that high proportions of pottery showing darkish surfaces due to reducing conditions of firing have been identified at several sites yielding Cayo ceramics in the Windward Islands (Boomert 1986).

Three major Koriabo vessel shapes are ubiquitous among the Cayo ceramics encountered during the Leiden excavations in St. Vincent and Dominica. The small to mediumsized jar with outcurving rim, vertical or almost vertical neck and globular body (Cayo Form 5), which represents a direct copy of the Koriabo necked jar (Form 11), is most common. Two vessels, accidentally encountered in 2004 at the Woodford Hill site on Dominica, belong to this class (Boomert 2009; see Figure 4). Besides, a decorated rim fragment of this type of necked jar was encountered by Steve Lenik (personal communication) in protohistoric context at the Indian River site on Prince Rupert Bay, Dominica, in 2006. Apart from Dominica and the New Sandy Bay, Argyle, Brighton, and Friendly Bay sites on St. Vincent (Figure 5), Cayo Form 5 necked vessels are known from Martinique (Allaire 1984:Figure 3A), Plage de Roseau, Basse-Terre, Guadeloupe (Richard 2003:Figure 4), and Icacos, southwest Trinidad (Boomert 1986:Figure 21:7). Another typically Cayo



Figure 4 Jar of Cayo Form 5, accidentally encountered at Woodford Hill, Dominica, in 2004. Collection Dominica Museum, Roseau.



Figure 5 Jar of Cayo Form 5, provenance unknown, St. Vincent. Collection St. Vincent and The Grenadines National Trust, Kingstown.

vessel shape, the medium-sized to large jar showing a convex neck and globular body of Cayo Form 8 (Boomert 1986:Figures 4:B3, 6-4), which closely resembles Koriabo Form 13, has been identified at the Indian River site on Dominica by Steve Lenik (personal communication) and at Galby Bay, Grenada, by Cody Holdren (1998:Figure 5-20). In St. Vincent this vessel form has been encountered at the Argyle site.

A third, typically Koriabo-derived vessel form is represented by the medium-sized open bowl showing concave sides and lobed rims of Cayo Form 3 (Boomert 1986:Figures 3-3, 5-3, 10-2). It is the insular counterpart of Koriabo Form 5 (Boomert 1986:Figure 12-5) and is known from Argyle and Friendly Bay, St. Vincent, and Plage de Roseau, Basse-Terre, Guadeloupe. Finally, it is noteworthy that the rims of all Cayo vessel shapes show predominantly flattened lips. This applies also to such non-diagnostic forms as the mediumsized, restricted bowls of Cayo Form 1 (Boomert 1986:Figure 3-1), the small to mediumsized open bowls with convex sides of Cayo Form 2 (Boomert 1986:Figures 3-2, 5-2) and the medium-sized biconical bowls of Cayo Form 4 showing concave necks and restricted



Figure 6 Decorated biconical bowl of Cayo Form 4, provenance unknown, St. Vincent. Collection St. Vincent and The Grenadines National Trust, Kingstown.

composite contours which are often decorated with punctated or nicked small knobs at the corner point (see Boomert 1986:Figures 3-4, 5-4, 10-4). Examples of the latter vessel category, which is closest to the Late Chicoid bowls of Hispaniola, Puerto Rico and the Virgin Islands, have been encountered at both the New Sandy Bay and Argyle sites on St. Vincent (Figure 6).

Pottery ornamentation is relatively limited but varied. Biconical bowls and necked vessels of respectively Cayo Forms 4 and 5 often show vertical or horizontal oval knobs with a series of indentations on their largest belly diameters. This and other types of simple modelling (Figure 7) are known from various sites on Dominica (e.g. Petitjean Roget 1978: Photos 4-5); it is reported from Argyle and New Sandy Bay, St. Vincent (Boomert 1986: Figure 10-4) and Plage de Roseau, Basse-Terre, Guadeloupe (Richard 2003:Figure 4), as well. Besides, typically Cayo/Koriabo nubbins showing punctations applied with a hollow reed have been recovered at the Indian River site, Dominica. Otherwise, such nubbins are known from Woodford Hill, Dominica (Petitjean Roget 1978:Photo 5), New Sandy Bay, St. Vincent (Boomert 1986:Figure 7-7), and Galbi, Grenada (Cody Holdren 1998:Figure 5-20). Rows of punctations or fields of dispersed punctations are common on especially handles also ornamented with geometric and anthropozoomorphic head lugs (e.g. Boomert 1986:Figure 7-2,4). The Cayo Form 2 open bowl with bevelled rim inlaid with a series of glass seed beads, recovered by Allaire (1994) at Argyle, of which a counterpiece was found during the Leiden work at this site, can be taken to belong to this design category.

Decorative motifs consisting of rows of punctations running parallel to single or multiple incised lines are known from Argyle and Plage de Roseau, Basse-Terre, Guadeloupe (Richard 2002a). Interestingly, comparable designs comprising rows of punctations, sometimes combined with parallel running incised lines, are encountered also on the ceramics of contemporary non-Cayo sites in the Guadeloupean archipelago such as Anse du Coq, Marie-Galante, and Morne Cybèle, La Désirade (Hofman 1997). Appliqué fillets showing rows of punctations are known from Sauteurs, Grenada (Cody Holdren 1998:Figure 5-8)



Figure 7 Decorated rimsherd of a Cayo Form 5 jar, recovered during the 2009 excavations at Argyle, St. Vincent. Collection St. Vincent and The Grenadines National Trust, Kingstown.

and Ile de Ronde (Petitjean Roget 2001/2002:60). Exclusively incised decorative motifs are less common. Such designs have been reported from New Sandy Bay, St. Vincent (Boomert 1986:Figure 8), Sauteurs, Grenada (Cody Holdren 1998:Figure 5-7:B,D), and Plage de Roseau, Basse-Terre (Richard 2003:Figure 3). Complicated incised motifs showing wavy lines associated with supplementary design elements are known from Argyle.

Conclusions

Reviewing the Cayo pottery complex, it should be acknowledged that due to the preliminary stage of investigation of the Argyle ceramic materials definite conclusions cannot be drawn. Nevertheless it is obvious that both at the Dominican sites investigated and at Argyle and Friendly Bay, St. Vincent, a minority of typically Troumassoid pottery features is represented in association with the Cayo ceramics. For instance, a ceramic mode such as scratched surfaces frequently occurs at all of these sites. This situation is matched by the presence of scratched potsherds at other sites yielding Cayo materials in the Windward Islands, e.g. Sauteurs Bay, Grenada (Cody Holdren 1998:Figures 5-10,12), suggesting that vessel wall scratching formed a Troumassoid pottery mode still in use some time after the replacement of most Suazan Troumassoid ceramics by the Cayo complex. The continued practice of scratching vessel surfaces following the introduction of Cayo vessel shapes and decorative motifs apparently lasted well into colonial times as it is a ceramic feature well known from the historic folk pottery of the region (e.g. Drewett 1997:Figure 4; Petersen and Watters 1988:Figure 8). If so, it would indicate a gradual amalgamation of Cayo and Suazan Troumassoid, rather than the abrupt substitution of the latter by Cayo (Island Carib) ceramics. This is also suggested by the presence of typically Suazan footed griddles at the Argyle site.

Coarse-ware scratched pottery vessels and footed griddles typically belonged to the domestic earthenware in the Suazan Troumassoid communities of the Windward Islands, Barbados and Tobago, and, consequently, were affiliated with the female sphere of activities in Amerindian society. The coarse-ware (low-quality) pottery obviously served primarily as cooking vessels or as receptacles for food storage and as cassava-brewing containers (Boomert 2007; Boomert and Kameneff 2003). All of this suggests population continuity

and, moreover, the absorption of locally resident Suazan women into Cayo/Island Carib society, emerging in the Windward Islands in late-prehistoric times. This archaeological scenario is astonishingly similar to that suggested by the Island Carib traditions of their origin, which refer to groups of male immigrants from the Guiana coastal zone intermixing with the female population of the Windward Islands. Moreover, it reflects the Island Carib dimorphism in vessel nomenclature recorded in the mid-seventeenth century. On the other hand, it is well to keep in mind that the suggested male *Kalina* settlement on the islands most likely formed only the ultimate outcome of already existing relationships of intermarriage, trade and ceremonial exchange, thus cementing rather than disrupting long-established patterns of interaction between the mainland and the Antilles.

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"Removed from off the face of the island"

Late pre-Colonial and early Colonial Amerindian society in the Lesser Antilles

Alistair J. Bright

Archaeologically speaking, the transition from pre-Colonial to Colonial Amerindian culture in the Lesser Antilles is still poorly understood. On many islands, radiocarbon dates extend no later than the early fifteenth century, and archaeology of Colonial period Amerindian society is almost non-existent. However, from the mid-seventeenth century onwards, Lesser Antillean Amerindian society basked in considerable attention from European travellers, traders and missionaries. Many of these committed their observations to paper, yielding a plethora of ethnological accounts avant-la-lettre as well as maps of fresh Colonial period Caribbean, with the aim of providing a baseline for a yet to be initiated archaeology of Colonial period Amerindian society in the Lesser Antilles. Not only the great potential but also the problems associated with these lines of evidence will be discussed.

Desde la perspectiva de la arqueología, la transición de la cultura pre-Colonial a la Colonial en las Antillas Menores sigue siendo mal conocido. En muchas islas, fechas de radiocarbono no sobrepasan los principios del Siglo XV y una arqueología sobre la sociedad amerindia del período colonial es practicamente inexistente. Sin embargo, a partir del Siglo XVII, la sociedad amerindia de las Antillanas Menores es objetivo de considerable atención de parte de viajeros europeos, comerciantes y misioneros. Muchos de ellos escribieron sobre sus observaciones, produciendo de tal manera una plétora de memorias etnológicas adelantos a su tiempor , así como mapas de las posesiones coloniales recien obtenidas. Este articulo examina el registro etnohistórico y cartográfico en el Caribe del período Colonial, con el objetivo de proporcionar una línea base para una arqueología de la sociedad indígena en las Antillas Menores en el período Colonial, que aún es por estar iniciado. No sólo el potencial, sino también los problemas asociados con estas líneas de pruebas se discutirá.

Sur le plan archéologique, la transition entre la culture amérindienne précoloniale et coloniale est toujours mal comprise dans les Petites Antilles. Sur la plupart des îles, les dates radiocarbones ne remontent guère plus loin qu'au début du XVe siècle et l'archéologie de la société amérindienne de la période coloniale est quasi inexistante. Cependant, dès la moitié du XVIIe siècle, la société Amérindienne des Petites Antilles a reçu une attention considérable de la part des voyageurs, commerçants et missionnaires européens. Bon nombre d'entre eux ont consigné leurs observations par écrit, laissant une pléthore de comptes-rendus ethnologiques avant-la-lettre, de même que des cartes des nouvelles possessions coloniales. Cet article examine la richesse des registres ethno historique et cartographique caribéens de la période coloniale, dans le but de fournir une base de référence pour une archéologie Amérindienne de cette période qui doit encore être engagée dans les Petites Antilles. Nous discuterons ici non seulement du grand potentiel de cette nouvelle approche, mais aussi des problèmes qui y sont associés.

Introduction

Archaeologically speaking, the transition from pre-Colonial to Colonial times in the Lesser Antilles is as yet poorly understood. On many islands, radiocarbon dates extend no later than the early fifteenth century, and archaeology of Colonial period Amerindian society is still in its infancy in the Lesser Antilles. Ethnohistorical accounts of Lesser Antillean Amerindian society are extremely sparse and fleeting at best until the beginning of the seventeenth century, and only really pick up from the mid 1600s onwards. There is a gap of arguably some 150 years between the first eyewitness accounts of the Spanish in the Lesser Antilles in the 1490s (Chanca 1993; Columbus 1997) and the more lengthy accounts produced mainly by French missionaries from the mid-1600s onwards, following in the wake of permanent European settlement of the region. Prior to that, sporadic and fleeting European forays into the Lesser Antilles yielded sparing, superficial reports, while the Spanish concentrated their energies on the Greater Antilles and later Middle America and South America. This leads to a situation of arguably some 250 years during which our view of Amerindian society is murky at best and non-existent at worst. Therefore, this article will first sketch the outlines of late pre-Colonial (late phase Late Ceramic Age: AD 1000-1500) Amerindian society on the basis of archaeological research, before moving on to discuss Amerindian society in Colonial times as glimpsed through ethnohistorical sources and Colonial cartography. The overview will centre mainly on the Windward Islands, because most (extensive) ethnohistorical sources focus on the Windward Islands (and Guadeloupe). Though highly preliminary and far from exhaustive, it is hoped that this selective overview of early Colonial period resources will go some way in contributing to a yet to be elaborated archaeology of Colonial period Caribbean Amerindian society.

Reconstructing late pre-Colonial-period Amerindian society

The Windward Islands are generally considered to have seen continual occupation from the Early Ceramic Age (AD 300/400-700) up to Colonial times (Allaire 1977; Boomert 1987; Bullen and Bullen 1972; Drewett, ed. 1991), although radiocarbon evidence for the Windward Islands in the main does not stretch beyond AD 1300 (see also Bright 2011; Fitzpatrick 2006). From the 1490s onwards, (ethno)historical sources attest to a significant Amerindian presence in the region (Anonymous of Carpentras 2002; Breton 1978, 1998; De Laet 1931; Nicholl 1607). However, the question is not whether there was an indigenous survival, but rather which (indigenous) peoples survived and hence were reported on in the Early Colonial Period. Unlike the Greater Antillean islands, which seem to have experienced a relatively undisturbed local development from the Early Ceramic Age onwards, some of the Lesser Antilles (and the southern in particular), apparently saw the continual arrival of mainland South American newcomers (Hofman *et al.* 2007; Hofman *et al.* 2011), most intensively during the final centuries of the pre-Colonial period (see below).

In general, Amerindian settlement in the Windward Islands reached its peak during the late phase of the Late Ceramic Age, with some 100 settlements distributed over the islands, as well as another 150 smaller sites (Bright 2011). Most Amerindian settlements are postulated to have been situated along the coast, and close to mollusc-rich mangrove habitats and offshore coral reefs, rather than to the moist, forested areas and freshwater rivers that were so important in earlier times (Bérard and Vidal 2003:26; Keegan 2000:146). Settlement layout likewise appears to hold over from earlier times, with no apparent single structuring principle, and dwellings of varying shapes and sizes (Bright 2003; Morsink 2006). Burial practices are more complex though, with a noticeable shift from communal to private interment and all kinds of post-mortem manipulation of the grave and the interred taking place (Hofman and Hoogland 2004). Allaire (1991:716-717) characterized Late Ceramic Age Windward society as Amazonian in the broadest sense of the word, with its tropical forest ecosystem setting, subsistence based on slash-and-burn cultivation of manioc, supplemented by hunting and fishing, relatively low populations and simple, village-based social organization. Allaire (1991:717, 722) also advanced the possibility of an incipient, more integrated level of social development, in deference to Roosevelt's work (underscored by later developments in Amazonian archaeology) and cross-comparative research on coastal societies worldwide. Already far from culturally homogeneous in earlier times, Windward Island society appears to have diversified dramatically in final pre-Colonial times. Regional unity gave way to more localized contact networks perhaps under the influence of an increasing influx of people from the mainland of South America and possibly the Greater Antilles and Leeward Islands (Hofman et al. 2007). A number of late pre-Colonial/early Colonial-period ceramic assemblages evince a marked Guianan influence (particularly of the Koriabo complex), and have been termed Cayo ware (Boomert 1986, 2004, this volume). These ceramics are tentatively linked to the historically recorded Island Carib (Allaire 1980, 1984; Boomert 1986, 1995, this volume), who recount stories of their migration from the South American mainland to the islands (see below).

From the late 1400s onwards, we move into the realm of written records for the Caribbean region, although the accounts discussing the Lesser Antilles remain sparse and unrepresentative until the advent of the seventeenth century. The ethnohistorical record will now be considered, first for the Caribbean in general, and then for the Windward Islands in particular.

Reconstructing early Colonial-period Amerindian society

Having sketched the outlines of an Amerindian islandscape during late pre-Colonial times, it is time to advance into the Colonial era, and draw what we can from historical sources and Colonial-period cartography. There is a considerable amount of literature on the use of ethnohistorical sources by archaeologists, particularly dealing with how "[H]*igh levels of cultural continuity* [...] *have prompted archaeologists to examine the historical record to augment, elucidate and explain prehistoric culture patterns and developments*" (Spores 1980:578-579). While archaeological and documentary data are both convergent and parallel categories of evidence, to be utilized together or independently of one another (Spores 1980:579), Wilson (1994) has raised numerous issues concerning the use of ethnohistorical sources by archaeologists. Foremost, there is the issue of mixed epistemologies. Using historical accounts in conjunction with archaeological data from before contact period raises similar problems as viewing structure and history in a synthetic fashion: namely the

difficulty of integrating macroscale and microscale processes [of sociopolitical change] into a coherent explanation (Wilson 1994:23-24). Ethnohistoric documents record events and personalities, and give glimpses of the structure of relationships between people, and at best, insight into the structure and operation of cultural systems. Archaeology addresses human behaviour on a much larger scale – for example in the numbers and sizes of settlements through time, characteristics and changes through time of artefact assemblages, settlement patterns and so on. However, for this research, these concerns are less germane, as the primary intention is not so much to project ethnohistorical findings back into the archaeological past, but rather to assess the potential for a complementary archaeological perspective on ehnohistorical source material. A secondary intention would be to compare late pre-Colonial data to early Colonial information, in a sense bridging the historical divide, to inquire as to what potentially stayed the same and what changes may have taken place from pre-Colonial to Colonial times.

Which Amerindians?

One of the most intriguing developments in Lesser Antillean society from pre-Colonial to Colonial times is that of the supposed large-scale arrival of newcomers on the scene from coastal areas of the Guianas of South America. This phenomenon comes as no surprise to archaeologists of the region, who have long recognized that insular Caribbean society is marked by a constant to-ing and fro-ing between islands and mainlands (cf. Hofman et al. 2007, 2011). The final migration appears to have been more impacting than any earlier movement though, allegedly entailing the eradication of the male Arawak residents of the islands and the usurping of the female population for the purposes of the new arrivals, who came to be known as Kalinago or Island Carib. However, Boomert (1995:31-32) cautions that, notwithstanding the Caribs' own accounts of their arrival, it may be safer for now to regard them as immigrants rather than invaders. According to Breton (1978) these Island Carib referred to an unspecified mainland origin, while Du Puis (1972) and Du Tertre (1654) add that they were descended from the mainland Kalibis (i.e. Galibi). All three agree that the newcomers first settled on Dominica (see also Verrand 2001:103-104). Rochefort records that the Island Carib themselves claimed descent from the Galibis of Guyana, and first settled on Tobago, one of the islands closest to the mainland (Rochefort 1658:324-330). Rochefort also refers to the mainland origin of the earlier inhabitants of the islands, highlighting the similarity in language between that spoken by Arawaks of the mainland and Island Carib women (Hulme and Whitehead 1992:120). Castres (2002:70) does not make mention of a mainland origin, but writes that the Amerindians believed in a great flood, which only a man named Loveco survived, from whom they were all descended.

These island testimonies are corroborated by a slightly earlier mainland source, an account written by James Ley around 1608 (Lorimer, ed. 2006). He writes the following: "The Carybes have tenn Rivers, owya Kayani, Macullia, Cawrur, Surinamma. Towpannoma and one other little River. And one other little Iland called Dominica; And one Iland called santa bissin, And one Iland called santa Luea, and an Iland called Camawya, their Captaine is Mayerawon" (Ley in Lorimer 2006:326-327). The rivers that have been identified (Macuria, Kourou, Suriname and Coppename) are all located in Surinam and French Guyana, the islands referred to are Dominica, Saint Vincent, Saint Lucia and Grenada (see also Lorimer 2006:318-320, 326-327). Castres also mentions that the Carib who formerly possessed many of the Lesser Antillean islands were at the time of his writing mainly established in St. Vincent, Dominica and on the mainland around the Amazon river, near the Suriname river and close to Cayenne (Castres 2002:74).

As the Colonial period wore on, yet another major demographic upheaval was to take place however, compounding the hazy view of ethnicity in the area during the early Colonial period. In the words of Shepard (1971:21): "In the occasional visits to Saint Vincent, two distinct races of men were discovered, they were of different origins, and their appearances and manners plainly corresponded with those of different portions of the globe. One of these tribes had evidently descended from the Aborigines of the Island, those of the other tribe were as evidently intruders". The "intruders" represented the intermixed groups of Amerindians and escaped African slaves, who came to be known as Black Carib (cf. Young 1971), and later Garifuna (Gonzalez 1988). A number of early sources refer to several shipwrecks of slaving ships off the coast of St. Vincent or Bequia in the seventeenth century as the inception of this intermingling. Survivors of the shipwreck made it to the shore and were accepted into Amerindian society (Foster 1987; Gonzalez 1990:25; Johnson 2007:181). However, Foster (1987) points to the early intermixing of Africans with Amerindians borne out by three terms in Breton's 1665 Carib-French dictionary: "Chibárali, cachíonna, yaboúloupou, sont les enfants engendrés des Sauvages et des Négresses, qui sont nommés ainsi" (Breton 1998:7). Thus, while the shipwreck may have formed a considerable impetus to this process of ethnogenesis, there had probably been sporadic incidences of intermingling almost as soon as African slaves arrived in the Caribbean early in the sixteenth century, as a result of prisoners taken from the Spanish during Island Carib raids on Puerto Rico (Foster 1987:75; Moreau 1992:69). Their numbers grew as escaped slaves from other Windward Islands joined up with them in defiance of Colonial authorities (Boomert 2002:150; Gonzalez 1990).

These Black Carib adopted aspects of Island Carib culture, even going so far as to practice cranial modification to set themselves apart from black slaves of Europeans, and called themselves *Kalinago* (Shepard 1971:24). "The next generation thus became as it were, a new race, they gradually quitted the woods, erected huts, and formed little communities on the coast" (Shepard 1971:24). In time, the Black Carib came to outnumber the original Carib, and manifested themselves as the most active and effective opponents of European Colonial venture. According to Shepard, they also initiated hostilities against the Yellow Carib (i.e. unmixed) populations who "at length were obliged to retire to the Windward parts of the Island, some fled to the Continent, and some to Tobago" (Shepard 1971:25).

Having provided the briefest of outlines of late pre-Colonial and early Colonial period Amerindian lifeways, we now turn to a consideration of the ethnohistorical record and Colonial cartography for evidence of Amerindian habitation and/or presence in the islands. While many sources make general remarks about Amerindian lifeways, choices governing settlement location and the structure of villages (cf. Breton 1978, 1998; Le Breton 1998), their observations are generally not specific enough to allow identification of any exact settlement locations, and will therefore not be considered here.

Indirect ethnohistorical evidence

Indirect evidence consists of reports of encounters and/or interaction with Amerindians, for which either the general locality of the encounter or of Amerindians settlements could potentially be reconstructed.

- "I kept on sailing along the coast of this island [Guadeloupe] without being able to find a port or a bottom where I could anchor until I reached the north side, where most of the population lives, and I went in very close to land and anchored with the whole fleet [...] The villages of this island were not many, and they were scattered in various locations on the edges of the island" (Columbus 1997:205)
- "Along the seacoast there were small clusters of hamlets whose inhabitants would all flee as soon as they noticed our coming" (Chanca 1993:19).
- "From the said isle [La Deseade in text, but probably actually Marie-Galante] we passed to another island, called Guadeloupe, which is very mountainous and inhabited by savages; in it there are numbers of good ports, in one of which, named Macou, we took in water, and as we landed we saw more than three hundred savages, who fled into the mountains at our approach [...]" (Champlain 1959:6).
- On the eve of the 30th of August 1625, General Boudewijn Hendrickszoon arrived at the south coast of St. Vincent, and anchored six ships in each of the three bays, to draw more Amerindians on board and to better refresh their dwindling supplies. They departed again on September 10th, well provisioned (De Laet 1931:93-94).
- On June 4th 1630, the Admiral's fleet found itself just off Barbados, and arrived at St. Vincent the day after, anchoring off the south coast in the Sint Anthonis Bay (De Laet 1932:164).
- On February 10th 1626, General Boudewijn Hendrickszoon found himself off the north-west coast of Dominica, near a large sandy bay and a little river where fresh water could be taken in. An Amerindian village was located about half a mile away, whose inhabitants were described as malevolent and untrustworthy (De Laet 1931:116).
- On July 12th 1629, General Pieter Pietersz. Heyn and his fleet anchored off the south coast of St. Vincent, at the Sint Anthonis Bay. Two other ships had departed a little before the rest of the fleet, and had arrived at Grenada on June 27th. The crew had set foot on shore, and had dug a number of holes on the beach to acquire fresh water. They had also gone a little inland to visit two villages where many Amerindians lived, who had received them in friendly fashion. These warned them of another group of Amerindians who lived on the other side of the island in the hills, who were evil and showed animosity to strangers and even them (De Laet 1932:58).
- Commander Jan Jansz. Van Hoorn and his fleet anchored at a bay along the southwest coast of Grenada on June 12th 1629. The Amerindians of the island are described as being a very malicious people, who all ran off upon the arrival of the Dutch. They could not be made to come out and converse, but displayed extreme animosity, firing poisoned arrows at the crew from the thickets. The fleet departed again, laden with fresh water, ballast and lumber, but no victuals (De Laet 1932:91-92).
- Moreau de Jonnès (1920), a Frenchman who aided the Carib in their war against the English records his arrival at St. Vincent in 1795 by ship among the Red Carib somewhere along the eastern coast. Amerindians in canoes come out from the shore to help guide the ship past treacherous reefs and banks to their natural harbour, which Moreau de Jonnès describes as follows:

This haven was a basin surrounded by a shelf of basalt 15 to 20 feet high; the depth of its water was enough to float a frigate. Two hillocks covered with a rich vegetation stood on each side of its opening to the sea, and their tufted trees, bending over the surface, formed a canopy to it. Beside a rushing stream which flowed from the mountains of the interior into the harbour rose the many huts of a large hamlet, like beehives in the shape of their roofs, made of palm-leaves, but their wattled sides allowed a free passage to the breezes and rays of light. In the middle of the village was a communal house containing an assembly-hall at least 80 feet long; there I found gathered together the chiefs and warriors of the two tribes, the Red and the Black Caribs (Moreau de Jonnès 1920:115).

Direct ethnohistorical evidence

Direct ethnohistorical evidence is such that Amerindian settlements are described, the locality of which can be pinpointed quite confidently. Various sources will be considered, roughly in geographical order from south to north.

Shepard (1831), in his overview of the Second Carib War details the location of several (temporary) Carib settlements on St. Vincent: the Vigie Carib camp, eastward of the upper Warrawarrou Valley not very far from the Fountain Estate, the Mount Young Carib settlement, the Wallibo settlement, and the settlement of Grand Sable where the English smashed 200 Carib canoes. The Morne Rond settlement remained occupied after the conclusion of the war. After the English victory over the Carib in the Second Carib War, the sentiment of the English settlers on St. Vincent was as follows: "[...] it is represented that the late attack upon them by the Charaibs was wholly unprovoked; and that in its operation cruelty and perfidy were so blended, that no future confidence can subsist; and that the sole alternative remains, of themselves, or of the Charaibs being removed from off the face of the island" (Young 1971:2). The government decided upon a forcible deportation of the majority of the Black Carib to the island of Roatán, off the coast of Honduras (Gonzalez 1988). However, the Black Carib were initially rounded up and herded onto the tiny island of Baliceaux, south-east of St. Vincent. Here they were forced to spend many months awaiting their final removal to Central America. A great number died on the island, weakened by hunger and ravaged by disease, and more died during the passage to Roatán (Gonzalez 1988).

In 1605, the ship the Olive Branch and its crew had been bound for the new English colony of Charles Leigh in Guiana, which was in desperate need of supplies and men (Jesse 1966; Lorimer, ed. 2006:xciv; Morgan 2004; see also Boomert 2002 and De Zutter, this volume). The Olive Branch was soon in dire straits itself though, as it completely missed its mark of Guiana, due to bad luck and incompetent seamanship. After seventeen weeks of sailing, the mutinous and starved crewmembers approached the coast of St. Lucia. Indians from a nearby settlement immediately came out to the ship in their canoes, to trade with the English. Realizing that the Olive Branch could not stock up on enough provisions to support the entire crew on its further journey and in light of the apparent goodwill of the Amerindians, a party under the leadership of Captain Nicholas Saint-Johns decided to stay behind on the island, until some means of rescue presented itself. The detailed nature of John Nicholl's account of the precarious sojourn of the English in the south of the island has allowed Caribbean archaeologist Ripley Bullen (1966) to reconstruct the localities mentioned in the text and tentatively link some of these localities to known archaeological sites. Some 200 years later, Pugnet (1804), a French doctor charged with inspecting the

health of the colonists on St. Lucia, records the presence of a Black Carib family at Choc along the northwestern coast and a so-called Red Carib¹ family residing at Vieux Fort.

In 1694 on Martinique, Père Labat, on his way to Cul-de-Sac Robert by canoe, got caught in a squall and sought refuge at la Pointe à la Rose. A Carib family lived here, and Labat described the family, the house and its visitors in detail: "This building is the last Carib Carbet remaining in Martinique. It was about sixty feet long by twenty-five feet wide and built something like a barn. The smallest posts were about nine feet high out of the ground. The rafters reached the ground on each side, and were covered by a thatch of palmiste leaves supported by lathes of roseaux. One end of the carbet was entirely closed by a wall of roseaux and palmiste, except for an opening leading to the kitchen, the other end was open (Labat 1970:87-89). A few years later, in 1700, Labat was on his way to Guadeloupe, but stopped off at Dominica to take on a cargo of lumber. His ship anchored on the leeward side of the island opposite the carbet of Madame Ouvernard (the mother of Thomas 'Indian' Warner) (Labat 1970:92). Labat then crossed the island to the windward side where he spent a further six days, visiting many carbets "from the point facing Macouba to the point facing Marie Galante" (Labat 1970:96). One of these Windward side carbets may have been that of the Dominican Carib chief Oüalláchoüala (known to the French as Le Baron) or his followers, who is mentioned in the earlier chronicles of the mid-1600s and was in fact the host of Father Breton (Breton 1998:73). Le Baron's settlement was called Itachi (Breton 1998:237), and was at or near present-day Vieille Case.

Concerning Guadeloupe, Carib were confined to isolated areas of Grande-Terre, where even there their numbers dwindled over the years, presumably under the impact of encroaching Europeans. In 1730, some seventy-six Amerindians were recorded and in 1746, Carib are reported as living on Ilet à Christophe in the Grand-Cul-de-Sac. In the nineteenth century, a number of Carib families are recorded at Anse du Petit Portland, and by 1855, the last Amerindians are documented to have taken refuge at Anse-Bertrand, Pointe des Châteaux and Le Moule. The last mention of Amerindians on Guadeloupe comes towards the end of the nineteenth century, when descendants of the Carib of Anse-Bertrand claim land to the west of Pointe de la Grande Vigie (Delpuech 2001:31-32).

The use of historic maps

Similarly to recent work in the field of Indonesian archaeology (Lape 2002), I propose to make greater use of the considerable potential of historic maps as testimonies of indigenous Amerindian activity. Of course, every map is essentially a "social construction of the world expressed through cartography" (Harley 2001:35), and as such harbours the same potential for manipulation and bias as any other type of historical evidence. Glazier (1983) was perhaps the first Caribbeanist to explicitly address the research potential of "antique" maps for the study of Caribbean prehistory, highlighting four potentially fruitful areas of inquiry: (1) the location of archaeological sites (mission sites and aboriginal settlements), (2) linguistic and ethnicity data in the form of toponyms, (3) cartouches that portray native flora and fauna and, (4) evidence of tribal migrations (Glazier 1983:556). Particularly the first two points will be taken up here. As above, evidence will be divided into direct and

¹ The term Red Carib as employed by Colonial European chroniclers generally means Amerindians of pure descent (cf. also the term Yellow Carib), as opposed to the Black Carib, who are of mixed African and Amerindian descent.

indirect, and discussed in that order. Under direct cartographic evidence falls any depiction of Amerindian settlements or other type of presence. Indirect evidence of Carib presence or settlement takes one of the following four forms: (1) indication of Amerindian presence, usually in form of a visualized trading encounter, (2) approximate location of settlement (proximity assumed), (3) general areas demarcated as Amerindian, and (4) Amerindian toponymy.

Direct cartographic evidence

On the 1770 Jefferys map of Tobago, mention is made of an "Indian Town", and three villages which are singled out as residences of Kings (Cardinal, Peter and Roussel - actually a Frenchman who had taken an Amerindian wife) and furnished with extra information (see also Boomert 2002). As such, we read that "King Peter the Indian Chief with about 14 or 16 People lives hereabouts", "The Indian King Cardinal with his Wives and about 80 People live on a hill hereabouts" and "The Indian King Rouselle with his Wives and People about 30 in Number lives here". In addition, there are three mentions of "Indians". Five years later, King Cardinal was dropped from an updated map, as was the additional information with which the two other Kings had been furnished. They are now simply referred to as "King Peter's People 16" and "King Roussel's People". The Indian Town referred to before now reverts to the simple "Indians" gloss, joining the three other "Indians" references. By the time Bowen published his 1779 map of Tobago in London's Gentleman's Magazine, King Peter had apparently disappeared from the scene, and only three mentions of "Indians" were made. This gradual erasing of Amerindian presence from the maps is perhaps reflective of the increasingly marginal Amerindian presence on Tobago as a result of European encroachment.

Bellin's St. Lucia maps of 1758/1763 are the first to record the location of a Carib settlement, in the form of a gloss "Carbet de Caraibes" midway along the eastern coast just south of present-day Anse Louvet (see also figure 1). It is perhaps no coincidence that the site is located beside Anse Mabouya (*mabouya* is the term repeatedly recorded by French missionaries among the Amerindians of the Lesser Antilles for the devil or an evil spirit) as on the map.

Jefferys' 1775 map of St. Lucia (see also Hofman and Bright 2004: Map 2) upholds this identification, now glossed as "Caribs" and embellished with a cluster of three triangles (the standard cartographic convention for an Amerindian settlement at this time). Lefort de Latour's survey map of 1787 makes no mention of Carib anymore, not at this location or anywhere else on the island, and is probably more reliable than the later Fielding map of 1823 which repeats the presence of "Caribs", but is likely an uninformed copy of an earlier map, perhaps that of Jefferys.

A number of precise indications of Amerindian settlements are provided for Martinique too. A 1657 map of Martinique by Visscher depicts numerous Carib localities, most notably one near present-day Anse Figuier along the southern coast (glossed as *Carbet de Capitaine Pilote*), another near present-day Le Vauclin along the southeastern coast (glossed as *Carbet, lieu ou les Caraibes font leur* [sic] *assembleés*) and a settlement referred to as *Case de Caerman* (a Carib chief) near present-day Ste-Marie along the north-east coast. There are a further three mentions of *Carbet de Caraibes*, one along the south-east coast near present-day Malevaut, and two more halfway up the eastern coast at the start of and along the first part of the peninsula now called Presqu'île de la Caravelle. Sanson's map



Figure 1 Bellin's Carte de l'Isle de Sainte Lucie 1758 and close-up of Carbet Caraibes.

(Bodington 2005), published just a year later than Visscher's, includes far fewer indications of Amerindian presence: only *Carbet du Capitaine Pilote* and *Carbet, lieu ou les Caraibes font leur* [sic] *assembleés* are retained. A 1665 map by Blondel depicts only the latter Carib locality (Verrand 2001: figure 1). Interestingly enough, a 1705 map by Nicholas de Fer depicts a new Carib locality, an assembly of houses glossed as *Carbet de Sauvages Macabou* (Huyghues-Belrose 2008:7).

Indirect cartographic evidence

Concerning visualized trading encounters, the maps accompanying Nicolas de Cardona's account *Geographic and hydrographic descriptions of many Northern and Southern lands and seas in the Indies, specifically of the discovery of the kingdom of California* (1974) are fine examples. Of particular interest with respect to Island Carib are the maps of Grenada, St. Vincent, St. Lucia and Guadeloupe, which depict stretches of coastline and trading



Figure 2 Map of Guadeloupe (Champlain 1859:between pages 6 and 7).

encounters with Amerindians that took place there, often in the form of one or several Amerindian canoes coming out to meet the Spanish ships. Thanks to the compass orientation, these encounters can be pinpointed to the northern coasts of Grenada, St. Lucia and St. Vincent, and the western coast of either Basse-Terre or Grande-Terre. A more intensive examination of the coastline features (bays, headlands and river mouths) may allow a more precise topological determination.

The map of Guadeloupe included in Samuel Champlain's *Narrative of a voyage to the West Indies and Mexico in the years 1599-1602 (1859)* depicts a troupe of naked Amerindians armed with bow-and-arrow and spears in the west, as well as three Amerindian barn-like longhouse structures in the northern part of the island (see Figure 2). The map actually lists a "pot de nacou" (cf. Macou mentioned above), as well as Europeans disembarking along what appears to be the east coast of Basse-Terre.

Ligon's 1657 map of Barbados is a last example of an interesting yet somewhat enigmatic Amerindian cartographic presence. Upon a detailed map (presumably containing accurate information on slave chasing, family estates and local animals), we find a depiction of an Amerindian with a tall bow and a canoe, glossed as "Salymingoe his Canowe 35 foot longe" (see also Handler 1977:191-193).

General areas demarcated as Amerindian

An example of indeterminate cartographic information on Carib settlement of islands is the mapping of Martinique throughout the latter half of the seventeenth century. Starting with Visscher's 1657 map, and continuing with Sanson's 1658 map, Van Keulen's 1684 map

and Norwood's 1690 map, the entire eastern half of the island is designated "Cabesterre, ou demeure des Sauvages". However, by 1660, the designation would actually have been outdated, as the Carib had begun to vacate the island during the mid 1650s as a result of wars against the French, and were largely removed from the island following the signing of a treaty with the French and English in 1659 that allegedly secured for them eternal possession of St. Vincent and Dominica (Boucher 1992:50-52). The St. Vincent map by Bryan Edwards features the gloss "Land granted to the Charibs in 1773" across the northern part. This concurs with article IV of the 1773 Treaty between the English and the Carib: "A portion of the lands hereafter mentioned, shall be allotted for the residence of the Caribs, from the River Byera to point Espagnole on the one side, and from the River Auilabou to Espagnole on the other side" (Shepard 1971:31). Jefferys' 1773 map of St. Vincent reveals the glosses "Caribs of Warrawarou Valley" and "Caribs of Cubaimarou and Ribishi" as well as showing the "Caribs Boundary" and labelling land north of the boundary "Caribs Lands". Byres' 1776 map of St. Vincent shows plots of land sold to "Charibbs" in Warrawarrou Valley, Ribishi and Cubaimarou, and in the eastern, western and central parts of St. Vincent above the line demarcating the 1773 Treaty boundary (Byres 1777:vii). Furthermore, it shows a plot of land just above the Treaty line on the west coast sold by the Carib to Colonel Etherington in 1775 (Byres 1777:vii). Lucas Fielding's 1823 map is of course much less detailed, though it retains the Treaty boundary line and bears the designation "Indians of Cubaimarou and Ribishi" in the south-east quadrant of the island.

Toponymy

The recording of Amerindian toponymy and hydronomy commenced as early as Columbus, was elaborated by Breton in his dictionnaire, and finally analysed by Taylor (1956, 1958; site level, St. Vincent and Dominica), Huyghues-Belrose (2009; site level, Martinique) L'Étang (2004; island level, Caribbean) and Boomert (2001; island level, Tobago) in particular. Special note should be made of the work by Granberry and Vescelius (2004), who analysed various Taíno toponyms, partly for clues as to directionality and order of settlement of the Bahamas archipelago. In addition, Allaire (1977:88) has suggested for Martinique that the toponyms Paquemar, Macabou, Simon, François and Vauclin all refer to (the residences of) Amerindian chiefs. The same could be said for Ile de Caerman and Anse d'Arlet (Martinique). On St. Lucia an obvious contender for a toponym with links to Amerindians is Pointe Caraibe or Caraibe Point, in the south-west corner of the island. The significance of the placename Anse Mabouya has already been mentioned in the discussion of the Bellin and Jefferys maps. Bellin's 1758 map of Grenada lists several toponyms that may recall Amerindian presence: Ance des Galibis, Ance des Maringoins (cf. a similar placename in French Guiana but more likely a generic term that refers to the presence of mosquitoes) and Ance Caouenne (corruption of Caïrouane) (Petitjean Roget 1975:64), Ance du Quesne (Petitjean Roget 1975:65) and Ance d'Antoine / Islet d'Antoine (Petitjean Roget 1975:21), all Carib chiefs mentioned in the ethnohistorical record. The capital city of Barbados, Bridgetown, was originally called Indian Bridge, presumably after an Amerindian structure in the vicinity (Challenger et al. 1999). The toponyms Indian Mound and Indian River (also on Dominica) presumably have a similar bearing on the original island inhabitants.

Concluding remarks

Considering that we are dealing with late pre-Colonial / early Colonial period remains, there is every chance that archaeological recovery of Carib finds could be problematic. The shallow depth of the remains below the surface, the potential for disturbance by Colonial and modern day activities such as ploughing and construction as well as (coastal) erosion or lack of soil development would all conspire to make retrieval of these remains more difficult than older, deeper remains. However, recent rescue excavations carried out by teams from Leiden University at the site of Argyle on St. Vincent (Hoogland et al. in prep; Van den Biggelaar and Boomert 2010) have yielded Cayo ceramics, European Colonial ceramics and glass beads in the context of a settlement with posthole features that can be reconstructed into numerous Amerindian house plans. As such, ongoing excavation at this site that was first excavated by Allaire in the early 1990s (Allaire 1994; Allaire and Duval 1995) underlines the great potential of an Island/Black Carib archaeology and hints at many more fascinating discoveries that can be made by sound (ethno)historical research into this period coupled with opportune excavation. Reviewing the late pre-Colonial and Colonial period data, it is clear that there is enough potential to establish a new line of enquiry into Lesser Antillean Carib society informed, though not conditioned by, direct and indirect lines of evidence drawn from Colonial period ethnohistory, cartography and toponymy.

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AN ETHNOHISTORICAL APPROACH OF THE CARIB THROUGH WRITTEN SOURCES The example of the *Relation* by Jacques Bouton

Bernard Grunberg

Jacques Bouton, the first religious chronicler of Martinique (1640), gives an interesting description of the island and its inhabitants. Although it is primarily a work of 'propaganda' designed to assist and promote the colonization of the island, the fact remains that in the last two chapters of his book, the author offers a brief description of the Carib, which will very often be referred to in the vast literature on the indigenous population. We inted to find out how this text was written and what information we can draw from it for our knowledge of the Carib of Martinique.

Primer cronista religioso de Martinica (1640), Jacques Bouton da una interesante descripción de la isla y sus habitantes. Aunque se trata sobre todo de una obra de 'propaganda', destinada a ayudar y a promover la colonización de la isla, eso no impide que en los dos últimos capítulos de su crónica, el autor nos entrega una descripción sucinta de los Caribes, que muy a menudo servirá de referencia a numerosos escritos respeto a esta población indígena. Intentaremos conocer cómo este texto fue escrito y cuáles son las informaciones que podemos sacar para nuestro conocimiento de los Caribes de Martinica.

Premier chroniqueur religieux de la Martinique (1640), Jacques Bouton donne une description intéressante de l'île et de ses habitants. S'il s'agit surtout d'une oeuvre de 'propagande', destinée à aider et promouvoir la colonisation de l'île, il n'en reste pas moins que dans les deux derniers chapitres de son ouvrage, l'auteur nous livre une description succincte des Caraïbes, qui servira très souvent de référence à de nombreux écrits sur cette population indigène. Nous chercherons à savoir comment ce texte a été écrit et quelles sont les informations que nous pouvons en tirer pour notre connaissance des Caraïbes de Martinique.

Introduction

West Indian research, and particularly the study of Amerindians, still suffers from difficult access to the printed or manuscript sources, including those in French, concerning the Lesser Antilles dating from the late fifteenth century to the seventeenth century (c.1493-c.1690). Obviously, we are not concerned by the writings of J.B. Labat or J.B. Du Tertre, but by chronicles, letters and travel accounts published once, often in only a few copies, or unpublished. These documents are essential in order to understand the society of the islands in the seventeenth century, and particularly the indigenous peoples, who would virtually disappear under French rule in the Lesser Antilles in under a century. It is in this context that the program *Edition d'un corpus complet de sources rares ou inédites sur les Petites Antilles (1493-1660)* was born, funded by the National Research Agency (ANR) and directed by Professor B. Grunberg at the University of Reims. Disciplinary diversity being now well placed in historical and scientific studies, it seemed clear to us that to simply restrict ourselves to documentary sources, would be to deprive ourselves of a whole range of West Indian research currently underway: Caribbean archeology.¹

The originality and purpose of this program is to provide for the first time a comprehensive body of sources, rare and unpublished, on the Lesser Antilles in the late fifteenth to the mid-seventeenth century, particularly in the area of the islands which would be under French control in the seventeenth century and to facilitate the study of Amerindian populations of this region: 'the Caribbean Islands'. The body's aim is to provide a reference tool and to simplify access to the sources, the wide dissemination of these documents to be presented scientifically, including translations of Latin, Spanish, Italian and English texts, biographies of authors, critical tools to clarify the content of texts, etc.

The highest strictness became a primary requirement for the study of the sources selected for the development of the corpus. If it seemed really necessary to publish or republish material from the corpus, it had to have been consulted first. It was therefore necessary to ascertain the exact location of the originals (or copies) to verify the transcripts included in previous editions, to examine the nature of the document for manuscript works (original document written by the hand of a columnist, or contemporary copy of the original work or later). Once this work was completed, several cases emerged. Either the document was unpublished, in which case it was necessary to make a copy and transcribe it, or the document which had already been published showed errors and it was necessary to restore the text's integrity, or the document had already been published in its original version and it was enough to transcribe. Overall, the first two cases are the most common ones. Currently, a large part of critical publishing has been produced and all will be delivered to the public in early 2012.

In addition to these documentary sources, we must take stock of West Indian archeology. From bringing these documentary and archaeological sources to light follows a dual comparative and complementary approach. As far as the archaeological sources are concerned, the most relevant approach is to synthesize current knowledge in this field: the migration patterns of the Caribbean Islands and the study of the characteristics of Caribbean material culture. However, it should be emphasized that these indigenous people of the

¹ The main associates of this program are: Corinne L. Hofman (Leiden University), André Delpuech (Musée du Quai Branly) and Benoît Bérard (Université des Antilles et de la Guyane).

Lesser Antilles are not at all in the seventeenth century what they were in the fifteenth century, during their encounter with the Europeans (De la Borde 1674).

This program goes far beyond the simple framework of filing data. If this is indeed about publishing one or more books with a scientific edition of texts and providing an overview as complete as possible of the archaeological findings.

The chronicles of Jacques Bouton (1640)

In 1635, Pierre Belain d'Esnambuc left with hundreds of settlers from St. Kitts to colonize Martinique. He was accompanied by a monk, Father Hyacinth, who went with him in order to celebrate the religious ceremony marking the takeover of the island, shortly after which the monk returned to St. Kitts (Rennard 1954:39). Not having any religious figure² in Martinique, in late 1636 directors of the Company of the Islands of America, who ran the islands and monopolized the trade, decided to send Capuchins, but these are long awaited (Rennard 1954:40). For Rennard, this Order, which encountered some difficulties, including a first failure in Guadeloupe, was reluctant to take on Martinique.³ Before 1640, this island did not have any permanent religious authority and the 'divine service' was provided by a few secular priests.⁴ Once it became clear that the Capuchins were not coming, the Company, including François Fouquet, one of the leading members, called upon the Jesuits in 1638 for help, who then accepted.⁵ On November 25, 1639, Bouton, Le Clerc and Hampteau embarked at Nantes for America.⁶

Jacques Bouton, born in Nantes June 19, 1590, in a wealthy family (his father was a merchant), entered the novitiate of Rouen in 1610 and studied philosophy and theology at Louis le Grand (Paris). After graduating, he carried out his profession of the four vows at La Flèche (1628)⁷ and became professor at Rouen, Bourges, Rennes, Paris and the College of La Flèche (Sarthe). Though being ill, he was appointed principal of La Flèche board-ing school (1635-1636), before directing the college of Rennes (1636-1639). He left for Martinique in 1639 to set up a mission there. He went back to France after a few months to get more money and then wrote his *Relation*. On orders from his superiors, he returned to Martinique in 1642 to definitively establish the Jesuit mission, but falling sick, he was obliged to leave the island. He returned to teach at La Fleche (1643-45), at Quimper

² The Dominican Pierre Pélican Superior of the Mission of the Indies, made a layover in Martinique in June 1635, before leaving for Guadeloupe (Camus 1982:**9**).

³ After the arrival of the Jesuits, Capuchins asked to settle in the island. In 1642, the Propaganda would reply granting their request but Jesuits would keep their parishes and Capuchins would be able to create new ones, because of the increasing population (Rennard 1954:44).

⁴ They went to Martinique at their own expense, but were not paid by the Company. They received a small fee there from those who made them come (Rennard 1954:40).

⁵ The Company asked for three religious people to whom it would grant two or three servants and 600 'livres tournois' to settle on the island, (Rennard 1954:41). Petitjean Roget (1980:797): "La Martinique doit l'installation des Jésuites à la protection toute spéciale du président Foucquet, l'un des directeurs. Le père Pelleprat en témoignage de gratitude dédiera sa Relation de 1655 au fils de ce dernier, le Surintendant Nicolas Foucquet". Pelleprat wrote in his epistle : "Il n'a pas seulement été l'auteur du dessein qu'on prit d'envoyer des pères de notre Compagnie dans les îles mais il en a toujours si puissamment protégé les Missions que si elles lui doivent leur commencement, elles ne lui sont pas moins obligées de leur conservation " (cf. Pelleprat 2009 [1655] :53). Du Tertre (1978 :134) claims that preference was given by "Président Foucquet qui aimait la Compagnie des RP Jésuites' in spite of letters of du Parquet who 'demanda des Religieux de notre ordre ou des RP Capucins".

⁶ Bouton does not give the date of departure, he only writes "le vendredi vingt-cinquième de novembre, jour de Sainte Catherine" (Bouton1640:1). This Friday corresponds only to the year 1639.

⁷ The Jesuits add to the three vows of poverty, chastity and obedience, that of obedience to the Pope.

(1645-48) and then at Bourges (1648-51) before returning to La Flèche where he died November 17, 1658.

We seek to illustrate and to understand what Bouton's mission in Martinique was about and how he described this island dealing with all the qualities conducive to a colonial settlement. Then we will show how Bouton perceived the natives: a perception which was a source for many writers, even a model of stereotypical views of the Carib.

Bouton's mission

A long and perilous journey

Leaving Nantes November 25, 1639, the Jesuits' ship endured "more than five weeks" of storm and bad weather, and had to take refuge in a port in Devon.⁸ The Missionaries remained in England for six weeks (from January 6 to February 20) before going to America; they crossed the Canaries then the Cape Verde Islands before arriving in Barbados on April 2, where they learned that the Carib had attacked Guadeloupe.⁹ It would take them four days to reach their destination.

The arrival in Martinique

The Jesuits arrived in Martinique on April 6. The Company had already issued orders for them to be properly welcomed and well accommodated (Rennard 1954:III 41-42). Du Parquet, the governor of the island, welcomed them "very courteously". As the Missionaries, according to Bouton (1640:I 84), did not want to stay at his home for fear of bothering him, they were lodged by Du Parquet in his chaplain's hut, awaiting construction of their homes. But, according to Du Tertre, the "governor who had not requested them found himself at first very reluctant to receive them".¹⁰ Bouton himself noted that he had gone "to lead many well-armed men turtle fishing... [and to] establish the guard for the safety of fishermen, and to learn if war would break out against the Savages".¹¹ With the fishing being done and the news reassuring, at the end of April the governor went to the place where he had decided to settle the Jesuits. After clearing the land, near Fort St. Pierre, their house was built of wood and May 13, the Jesuits could move in and "start [their] duties, to the glory of God".¹² But it seems that the settlers looked poorly upon the arrival of the Jesuits whom in their eyes, had been sent by the Company (Du Tertre 1984:I 134).

Indeed, the settlers, who accused the Company of the Islands of America of not sending them the necessities to sustain life on the island, turned their resentment against the Jesuits going as far as wanting to deport them. Given the turmoil that rocked Martinique, Philippe Longvilliers de Poincy, d'Esnambuc's successor, lieutenant general of the islands, announced the deployment of a commissioner if the governor and the inhabitants did not

^{8 &}quot;Dieu ne nous voulait pas si peu de bien, il nous fit enfin trouver l'entrée du havre de Habledol, qui va jusqu'à deux petites villes nommées Bédifort, et Barnstaple" (Bouton 1640:I 8). From this point on all references to Bouton's text will be given by the chapter number, followed by the pagination of the original text of 1640.

^{9 &}quot;L'irruption des Sauvages dans la Guadeloupe" (Bouton 1640:I 23).

^{10 &}quot;Gouverneur qui ne les avait pas demandés se trouva d'abord fort peu disposé à les recevoir" (Du Tertre 1978: I 134).

^{11 &}quot;Mener nombre d'hommes bien armés à la pêche de la tortue [... et] établir des corps de garde pour la sûreté des pêcheurs, et apprendre si on aurait guerre contre les Sauvages"(Bouton I 25).

^{12 &}quot;Commencer [leurs] fonctions, à la gloire de Dieu" (Bouton 1640:1 26-27).

follow orders. The people rebelled and decided to secede. The commissioner arrived just days after, carrying a letter asking Bouton to restore order and assist the commissioner. Bouton found a compromise, and the inhabitants entrusted him with the task of presenting their needs (David 1984:30-33) before the directors of the Company. This was confirmed by Du Tertre, which emphasizes that Bouton, who was "a worthy man and an excellent preacher, touched them with his preaching and made them change their minds".¹³

Bouton left his colleagues Hampteau and Le Clerc to look after the Jesuit mission and left probably in July. He went on to visit Dominica¹⁴, Guadeloupe (Bouton 1640:IV 57, VI 84) and perhaps St. Kitts (David 1984:32). Arriving in Paris, he wrote, September 17, 1640, to the general of his Order and began to write the *Relation*, to be published before the end of the year, as reflected in the *Permission* by Jacques Dinet, Provincial Society of Jesus, dated October 6, 1640 (Bouton 1640:V).

Bouton's report on his mission

Upon his return, Bouton sought ways to ensure the life of the Jesuit mission in Martinique, especially by trying to send other Jesuits there. Jacques Dinet authorized the departure of just one Jesuit, Louis Conard, who left late in 1640 for Martinique. On January 2, 1641, he presented a report to Fouquet that required the directors to order Du Parquet to expand their houses of the Missionaries. On February 6, 1641, the Directors of the Company wrote to the governor to see "if the house of the Jesuit Fathers could be easily extended"¹⁵ and if not, where to find another one. Furthermore, the Company provided them with six attendants, who were exempted from other duties and Du Parquet shall "if he brings Negroes to the island to sell and that the Jesuits are asking for some" they can be "lent a couple".¹⁶ In July 1641, the Company sent 200 livres tournois for Father Hampteau to Martinique. The Jesuit provincial was not very prone to sending Missionaries to the islands. It is only at the end of 1641 that he authorized a couple of Jesuits to leave, Father Conard and Brother Burel. Bouton stayed in France, probably thinking that he had to continue trying to have more religious people in order to maintain the Mission in Martinique. In September 1642, the directors gave him 500 livres tournois "to build and furnish their homes" and give free passage to the missionaries and their servants and a certain sum to provide for their needs once there.¹⁷ Bouton found two new fathers, Du Market and Larcanier, who embarked with him in early November 1642.

Having just returned to France, Bouton publishes his *Relation*¹⁸, written for the *Messieurs de la Compagnie des îles de l'Amérique*. He expresses in his preface that he had, as had been expected, given assistance to the settlers' salvation. When he decided to publish

^{13 &}quot;Homme de mérite et excellent prédicateur" (Du Tertre 1978:I 134).

^{14 &}quot;Comme nous passions à notre retour par la Dominique, un sauvage vint vers nous jusqu'à mi chemin, mais si tôt qu'il aperçut notre petit bateau qui était derrière le vaisseau, il s'en retourna bien vite" (Bouton 1640:IX 116).

^{15 &}quot;Si l'habitation des Pères Jésuites se peut accroître facilement" (David 1984:32).

^{16 &}quot;S'il amène des nègres à vendre dans l'île et que les pères jésuites en demandent quelques uns [leur en] bailler un couple" (David 1984:32).

¹⁷ The Jesuits obtained a loan of "400 francs de selon la valeur du pays et 200 francs en argent pour leurs nécessités"; servants were granted aboard "jusqu'à ce que l'on leur ai baillé des nègres, qui sera lorsqu'il en viendra en l'île". A total of eight servants of the main residence didn't have to pay the so-called taxe (*capitation*), and only four of them of the other house. Finally the directors specified that if there were still priests on the island they should rely upon the Jesuits (David 1984:32).

^{18 &}quot;Donner au public ce petit narré" (Bouton 1640:II).

the *Relation*, it was with the intention of disabusing "those who [could not] believe that there [was] so much good on [the] island, that [their] care and devotion [had] provided, and so much hope that it [could] later grow, God willing, with the same means given at the beginning".¹⁹ It also attempted to enlighten the "ignorant" who did not know what was really happening on the islands (III). Of course, it was also about praising the members of the Company of the Islands of America by noting what they had already "done in the past", and by silencing the criticism of those who "criticize them for not getting what they wanted", accusing them of being, by their own mistakes, the source of disorders in these lands.²⁰ While Bouton is lucid, he was able to witness the destitution of the settlers, to whom he felt partly connected, and he was not afraid to express the following criticism, albeit very courteously: "if I highlighted a few flaws and necessities as things of this world which are not all perfect in their beginning, it is only to show how much responsibility you gain for the inhabitants of these islands, continuing to employ such care and such expenditure to put them at ease".²¹ Finally, he publishes the *Relation* in order to encourage departures because, has he said, "it is also important that those who want to go there, learn that they can reasonably promise themselves what they can legitimately desire for their spiritual and temporal benefit".²²

Bouton had clearly read a lot of works on the New World. We know he knew the writings of the Canadian Jesuit missionaries, including those of Marc Lescarbot, Jérôme Lalemant and Paul Le Jeune.²³ Bouton's *Relation* probably refers to these stories by talking about birds²⁴, the burial grounds of the Carib²⁵ and about the island canoes that differed markedly from those of the Canadians²⁶. But especially Bouton sees the Carib to be less cruel than the Indians of Canada, probably because the latter had killed many of his religious brothers.²⁷

It is clear that during the few weeks he remained in Martinique (less than three months), Bouton, despite his great intelligence, did not have time to note down all the elements that make up the *Relation*. He had to use either tales or, and most likely, the writings that were at his disposal. However, the author of the *Relation de l'établissement des Français* does not

^{19 &}quot;Ceux qui ne peuvent croire qu'il y ait maintenant tant de bien en cette île, que vos soins et votre piété y en ont procuré, et tant d'espérance qu'il croisse à l'avenir au point qu'il croîtra, Dieu aidant, par les mêmes moyens qui lui ont donné commencement" (Bouton 1640:II).

^{20 &}quot;Fait par le passé [...] décrient pour n'y avoir pas trouvé leur compte" (Bouton 1640:III).

^{21 &}quot;Que si j'ai marqué quelques défauts et nécessités, comme les choses de ce monde n'ont pas toute leur perfection dans leur commencement, c'est pour faire voir combien vous acquerrez d'obligations sur les habitants de ces îles, continuant d'employer tant de soins, et faire tant de dépenses pour les mettre à leur aise" (Bouton 1640:III).

^{22 &}quot;Est aussi important que ceux qui y veulent aller apprennent qu'ils peuvent avec raison se promettre ce qu'ils peuvent légitimement désirer pour leur profit et spirituel et temporel" (Bouton 1640:III-IV).

²³ Lescarbot (1609) but as far as Jérôme Lalemant and Paul Le Jeune are concerned cf. Lalemant and Le Jeune (1896-1901).

^{24 &}quot;Puisque nous avons parlé des oiseaux, je veux marquer icI, que nous n'en avons ouï aucun qui mérite d'être pris pour son chant, et qu'il y a aussi en ce pays comme au Canada, certains petits oisillons d'un très beau plumage, qui vivent de fleurs aussi bien que les abeilles: nous les appelons colibris" (Bouton 1640 :V 73).

^{25 &}quot;De religion on n'en reconnaît aucune parmi eux. Ils ont quelque connaissance de l'immortalité de l'âme, d'autant qu'ils donnent aux âmes des défunts, comme les Canadiens, des hardes, des vivres pendant quelques jours, et des meubles pour les servir" (Bouton 1640:IX 106)

^{26 &}quot;Outre ces canots, faits d'une pièce de bois, et non pas de l'écorce d'un arbre comme ceux des Canadiens, ils ont des pirogues, fait[e]s de deux ou trois pièces; [elles] sont plus grand[e]s que les canots, et y en a qui portent quarante et cinquante hommes" (Bouton 1640:X 127).

^{27 &}quot;Ils tuent et mangent leurs captifs avec mille cérémonies, et cruautés, non pas toutefois si grandes que celles des Canadiens" (Bouton 1640:X 127).

give us any information. We know nothing of the sources that Bouton was able to consult, or of the informants who could have given him information.

A manuscript of the book written by Bouton is not known but it can be reasonably guessed that he wrote it himself. He needed only to refer to the style of his readings, with references to his visits. The book contains eleven chapters, which can be divided into four groups: a story of the journey (Ch.1), the geographical description and natural history of "French Martinique" (Ch. 2 and 3) the advantages and disadvantages of colonizing an island (Ch. 4, 5, 6, 7, 11) and the description of the island's populations (Ch. 8, 9, 10).

The composition of the book shows that this is primarily a work of propaganda on behalf of the Company of the Islands of America, of whom Bouton was the "servant". The four chapters detailing the overwhelming positives far outweigh the single chapter on the drawbacks. The fact remains that the description, fast indeed, of the "Wild Caribs" is the first real printed narrative we have on the indigenous inhabitants of Martinique (Anonymous of Carpentras 1994).

Bouton's return to Martinique

In November 1642, Fathers Bouton, Charles du Marché and Robert Larcanier went overseas to join Fathers Hampteau and Conard in Martinique. From that moment on, the island had six Jesuits, according to the wish of the Company. While we do not know exactly what Bouton was doing on the island, it is certain that he did all that was necessary for a lasting settlement of the mission.

But, tired and sick, and being perhaps no longer necessary, Bouton probably became a problem for his companions, who deemed it wise to return him to mainland France. It is towards mid-October in 1643 that Bouton embarks, probably with Fathers Conard and Du Marché, leaving the mission to trustworthy men who will not only maintain it but also increase it despite the settlement of new religious people, the Dominicans and the Capuchins (Rennard 1954:43).

An island in favour of colonial settlement

The assets of Martinique

First of all, the weather: the island has no winter (II, 29)²⁸ and the vegetation is evergreen (II, 29). The second asset is the importance of its rivers (II, 31) and the presence of a good port for ships to Fort Royal (II, 31).

Bouton, who read letters from his colleagues in Canada, shows that the island may in large part allow the development of a colony due to the strong support of agriculture. The Jesuit noted the importance of local products, cassava (IV, 52-54), native edible plants such as palm, Caribbean cabbage, etc. (IV, 47-48) and exotic fruits (V, 61-63). He also insists on the presence of many herbs (IV, 45). But for him the most important aspect is that European plants such as peas and beans, easily acclimatize to the West Indies (IV, 49) while citrus fruits can be grown successfully (V, 58-59). The colonists or future settlers should, in his view, have no concerns for their food supply. And as if that was not enough, he adds that the island has varied game (V, 71-77) and a sea of fish (V, 77-78). Martinique is thus a land of plenty, a paradise.

²⁸ Chapter number, followed by the pagination of the original text of 1640.

Bouton also considers the products grown on the island for export, designed to enrich the Company: tobacco (VI, 80), cotton (VI, 81) and sugar (VI, 82-83). To this trio, he can add anatto and sulfur (VI, 83-84). He does not forget, however, because he heard complaints from settlers that there was a lack of manufactured goods on the island, including fabrics, traditional utensils and other objects of daily life which should therefore be imported some to satisfy the needs of the inhabitants of Martinique (VI, 86-87), especially as the population was sorely lacking artisans (II, 32).

The barriers to the settlement

Bouton identified three "inconveniences" that may cause problems for settlers. First, there are fevers: "It is wonderful if someone escapes, from those who have arrived on the islands, who had four or five attacks of fever, even more, that he is bled on arrival".²⁹ They had to therefore rely on active, powerful men and Bouton prescribed the remedy: "easy to overcome his illness while walking and working, and not to be broken down"30 adding that "those who stand idle, who only sleep during the day or give in to sadness, do not live long on this island: the leg ulcers that are difficult to cure, stomach pains and other ailments welcome them and soon spread. Here we must escape the melancholy, and walk briskly to work, keep clear, and wash often, for this purpose the servants in the afternoon on Saturday are free to bathe and wash their clothes and other clothes: if they do not wash or keep clean and work, they immediately become sickly, that is to say cowardly, sick, and useless".³¹ Our Jesuit also noted the presence of an evil, which was known to be endemic in Amerindian populations, the yaws, which according to Bouton (VII, 90) struck particularly black people and very rarely the French. The description continues with the description of "chiques, which form in the dust [and which] are too small to be seen"32 which get stuck mainly in the feet and have to be removed under penalty of ulceration, either with a pin, or putting them in seawater, or by using green pétun (VII, 92).

The author of the *Relation*, talking about what is feared the most and which is a real drag for settlers³³, however, only devotes a few lines to the "great snakes, or rather vipers, because they have all the properties of our own which have a deadly bite, if nothing is done quickly".³⁴ He notes that there are not as many as they say and specifies that these snakes do not attack people who do not touch them, and most of them retreat to the most remote places in the woods.³⁵

^{29 &}quot;C'est merveille si quelqu'un échappe, de ceux qui arrivent de nouveau aux îles, qu'il n'ait quatre ou cinq accès de fièvre, encore même, qu'il se soit fait purger et saigner à l'arrivée" (Bouton 1640:VII 89).

^{30 &}quot;Facile qui est de corrompre son mal en marchant et travaillant, et ne se laisser abattre" (Bouton 1640:VII 89)

^{31 &}quot;Les personnes qui se tiennent oisives, qui ne font que dormir le jour, ou qui s'abandonnent à la tristesse, ne sont pas pour vivre longuement en cette île: les ulcères aux jambes qui sont assez difficiles à guérir, les maux d'estomac, et autres incommodités les accueillent, et dépêche[n]t bientôt. Il faut ici fuir la mélancolie, marcher et travailler gaillardement, se tenir nettement, et se laver souvent; pour cet effet les serviteurs ont l'après-midi du samedi libre, pour se baigner, et laver leurs linges et autres hardes. S'ils ne se lavent, et tiennent proprement, et travaillent, ils deviennent incontinent malingres, c'est à dire lâches, malades, et inutiles" (Bouton 1640:VII 89).

^{32 &}quot;Chiques, qui se forment dans la poussière [et qui] sont si petites qu'on ne les aperçoit" (Bouton 1640 VII:91).

^{33 &}quot;Ce qui a le plus décrié l'île, et empêché deux mille personnes d'y venir" (Bouton 1640:VII 92-93).

^{34 &}quot;Grandes couleuvres, ou plutôt vipères, car elles ont toutes les propriétés des nôtres, qui ont une morsure mortelle, si on n'y remédie promptement" (Bouton 1640:VII 93).

^{35 &}quot;N'attaquent pas les hommes qui ne les touchent point, et se retirent la plupart aux lieux plus écartés dans les bois" (Bouton 1640:VII 93).

The third set back for Martinique were the attacks of the Savages, who could threaten and attack the French at any time by running multiple surprise attacks. Bouton, like his fellows, was unfamiliar with the origins of the war with the Carib, which was so different from those waged by the French. For the Jesuit, the Carib were "faithless" and "traitors" (VII, 94-95), and they knew perfectly well how to use the island to hide and surprise those who are not on their guard.

To complete the brief sketch of the "inconveniences" of Martinique, Bouton remarks that attention must be given to the presence of hostile fleets (English, Dutch or Spanish), which in his time used to pass near the island, or even "to make a stopover for watering". He concludes that this was not a great danger because "neither Savages nor foreigners will have any advantage over the French, while the latter are on their guard just as they are".³⁶

The need to establish a mission

As we have seen, there were many more advantages than disadvantages to colonizing the island and, more importantly, establishing a mission there. Bouton justified the right of the French to truly settle in Martinique, emphasizing that they were the first. With the arrival of Bouton (III, 35), a thousand Frenchmen were already settled there. Bouton noticed, however, that they were poor (II, 32), and lived like the Carib in "huts" and "hammocks" (II, 32, III, 42). One can feel a clear condemnation of the lifestyle of the settlers here. He considers that the French are "almost abandoned by any spiritual help without Mass, without priest, without preaching, without sacrament" and thus they were living "in too much freedom and impunity"³⁷. There were three priests on the island but there were not enough of them to cover all the areas occupied by the settlers (VIII, 96-97). Our Jesuit was quick to point out that "God knows if these good Clerics have had a lot of authority and if their efforts there came to fruit"; while he noticed that there were also some "heretics, as well as libertines and Atheists, stupid and brutal minds", but this should not place an unfavourable light on the French, who, he says, "are not so vicious and so bad as they were made out to be in France".³⁸ The only church built was not enough, and it was up to the author of the *Relation* to build three more churches for the spiritual welfare of the inhabitants (VIII, 98). This was probably the work of the Jesuits, an essential task because Bouton explains that "our compatriots who, without the necessary culture would become barbarians and wild in these woods".39

If the settlers had to be protected, it was just as necessary to evangelize the black people in Cape Verde and other African slaves (XI, 133-134), called "Moors", who "for the most part [had] rude and stupid minds, not knowing how to read nor write, and it [was] believed that it [was] almost impossible to teach them. Nevertheless they laugh and mock,

^{36 &}quot;Ni les Sauvages, ni les étrangers n'auront aucun avantage sur les Français, tandis qu'ils seront sur leur garde comme ils sont" (Bouton 1640:VII 95).

^{37 &}quot;Presque abandonnés de tout secours spirituel, sans messe, sans prêtre, sans prédicateur, sans sacrement' et qu'ils vivent de ce fait 'dans une trop grande licence, liberté, et impunité" (Bouton 1640:VIII 96).

^{38 &}quot;Dieu sait si ces bons ecclésiastiques ont eu beaucoup d'autorité, et fait bien du fruit là où ils étaient [...] hérétiques, et quelques libertins et athées, esprits stupides et brutaux [...] ne sont pas si vicieux, et si mauvais qu'on les fait en France" (Bouton 1640:VIII 97).

^{39 &}quot;Nos compatriotes, qui sans la culture nécessaire deviendraient barbares, et sauvages dans ces bois et retraites de la barbarie et sauvagines" (Bouton 1640: XI 131-132).

and notice quite well that the things we do seem to be insolent".⁴⁰ The author tells us that while some are baptized, they remain "in an insufferable ignorance of the mysteries of our faith: that is why there are few who have been admitted to Holy Communion"⁴¹, especially since they do not generally understand French. Moreover, given their stupidity one has to proceed with caution and take time regarding Christianization even if some want to be baptized.⁴²

While the evangelization of black people was not an easy thing, what is happening among the Carib was much more difficult. Bouton admits that because of "their habits and ways of doing things", it would be very difficult to convert them (XI, 135). The Carib did not need the French who "say it is we who need them, as we came to their land, they were doing well without us and could very well continue to do so".⁴³ Bouton notices that some were however doing the sign of the cross and saying the names of Jesus and Mary (XI, 139) but he addes that this was to imitate the French. He wished, however, that they would be converted (XI, 140-141). The only solution recommended by our Jesuit was to "take some of their children away to teach them, and to use them all as hostages"⁴⁴, as did the Jesuits in New France.

Bouton and the Carib

In 1640, natives and settlers were living apart; the island was indeed split into two, one side inhabited by the French, the other by the natives (II, 30, III, 37). Bouton admits he knows little of these people because they live in their separated territories, areas characterized "by inaccessible hills", the French only saw them "rarely, and only when they come by sea to trade".⁴⁵ Bouton hoped that after a longer contact, the settlers would learn more about them. He could not assess them because they often went from island to island, highlighting the semi-nomadic character of this society (IX, 105). Like his predecessors, he was surprised to see their nakedness and the pulling out of their beards (IX, 108-109). He said they reddened their bodies with annatto, the women wearing a kind "of boots from the knee to the ankle", and the men and women having "necklaces made of beads, or crystal, or small, well-organized bones" and they put in their hair "feathers of macaws, flamingos and other birds [...] and attach a few nice things to it as was their fashion". Besides some Carib, including leaders, wore hats on their heads.⁴⁶

^{40 &}quot;L'esprit si grossier et hébété pour la plupart, qu'aucun ne sait ni lire ni écrire, et croit-on qu'il est presque impossible de leur apprendre. Ils sont néanmoins rieurs et moqueurs, et remarquent assez bien ce qu'on fait qui leur semble impertinent" (Bouton 1640:VIII 99-100).

^{41 &}quot;Dans une insupportable ignorance des mystères de notre foi: c'est pourquoi il y en a peu qui aienété admis à la sainte communion" (Bouton 1640:VIII 100).

^{42 &}quot;Procéder un peu lentement [...] bien prendre garde de rien précipiter" (Bouton 1640:XI 134-135).

^{43 &}quot;Disent que c'est nous qui avons besoin d'eux, puisque nous venons en leurs terres, qu'ils se sont bien passés de nous, et s'en passeront bien encore" (Bouton 1640:XI 135-136).

^{44 &}quot;Tirer d'eux quelques-uns de leurs enfants pour les instruire, et ensemble s'en servir pour otages"(Bouton 1640: XI 136-137).

^{45 &}quot;Par des mornes inaccessibles", que les Français les voient "rarement, et seulement lorsqu'ils viennent par mer pour traiter"(Bouton 1640:IX 106).

^{46 &}quot;De brodequins, depuis le genou jusqu'à la cheville du pied [qu'hommes et femmes ont] des colliers de rassade, ou de cristal, ou de petits os bien agencés [et qu'ils mettent dans leurs chevelures] des plumes d'aras, de flamants, et autres oiseaux [...] et y attachent quelques gentillesses à leur mode" (Bouton 1640 IX:109).

A nation without religion...

Like many Jesuits, Bouton believed the Carib to be a people without religion (IX, 105). The fact remains that in speaking about indigenous beliefs, he was able to note that they have some knowledge about the immortality of the soul (IX, 106) because they have burial customs akin those of the Canadians, "they give to the souls of dead [...] clothes, food for several days, and furniture but I believe they do not concern themselves to know what becomes of these souls".⁴⁷ But Bouton evokes the spirits, he mentions the "devil they call *Maboya*, [which] sometimes beat them to death" but they "do not worship him, that I know and do not offer him any sacrifices". Our Jesuit also speaks of a different spirit "they call *Chemin*, which does not treat them any better than *Maboya*" and of people who "privately converse with him, since they predict future events which they could only know from him". These are probably *Boyés* and one told Bouton in order to show their ability as "the day before we arrived, an old Indian woman told a Frenchman, *magnane* ship from France, which means tomorrow, a ship from France will come, which was true".⁴⁸

Bouton tells a Carib story indicating the existence in Dominica of "a snake, which is sometimes large, sometimes small, which has a carbuncle or a strong, shiny stone in its forehead which it removes when it wants to drink and then puts it back, and nobody can nor dares to go into its cave without fasting at least three days in advance, and abstaining from his wife, otherwise he would not see it, or would risk being defeated by it, that is to say being killed".⁴⁹ It is probably this belief, also reported by Breton (1978:214) himself who speaks of "a big snake they call *oloubera* which lives in a frightening cave".⁵⁰ These are the only elements that our Jesuit gives us. Not until the Sieur De La Borde we get more precise information (De la Borde 1674).

Bouton is more interested in the daily life of the Carib, their knowledge and their customs. He says that they can only count up to ten, but that sometimes they can go up to "twenty, or two times ten, showing their fingers and toes, and beyond that if they want to say more and express a larger number, they use sand".⁵¹ They can sometimes predict the weather and have a good knowledge of the stars (X, 122-123). The Carib language is for Bouton very "special" and "very difficult to learn" (XI, 130). He also tells us that they use, in order to communicate with the Europeans, "some gibberish mixed with French, Spanish, English and Flemish", which they've learned by trading with them. For Bouton this is a clear advantage because, he says, "in a short space of time, you can hear them and

^{47 &}quot;Ils donnent aux âmes des défunts, comme les Canadiens, des hardes, des vivres pendant quelques jours, et des meubles pour les servir mais de savoir ce que ces âmes deviennent, je crois qu'ils ne s'en mettent pas en peine" (Bouton 1640:IX 106).

^{48 &}quot;Diable qu'ils appellent Maboïa, [qui] les bat quelques fois jusqu'à la mort [...] rendent aucun honneur, que je sache, et ne lui font aucun sacrifice [...] qu'ils nomment Chemin, qui ne les traite pas mieux que Maboïa [...] une communication particulière avec lui, puisqu'ils prédisent les choses futures, qu'ils ne peuvent savoir que de lui [...] le jour d'avant que nous arrivassions, une vieille sauvagesse dit à un Français, magnane navire de France, c'est à dire, demain arrivera ici un navire de la France, ce qui fut vrai" (Bouton 1640:IX 106-108).

^{49 &}quot;Un serpent, qui se fait tantôt grand, tantôt petit, qui a au milieu du front une escarboucle, ou pierre fort luisante, laquelle il tire lorsqu'il veut boire, et puis la remet, que personne ne le peut, ou ose aller voir en sa caverne, s'il n'a au préalable jeûné trois jours, et s'est abstenu de sa femme, autrement il ne le verrait pas, ou serait en danger d'être maté par lui, c'est à dire tué" (Bouton 1640:IX 108).

^{50 &}quot;D'une grosse couleuvre qu'ils appellent 'oloubera' qui est dans une caverne effroyable" (Bouton 1640:II 7 70).

^{51 &}quot;Vingt, ou deux fois dix, montrant les doigts des mains et des pieds; après cela, s'ils veulent en dire davantage, et exprimer [un] plus grand nombre, ils prennent du sable" (Bouton 1640:X 128).

be heard by them [that] will be a great benefit to us to teach them".⁵² And our author does not hesitate to use this gibberish in his book.⁵³

The Carib ceremonies

Bouton notes that the Carib "often make wines for different occasions in their *carbets* which means they get together in large huts built for this purpose, where they drink excessively... it sometimes lasts eight or ten days"⁵⁴ and he adds that this is the time to attack them because then they are almost always drunk. If our author did not understand the true meaning, he notes, however, that these "wines" are an opportunity to talk about important subjects, including the war (X, 120), and goes on to identify the different stages of these meetings. Our Jesuit also tells us about important Carib ceremonies that he describes, especially the first one, as "ridiculous"; it is about the birth of their children (IX, 112-113). What amazes him is that after giving birth, the women go back more or less to a normal life while the husbands go to bed simulating pregnancy. The latter have to fast, are heavily scarified and have to abstain from certain foods (IX, 113-115). The Carib have almost the same ceremony to choose a chief (called *capitaine*): "we make him fast, he is torn to pieces and then we throw dry fish skin at his head, so if he does not skillfully protect himself, he is in danger of being hurt and cannot be considered a good chief".⁵⁵ Bouton also stresses that these chiefs have relatively little power in society.

"Cruel, fickle, deceitful, faithless, lawless men..."

Bouton paints a pejorative portrait of the natives. They are "suspicious, cruel, fickle, deceitful, and without faith, without law, without fear of divine justice"⁵⁶, they act by surprise and we must be constantly wary of them (IX, 117-118). They do what they want and do not have any justice (IX, 110-111). Not always understanding what they do, including making *ouicou*, Bouton depicts them as "extremely dirty in the way they eat"⁵⁷.

But what is most striking for our Jesuit is the way they live: "The men are wonderfully lazy and spend time in their beds or drinking or chatting on top of them, being combed by their women, not an hour goes by without being combed and they do not even bother going fishing, hunting, they'd rather spend time on themselves preferring fishing crabs and leaving the hut only to catch lizards, turtles or something else".⁵⁸ If Bouton did not un-

^{52 &}quot;Un certain baragouin mêlé de français, d'espagnol, anglais, et flamand [...] en peu de temps on peut et les entendre, et se faire entendre à eux, [ce] qui nous sera un grand avantage pour les instruire" (Bouton 1640: XI 130).

^{53 &}quot;Magnane navire de France" (tomorrow ship from France), "maté par lui " (killed by him), "mouche bourache" (very drunck), "mouche manigat" (very agile) (Bouton 1640:111, 117).

^{54 &}quot;Font souvent pour diverses occasions des vins dans leurs carbets, c'est à dire des assemblées dans de grandes cases faites exprès, où ils boivent excessivement [...] cela dure quelques fois jusqu'à huit ou dix jours" (Bouton 1649:X 120).

^{55 &}quot;On le fait jeûner, on le déchiquette, puis on lui jette à la tête des peaux de poisson sèches, de sorte que s'il ne se pare dextrement, il est en danger d'être blessé, et n'être tenu pour un bon capitaine" (Bouton 1640:IX 114-115).

^{56 &}quot;Défiants, cruels, inconstants, trompeurs, sans foi, sans loi, sans appréhension de la justice divine" (Bouton 1640:XI 136).

^{57 &}quot;Extrêmement sales en leur manger" (Bouton 1640:IX 118).

^{58 &}quot;Les hommes sont merveilleusement fainéants, et passent le temps dedans leurs lits, ou dessus à boire, causer, et se faire peigner par leurs femmes, il ne se passe point une heure qu'ils ne se fassent peigner, et ne prennent pas même la peine de pêcher, ou chasser, aimant mieux se passer à eux, et ne manger que de la cassave, et des crabes, que de sortir de la case pour prendre du lézard, de la tortue, ou autre chose" (Bouton 1640:IX 111-112).

derstand their life, he nonetheless noticed that the way "they lead their lives was so pleasant that they are so happy and content, that no matter how well you treat them, there is nothing that you could do to make them stay with you".⁵⁹ He adds that even those who lived some time with the French have left at the first opportunity to go back to their own people (IX, 116).

The author of the *Relation* was struck by the conditions the Carib women find themselves in. Unable to understand this society, he makes clear in his account, how the tasks between men and women are distributed. The first deal with war, fishing and hunting; the second with gardens and domestic affairs. The women seem to him then "unfortunate and treated like slaves"⁶⁰ besides the fact that the men can have several wives and treat them very badly and sometimes, he says, kill them because they are very jealous (IX, 110).

The Carib War

Their weapons are essentially "red wooden bows, with arrows made of reeds, which instead of iron have a strong sharp and poisonous wooden tip"; they do not shoot straight ahead but high up and their dexterity enables them to hit their targets very often, they also have "red wooden spears" and for close combat, they have *boutous*, "which are large redwoods, flat, an inch thick, and half a foot wide at the end, two or three feet long, with which they trample the head of their enemies".⁶¹ They used dugout canoes to travel from island to island that could carry forty to fifty men and Bouton tells us that some put up sails, to imitate the Europeans (IX, 127).

According to Bouton, the Carib carried out all their wars by surprise at dawn in making as much noise as possible with their cries. They are painted black around their eyes with juniper. They seemd to have realized the effects of firearms and constantly moved to avoid being an easy target and when they saw the fuse being lit, they cast themselves on the ground to avoid the bullets (X, 124-125). Bouton also reports that some Carib have firearms and know how to use them (X, 126). In their attacks, they have a strong defence, they ceased fighting and collected their dead. Bouton also notes their great courage (X, 126).

In 1640, the Carib engaged in fighting against the French in Guadeloupe, against the English in St. Lucia, Antigua and Montserrat, and against all those who sought to occupy their islands. But they also waged war against the Galibis, the Amerindians who were on the continent and made alliances with the Arawaks to fight against them (X, 122)⁶².

^{59 &}quot;Qu'ils mènent leur est si agréable, qu'ils en sont très contents et quelque bon traitement que vous leur fassiez, vous ne les retiendrez point pour demeurer avec vous" (Bouton 1640:IX 115).

^{60 &}quot;Malheureuses, et traitées comme des esclaves" (Bouton 1640:IX 110).

^{61 &}quot;Arcs de bois rouge, avec des flèches de roseaux, qui au lieu de fer ont au bout un bois fort pointu, et empoisonné [...] sagaies de bois rouge [...] qui sont gros bois rouges, plats, épais d'un bon pouce, larges par le bout de près de demi pied, longs de deux ou trois pieds, dont ils écrasent la tête de leurs ennemis" (Bouton 1640:IX 123-124).

⁶² Bouton undoubtedly makes a mistake here.

Some characters

Bouton refers only to three individuals, three Carib leaders. The first of them is Kaïerman who Du Parquet had imprisoned to give two natives back to him that his men had captured from the French. He managed to escape but was bitten by a snake and died shortly after (I, 26). This account is confirmed by Du Tertre who cites a letter dated November 8, 1639, repeating the same story (Du Tertre 1978:131).

The other two Carib *capitaines* are Le Pilote⁶³ and his brother Arlet. Le Pilote is portrayed as a great friend of Du Parquet from whom he took the name (III, 40). He seemed to seek peace with the French, so much so that some settlers felt that without him the French could not settle permanently on the island. He seemed to be rejected by his own people and Bouton claimes that he wished to live alongside the French.⁶⁴ The third captain is Arlet, one of Le Pilote's brothers, "who had small pieces of brass hanging from the lips, chin, and nose"⁶⁵, and wished to be baptized if his women had allowed him (XI, 140).

Conclusion

Is the *Relation* of Jacques Bouton a model of reference for subsequent writers? Bouton, for the first time in our current state of knowledge, draws up a brief outline of the Carib and their customs in the last two chapters of his book. This description, the source of which the author's inspiration is unknown, will serve as a model for many other "reporters", including Sieur De La Borde (1674), Mauril de Saint-Michel (1652), Jean Hallay (1657), and very probably Charles de Rochefort, Mathias Du Puis (1652) and Pierre Pelleprat. This description, and especially the "stereotypes" used by Bouton, will be reused throughout the seventeenth century and even much later, and would go on to forge a misrepresented and crooked image of the Carib people, which still lingers on today.

Bouton's *Relation* is an essential text for understanding the settlement of the French in Martinique and it gives us, in addition, an accurate picture of Carib Martinique in 1640.

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⁶³ He gave his name to the commune of Case-Pilote. His carbet is marked on seventeenth century maps.

^{64 &}quot;Sans lui les Français n'eussent pu se loger, et maintenir dans l'île" (Bouton 1640:XI 137-138).

^{65 &}quot;Qui avait de petites pièces d'airain pendues aux lèvres, au menton, et au nez" (Bouton 1640:IX 110).

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DE INSULIS KARAYBICIS RELATIONES MANUSCRIPTÆ

Adrien Le Breton, the last Jesuit missionary in the Carib island of St. Vincent¹

Benoît Roux

From his experience on St. Vincent, Adrien Le Breton has left a set of five manuscripts, now being preserved at the *Muséum national d'histoire naturelle* in Paris. It reveals in particular an *Herbier karaïbe* in which he describes nearly 500 plant species observed at St. Vincent and Dominica. This paper, however, focuses on manuscript 939 (Ms. 939): the *De insulis Karaybicis relationes manuscriptæ*. This composite manuscript, written in both Latin and French, consists of 121 pages and describes the islands of St. Vincent and Martinique, with specific references to the Amerindian populations of these islands. Obviously, the Ms. 939 was meant to be published, but this has never been done. However, it appears to have formed the basis of an anonymous manuscript entitled Description de l'isle de Saint-Vincent, preserved today in the Archives départementales de la Martinique. This paper will look at Ms. 939 in detail and analyse the document, and specifically its description of indigenous populations, in its historical context.

Sobre su experiencia en San Vicente, Adrien Le Breton nos ha dejado un conjunto de cinco manuscritos conservados en el *Muséum national d'histoire naturelle* de París. Nos permite descubrir especialmente un *Herbier karaïbe* en el que describe cerca de 500 especies vegetales observadas en San Vicente y en la Dominica. Pero en este artículo nosotros enfocamos en el manuscrito 939 (Ms. 939): el titulado *De insulis Karaybicis relationes manuscripta*. Este manuscrito compuesto, redactado en latín y en francés, que comprende 121 páginas, describe de modo un tanto deshilvanado la isla de San Vicente, la de la Martinica y sobre todo las poblaciones amerindias de dichas islas. A pesar de haber sido destinado a todas luces a la publicación, el Ms. 939 nunca llegó a ser publicado. No obstante, parece que sirvió de base a un manuscrito anónimo titulado *Description de l'isle de Saint-Vincent*, conservado hoy en día en los *Archives départementales de la Martinique*. A partir del Ms. 939 y tomando como referencia numerosos documentos archivísticos, nos esforzaremos en saber cuál fue la misión de Adrien Le Breton y cuáles son las informaciones extraíbles de este manuscrito para nuestro conocimiento de los indígenas caribes de San Vicente.

De son expérience à Saint-Vincent, Adrien Le Breton nous a laissé un ensemble de cinq manuscrits conservés au Muséum national d'histoire naturelle à Paris. On y découvre notamment un *Herbier karaïbe* dans lequel il décrit près de 500 espèces végétales observées

¹ Article drafted within the framework of a PhD study about the Amerindian societies of the Lesser Antilles (from the end of the fiftheenth century to the middle of the eighteenth century), supervised by Professor Bernard Grunberg at the Université de Reims Champagne-Ardenne.

à Saint-Vincent et à la Dominique. Mais nous nous intéresserons davantage au manuscrit 939 (Ms. 939) : Le *De insulis Karaybicis relationes manuscripta*. Ce manuscrit composite, rédigé en latin et en français, formé de 121 pages, décrit de façon plus ou moins épars l'île de Saint-Vincent, de la Martinique et surtout les populations amérindiennes de ces îles. Visiblement destiné à être publié, le Ms. 939 ne le fut pourtant jamais. Néanmoins, il semble avoir servi de base à un manuscrit anonyme intitulé *Description de l'isle de Saint-Vincent*, conservé aujourd'hui aux Archives départementales de la Martinique. À partir du Ms. 939 et à l'aune de nombreux documents d'archives, nous chercherons à savoir quelle a été la mission d'Adrien Le Breton et quelles sont les informations que nous pouvons tirer de ce manuscrit pour notre connaissance des Indiens caraïbes de Saint-Vincent.

Introduction

"He was a wise man, skilled at Mathematics, extremely pious and zealous for the glory of God and the salvation of these poor Barbarians" (Labat 1722:IV 449).

The famous Dominican Jean-Baptiste Labat uses these terms to draw the only known portrait of the Jesuit missionary Adrien Le Breton, whom he met in St. Vincent on September 24th, 1700. Even if many only see a literary fiction in this phrase, we can however retain the praise of a "missionary and botanist on whom we would have liked to know more about" (David 1984:153; Chatillon 1979:37-39).

Adrien Le Breton was baptized on February 5th, 1662 in Blois.² Related to a rich *bourgeois* family of Blois, the Pelluys, he was the son of the squire Pierre Le Breton, sieur de Bardy, and Marie Petit, herself daughter of one of the King's lawyers, also advisor at the *pré-sidial* (judicial tribunal) of Blois.³ Having studied philosophy for two years, he entered the novitiate of the Society of Jesus in Paris (*Domus Probationis Parisiensis*) in October 1679.⁴ From 1682, he studied grammar, philosophy and humanities at the Jesuit college of Blois.⁵ Then he taught there (*professor non sacerdos*) humanities (1683-1685) and rhetoric (1685-1686).⁶ In 1686, he went to the Jesuit college of Nevers to teach humanities.⁷ In 1687, he became *repetitor* at the famous Jesuit college of La Flèche and pursued there his studies in theology (1688-1691).⁸ At the end of 1692, the Roman archives mention him as being *In itinere ad Insulas*.⁹ Indeed, he landed on Martinique probably at the beginning of 1693.¹⁰ Immediately, he was sent on a mission among the Carib Indians of St. Vincent. He lived there until April 1701 (Labat 1722:I 68).

- 6 ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1683, f°56r, 1684, f°93r, 1685, f°124v.
- 7 ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1686-1687, f°155r.
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² Archives départementales du Loir-et-Cher [AD 41, Blois], 5 Mi 18, R5, Registres des baptêmes de la paroisse Saint-Honoré, Blois, 05/02/1662.

³ AD 41, F 278, Contrat de mariage de Pierre Le Brethon et Marie Petit, 13/01/1650, 11 f²; Bibliothèque centrale du Muséum national d'histoire naturelle [BCMNHN, Paris], Ms. 939, De insulis Karaybicis relationes manuscripte, p.[1] (25).

⁴ Archivum romanum societatis Iesu [ARSI, Roma], Francia, vol. 23, *Catalogi breves (1640-1681)*, 1679, f²443v; ARSI, Francia, vol. 15, *Catalogi triennales (1675-1685)*, 1681, f²297r and 347r, n^o20.

⁵ ARSI, Francia, vol. 15, Catalogi triennales (1675-1685), 1685, f°416r and 474r, n°7.

⁹ ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1692, f°344r.

¹⁰ ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1693, f³52v; ARSI, Francia, vol. 16, Catalogi triennales (1690-1696), 1693, f²240r and 296v, n°17.

From his experience on St. Vincent, which put an end to fifty years of Jesuit evangelism in this island, Adrien Le Breton left us several testimonies, among which numerous papers on Antillean botany, published between 1726 and 1733 in the *Mémoires de Trévoux* – a literary and scientific periodical created by the Jesuits in 1701.¹¹ Some manuscripts also reappeared in the nineteenth century thanks to the scattering of several private libraries. For example, in February 1858, the auction sale of the library of the Jussieu family allowed the *Muséum national d'histoire naturelle* of Paris to acquire two manuscripts of Adrien Le Breton: the *Relatio historica de Sanctî Vincentii insulâ Karaÿbicâ* (classification mark Ms. 939) and the *Herbier karaïbe* (classification mark Ms. 937-938).¹² A few years before, the *Muséum* had bought three other manuscripts attributed to Le Breton.¹³

But here we will focus on Ms. 939, renamed by the librarians of the *Muséum*: *De in*sulis Karaybicis relationes manuscripta. It is a composite manuscript of 121 pages, written and paged on both sides, composed of three different parts. The first one (pp.1-30) is the *Relatio historica de Sanctî Vincentii* strictly speaking. The second one (pp.31-32) is a short description of Martinique entitled *De Martinicâ insulâ americanâ*. The third part (pp.33-121) consists of a set of scattered elements, notes in French and Latin on the Carib Indians of St. Vincent and on the Antillean flora. The manuscript is preceded by a letter in French from Adrien Le Breton, which was attached to the consignment of the *Relatio* to France. It was sent from Martinique to his brother "Mr. Breton de Bardy" and is dated May 7th, 1722 (pp.[1]-[3]). So, Ms. 939 was drafted at the latest in 1722, but it is not possible to date it more accurately. The letter is followed by a *Mémoire*, in French, describing the contents of a package of plants intended for "Mrs de Jussieu, Doctors of Medicine, etc. in Paris" (p.[4]). This last document could explain the presence of Ms. 939 in the Jussieu library. The manuscript has been written in a single hand, certainly Le Breton's.

In 1982, Ms. 939 was published and translated into French by R. Lapierre and R. Divone in the *Annales des Antilles*. This edition has been partially translated into English in 1998 (Le Breton 1982:35-118, 1998). However, the page order of the manuscript having been modified in these two editions, our study rests above all on the original manuscript.¹⁴ Although Ms. 939 is a late testimony, it has two main interests: first of all, Le Breton is the last missionary to have stayed durably among the Amerindians of St. Vincent, which

¹¹ Journal de Trévoux ou Mémoires pour l'histoire des sciences & des beaux-arts. Trévoux: Imprimerie de S.A.S., 1726-1733.

¹² Catalogue de la bibliothèque scientifique de MM. de Jussieu. Paris: Henri Labitte Libraire, 1857, p.451, n°3978-3979; BCMNHN, Ms. 939, De insulis Karaybicis relationes manuscripta. Paper. 121 p. 230×165 and 175×115 mm. Calfskin binding; BCMNHN, Ms. 937-938, Herbier karaïbe, ou Traité des plantes qui croissent dans les isles karaybes de la Dominique et de Saint-Vincent. Paper. 284 p. and 143 f°. 175×115 mm. Hardback.

¹³ BCMNHN, Ms. 63, Observations du R.P. Le Breton, de la Compagnie de Jésus, sur quelques plantes des isles de l'Amérique, décrites par Guillaume Pison. Paper. 65 p. 310×190 mm. Paper-backed; BCMNHN, Ms. 667, Description des plantes de l'Amérique, par le Père Le Breton, avec une lettre de ce religieux. Paper. 35 f°. 170×110 mm. Paper-backed; BCMNHN, Ms. 668, Observations sur quelques plantes de l'Amérique, avec des descriptions et quelques figures envoyées à Messieurs Fagon, premier médecin de Louis XIV, roy de France, et Raudot, par le R.P. Le Breton, missionnaire apostolique de la Compagnie de Jésus, du Cap françois de Saint-Domingue, le 27 juillet 1715. Paper. 63 and 133 f°. 185×120 mm. Brown calfskin binding.

¹⁴ We shall give, besides the references of the manuscript, the corresponding pagination for the edition of 1982 in brackets ().

island became a Carib territory after the peace treaty of Basse-Terre in 1660.¹⁵ Moreover, he is the only one, along with the Sieur De la Borde and Monsieur Du Montel, to have left a testimony about the Indians of this island (De la Borde 1674:40).¹⁶

From Ms. 939 and numerous other archival documents, we will focus on explaining Adrien Le Breton's mission in St. Vincent. Then we shall reflect on the reasons and conditions of the writing, and *in fine* on the ethnohistorical reach of *De insulis Karaybicis*. We will finally try to show what this manuscript, still relatively unknown, can add to our knowledge of the Carib of St. Vincent.

The mission of Adrien Le Breton to St. Vincent

In 1693, when Adrien Le Breton landed in St. Vincent, the Jesuits had already established a mission there for forty years. However, the friars never felt totally safe, as is shown by the martyrdom of the Jesuits Aubergeon and Gueymeu, who were killed by some Indians while officiating in St. Vincent in 1654 (Du Tertre 1667:I 466; Pelleprat 1655:I 78-93).

Adrien Le Breton: an instrument of a new French-Amerindian diplomacy

Looking at the official correspondence, Le Breton's mission to St. Vincent was part of a wider project of aiming at regaining control on the Carib territories by the administrators of the French islands. Indeed, in 1686-1687, the administrators of the French islands, General Governor Blénac and Intendant Du Maitz de Goimpy defined together a coherent policy for the Carib Indians. Because of the impossibility to lead military operations against the latter, both administrators chose to privilege the diplomatic way.¹⁷ Religion appeared to be an essential part of their handling of the general situation and hence missionaries became the instruments of this new policy. In March 1694, Du Maitz de Goimpy describes the mission of Le Breton to St. Vincent as a strategic operation following "the attempt that the English made to entice the savages [i.e. Indians]". Indeed, in 1664 the English made a serious attempt, by handing over a commission of Deputy-Governor of Dominica to the English-Indian half-blood Thomas Warner ("Indian Warner") (Du Tertre 1667:III 85-86). Trying to learn from this issue, the French administrators decided to reactivate the Jesuit mission to St. Vincent, having "noticed the consequence of this intention which consists in making between them [i.e. the Indians] the difference of the presents and the commissions to incite in them a spirit of superiority which would maintain the others in an appearance of subordination where they could become used by the intervention of the missionaries who go to mission in their isles".¹⁸ By trying to establish a hierarchy among the Indians and by leading them to accept a social organization close to that of the Europeans, Blénac and Du Maitz thus hoped to subject them to the colonial order, or at least to maintain in them some loyalty to the King of France.

¹⁵ Du Tertre (1667:I 572-578); Archives Nationales d'Outre-Mer [ANOM, Aix-en-Provence], COL, C⁸⁸1, n°4-5, Traité conclu entre Charles Houel, gouverneur de la Guadeloupe et les Caraïbes and Copie enregistrée au conseil supérieur de la Martinique du traité d'alliance défensive et offensive conclu entre les Français et les Anglais contre les Caraïbes de Saint-Vincent et de la Dominique, Guadeloupe and Martinique, 31/03/1660-06/04/1660.

¹⁶ Today lost, the papers of Monsieur du Montel are indirectly known thanks to Charles de Rochefort (1658:140-141) who quotes them.

¹⁷ ANOM, COL, C^{8A}2, Blénac à Colbert, Martinique, 18/11/1679, f^o206r-207r; ANOM, COL, C^{8A}2, Blénac à Colbert, Martinique 30/01/1680, f^o290.

¹⁸ ANOM, COL, C^{8A}8, *Du Maitz*, Martinique, 01/03/1694, P27v; ANOM, COL, C^{8A}8, *Du Maitz*, Martinique, 01/03/1694, P153r-153v.

Blénac and Du Maitz gave themselves the political and financial means to achieve their ambitions. On a political level, especially directed towards the English, the administrators (on the orders of the King) based their legitimacy of action on the treaty signed in Basse-Terre in 1660, which stipulated that the Indians can be educated by French missionaries, whom they are free to welcome at home.¹⁹ But the real tour-de-force took place in 1687, when the missionary Pierre Combaud got authorization from Blénac and his superiors to base his mission in St. Vincent, under the protection of the English in order to be provided for all contingencies.²⁰ At the same time, Blénac and Du Maitz also took care of providing enough resources to the Dominican and Jesuit missions in the Lesser Antilles.²¹ In 1687, Du Maitz wrote: "It's necessary to pay the Jesuits for the mission that they undertook in St. Vincent, 1406^{tt} [i.e. pounds] 15, according to the report which they send. This may seem too high an expense, but will be seen as necessary to easily infiltrate within the savages by being generous with them".²² In the following days, the Jesuits asked permission to definitively settle this matter by fixing the amount that should be paid by the King for their services.²³ This financial aspect clearly marks a break in the perception of the role of the missions by the French authorities. They used to be initiatives by religious orders, generally approved by Companies or wealthy patrons (Du Puis 1652:228-229). By 1687, the apostolic action in Carib territory became an official mission which was paid by the King around 1500 pounds a year.²⁴

The material conditions of the mission in St. Vincent

While the project was clear and known, the ways to achieve it were obscure. Furthermore, the absence of a real framework staging the author in *De insulis Karaybicis* indubitably complicates our study of the mission of Le Breton. Speaking of his settling, Le Breton only suggests that he did not live in an Indian village but rather nearby as he writes: "One day, I saw, myself, that five hundred men [...], had hurried to the village to gather quite close to my house".²⁵ Labat adds: "there are ten leagues from the place where we had cast anchor in the Basseterre of St. Vincent to the river of Roseaux, located approximately in the middle of Basseterre of the island of Sainte-Alousie [i.e. St. Lucia]" (Labat 1722:IV 448). The mission was thus probably located in the northwestern part of the island, as is confirmed by all the texts mentioning the Jesuit presence in St. Vincent, sued at the court of Martinique for having taken possession of a land apparently given by the Indians to Adrien Le Breton,

¹⁹ ANOM, COL, C^{8A}4, Blénac et Du Maitz, Martinique, 15/08/1686-06/05/1687, f^o249v. and 250v-251r; Du Tertre (1667:I 577-578); ANOM, COL, C^{8B}1, n^o5, Copie enregistrée au conseil supérieur de la Martinique du traité d'alliance défensive et offensive conclu entre les Français et les Anglais contre les Caraibes de Saint-Vincent et de la Dominique, Martinique, 31/03/1660-06/04/1660.

²⁰ The National Archives (UK) [AN, London], CO 1/60, n°53, Combaud to the English commander of the H.M.S. Mary Rose, St. Vincent, 15/08/1686, l°178r-178*v; ANOM, COL, C^{8A}4, Blénac et Du Maitz au Roi, Martinique, 06/03/1687, l°234r-234v.

²¹ About the financing of the Dominican mission *cf.* ANOM, COL, C^{8A}4, *Blénac et Du Maitz au Roi*, Martinique, 06/03/1687, P236r-236v.

²² ANOM, COL, C^{10D}2, Correspondance, Saint-Vincent, 22/04/1687, f°1.

²³ ANOM, COL, C^{8A}4, *Du Maitz*, Saint-Christophe, 24/04/1687, f°321r.

²⁴ ANOM, COL, F³58, Fonds Moreau de Saint-Méry, Mémoires des habitants de la Martinique, Saint-Vincent, 1720.

²⁵ BCMNHN, Ms. 939, De insulis, p.28 (68).

declares that the latter "lived with the person who granted him asylum, [and that he has] never acquired from the Carib Indians the land in question" (Le Breton 1982:8). It must therefore have been a roving mission.

It is also very difficult to estimate how much time Le Breton really spent in St. Vincent. Indeed, although appointed to this mission from 1693 until 1701, he regularly returned to Martinique to serve several parishes there. For example, Jean-Baptiste Labat mentions his presence in the fort of Saint-Pierre in January 1694 and that he remained there until March of the same year (Labat 1722:I 68,226). Parish registers of Martinique also show his frequent presence on this island. He served Case-Pilote from September 1694 till May 1695 and from February till May 1696.²⁶ Meanwhile, he pronounced his vows on August 1695.²⁷ In 1698, he is again in Martinique. Finally, it is difficult to draw up a precise chronology of his movements. We may simply note that, according to a letter sent to General Governor Machault in 1705, it is said that Le Breton 'was on a mission of almost three years in St. Vincent', which makes him the friar who stayed the longest among the Indians of St. Vincent.²⁸

The Jesuit priest's frequent journeys between St. Vincent and Martinique show the numerical weakness of missionaries in the Lesser Antilles. This deficiency is more obvious when the scale of the apostolic missions is taken into account. When Le Breton arrived in St. Vincent, he met the friar coadjutor Nicolas Odot there, who had been staying alone on the island since the previous year.²⁹ In 1694, they returned to Martinique together where Odot died in September 1695.³⁰ Le Breton thus found himself alone until the arrival of his colleague Antoine du Chailloux in 1697. But the following year, du Chailloux's health forced them to return to Martinique. Le Breton got back to St. Vincent a little later, very likely alone.³¹ However, in 1700, Labat underlined the presence of three incumbents by Le Breton's side, "one Frenchman and two Blacks". But this statement is contradicted by the testimony of a Frenchman in St. Vincent in 1753 (Labat 1722:IV 448; Le Breton 1982:8). However that may be, these elements prove that actual investment in the mission at St. Vincent was low and show the gap between the plan of the colonial authorities, the apostolic project of the Jesuits, and the real number of missionaries.

This is even more obvious when we study the population that was to be evangelized. Le Breton does not make quantitative assessments, but he notices the heterogeneousness of the population of St. Vincent. Alongside the "Carib Republic" (Labat 1722:IV 442-443), "for fifty years at most, many slaves who came from the African coast infiltrated there [after] the ship that transported them [...] was wrecked". All the "Ethiopians" perished except for the few who got together with some Indians and "had children who increased in numbers so fast during the following years that they equal, if not exceed, the Carib population today".³² This narrative telling the origin of those that are not yet named the "Black Caribs" is entirely stereotyped and can be found in all the texts about St. Vincent (De la Borde 1674:27; La Pierre 1980:38). But unlike other authors, Le Breton does not mention the

²⁶ ANOM, DPPC, 5 Mi 491, Registres paroissiaux de Case-Pilote, Martinique, 1675-1778.

²⁷ ARSI, Gallia, vol. 40, Epistolæ de promovendis ad gradum (1610-1755), 1695, f°121r; ARSI, Francia, vol. 16, Catalogi triennales (1690-1696), 1696, f°392v, n°13.

²⁸ ANOM, COL, C^{10A}1, Sieur de Beaumont, Martinique, 14/10/1705, 6f°.

²⁹ ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1692, f°344r, 1693, f°352v.

³⁰ ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1695-1696 f°380v.

³¹ ARSI, Francia, vol. 24, Catalogi breves (1682-1699), 1697-1698, f^o389v, 1699, f^o417r.

³² BCMNHN, Ms. 939, De insulis, p.3-4 (37-38).

Maroons and the slaves kidnapped by the Indians, although they were present prior to the 1675 shipwreck that he mentions (Young 1795:6). Indeed, from the end of the sixteenth century, the Spanish authorities noted the massive presence of Blacks in Indian villages (cf. Moreau 1992:176-177). It would otherwise be difficult to explain that a small group of Black survivors were able to exceed the Amerindian population in only two generations. In February 1683, Governor Blénac and Intendant Bégon considered that there were approximately 2000 Carib Indians and 4000 Blacks on St. Vincent.³³ Despite an epidemic of smallpox that occurred in 1690, the proportions of Indians and Blacks must have been rather similar to what they were at the beginning of Le Breton's mission.³⁴ It is thus with a numerous and mixed population that the Jesuit was confronted.

From the mission to the parishes: the end of the Jesuit presence on St. Vincent

We have understood that the political project established by Blénac and Du Maitz required people, financial means and a continuity of action, all of which needed support from the colonial authorities. The appointment in 1696 of General Governor d'Amblimont and Intendant Robert created a new order. Tinged with a restrictive vision of French policy on the Indians, both administrators were not convinced of the necessity to pursue their evangelization, the result of which seemed insignificant to them. In March 1699, the colonial authorities thus decreed that the very few friars available had to be allotted to supervising the French and the slaves, rather than to the Indian missions.³⁵ Deprived of the support of the administrators, the Jesuits were forced to give up their mission on St. Vincent. In 1700, Le Breton briefly left St. Vincent and exercised his ministry at St. Kitts as missionarius Gallorum et Nigritarum. During this short period, Antoine du Chailloux and Charles Thomas Yon succeeded him in St. Vincent.³⁶ In April 1701, Superior General Pierre Combaud definitively called back Le Breton to Martinique, in order to exercise his ministry in the Fort "as priest of the Negroes", and then in the parishes of Prêcheur and Case-Pilote.³⁷ In 1705, he was sent with five other Jesuits and two seculars to Santo Domingo, to serve eight parishes in the north of the island.³⁸ He remained there for about ten years, before finally returning to Martinique, where he carried on with his pastoral work in Carbet, in Case-Pilote and in the Fort, until his death on July 14th, 1736 in Saint-Pierre.³⁹

The end of the Jesuit missions on Carib territory clearly shows a shift of the French policy towards the Amerindians rather than a change in the strategy of the missionaries. For a long time, the Jesuit missionary project would be no longer based on the evangelization of the Island Carib but on the indoctrination of the slaves and the Indians of the mainland.

³³ ANOM, COL, C^{8A}3, Blénac et Bégon au Roi, Saint-Christophe, 13/02/1683, f°251 ff.

³⁴ ANOM, COL, C^{8A}6, *Blénac*, Martinique, 05/04/1690, f⁶6r-6v; ANOM, COL, C^{8A}6, *Blénac*, Martinique, 30/05/1690, f⁶48v.

³⁵ ANOM, COL, C^{8A}11, *d'Amblimont*, Martinique, 31/03/1699, f°21r-23r.

³⁶ ARSI, Francia, vol. 24, Catalogi breves (1682-1700), 1700, f²426v; ARSI, Francia, vol. 25¹, Catalogi breves (1700-1713), 1700, f⁸v.

³⁷ ANOM, DPPC, 5 Mi 621, Registres paroissiaux de Prêcheur, Martinique, 1665-1777; ANOM, DPPC, 5 Mi 491, Registres paroissiaux de Case-Pilote, Martinique, 1675-1778; ARSI, Francia, vol. 25¹, Catalogi breves (1700-1713), 1701, f¹9v-20r.

³⁸ ARSI, Francia, vol. 25¹, Catalogi breves (1700-1713), 1705, f°63v.

³⁹ ARSI, Francia, vol. 25¹¹, Catalogi breves (1714-1720), 1719, 6⁶527v; ANOM, DPPC, 5 Mi 482, Registres paroissiaux du Carbet, Martinique, 1677-1770; ANOM, DPPC, 5 Mi 491, Registres paroissiaux de Case-Pilote, Martinique, 1675-1778; ARSI, Francia, vol. 27, Catalogi breves (1731-1744), 1736, 6⁶104v.

Besides, when negotiating about the royal funding of the mission of St. Vincent, the Jesuits also asked to be in charge of "the conversion of the Savages of the mainland and not to be limited to St. Vincent only".⁴⁰

We must, however, add that in 1701 the hope of restoring the Jesuit mission in St. Vincent was still real.⁴¹ Moreover, Le Breton continued to play a leading role in the French-Amerindian relationships. In September 1705, he was sent with the Sieur de Beaumont to Grenada in order to clarify the events which led to the murder of several inhabitants by the Indians of the island, and avoid a war. Le Breton and an Indian of St. Vincent (probably a translator) disembark in the "quartier of the Carib Indians", on the windward coast of Grenada, in order to meet Olivier, the Indian accused of the murders. However, nobody appears for two days.⁴² On the 3rd of October, the ship that took Le Breton back to Martinique made a stopover at St. Vincent. The Jesuit was then put in charge of exchanging "eight Savages (except the Indian passenger) [for] three English prisoners of the Caribs".⁴³ This last mission was a success but the mediation undertaken by Le Breton is an overall failure, since a new French-Amerindian war was declared in the following days, much to the annoyance of the inhabitants of Grenada.⁴⁴ Nevertheless, after his return from Santo Domingo, Le Breton pursued his action among some Indians in Martinique and regularly goes to Dominica (abandoned by the Dominicans) "to tell God's word".⁴⁵ Curiously, Le Breton does not say a single word about the Indian presence in Martinique in the part of Ms. 939 dedicated to this island.

De insulis Karaybicis: between an official report and a curious report

The writing conditions

Le Breton very likely wrote the manuscript in 1722, about twenty years after the end of his mission in St. Vincent. The *Relatio* is a compilation of scattered notes taken during that mission.⁴⁶ The style is epistolary and the composition ends with the promise of sending "the rest that is missing".⁴⁷ The second and third parts of Ms. 939 partly complete it, but the chapters about language and "Indian superstitions" were never written.⁴⁸ The whole document was sent to "Mr Raudot, General Intendant of the French Navy" with whom Le Breton regularly corresponded through his brother "Mr Le Breton de Bardy".⁴⁹ Commissioner as well as General Inspector of the Navy and former Intendant of New France, Antoine-Denis Raudot also held the offices of coastguard of the Invalides and

⁴⁰ ANOM, COL, C^{8A}4, *Du Maitz*, Saint-Christophe, 24/04/1687, f°321r.

⁴¹ ANOM, COL, C^{8A}11, d'Amblimont, Martinique, 31/03/1699, f'21r-23r; Archives S.J. Province de France [ASJF, Vanves], IB2, n°32, Combaud à Bégon, Martinique, 06/06/1701, f'1r; ARSI, Francia, vol. 25¹, Catalogi breves (1700-1713), 1702, f'36r.

⁴² ANOM, COL, C^{10A}1, Sieur de Beaumont, Martinique, 14/10/1705, 6 f°.

⁴³ ANOM, COL, C^{10A}1, Sieur de Beaumont, Martinique, 14/10/1705, 6 f°.

⁴⁴ ANOM, COL, C^{8A}15, Sieur Sauvan à Machault, La Grenade, 13/10/1705, P390r; ANOM, COL, C^{8A}15, Machault, Martinique, 12/12/1705, P394r-395v.

⁴⁵ ANOM, COL, C⁸⁸1, n°20, Carte de la Martinique par l'ingénieur Blondel, c.1680; ANOM, COL, F³44, Fonds Moreau de Saint-Méry, 08/01/1728, f°484r-485v; DAVID. Dictionnaire, Tome 1, p.154.

⁴⁶ BCMNHN, Ms. 939, De insulis, p.[1] (25).

⁴⁷ BCMNHN, Ms. 939, De insulis, p.30 (69).

⁴⁸ BCMNHN, Ms. 939, De insulis, p.3 (37), p.44 (83).

⁴⁹ BCMNHN, Ms. 939, De insulis, p.[1] (25).

Colonies, and councillor in colonial affairs since 1711(Brown *et al.* 1966). It was not the first time that Le Breton sent him documents about the West Indies. In 1715, while in Santo Domingo, the Jesuit sent him his *Observations sur quelques plantes de l'Amérique*⁵⁰. At the beginning of the 1720s, he regularly sent him "either curiosities or seeds of this country [i.e. the Antilles]".⁵¹ Le Breton actually confessed that the writing of Ms. 939 answered a direct request from Raudot.⁵²

During the eigtheenth century, it is common that missionaries corresponded directly with the Ministry of the Navy. Besides, Le Breton, also interested in botany, maintained epistolary relationships with the *Académie royale des Sciences* and with the *Jardin du Roi*, to which he addressed numerous reports, botanical and zoological packages which often crossed the Atlantic Ocean inside coconuts or gourds, for lack of boxes.⁵³ He also supplied the American collections of the cabinet of curiosities of Michel Bégon, then Intendant of the Navy in Rochefort. In 1701, he sent him "some small curiosities [of St. Vincent], each with their particular label in addition to the general report provided in the box".⁵⁴ Unfortunately, none of these packages reached our time.

Right from the introduction of the *Relatio*, Le Breton introduced himself as a "historian" in charge of recording in writing what "deserves to be known and kept in memory" about the Amerindians: "their name, their race, their institutions, customs, intelligence, technical activities, character, tastes, religious practices, language, way of living and of acting".⁵⁵ This document comes within a batch of sendings intended to supply cabinets of curiosities as much as the colonial scientific machinery implemented by Colbert. Besides, Raudot is the author of a *Relation par lettres de l'Amérique septentrionale*, written from several reports sent to him about the Illinois and Miami Indians (cf. Kinietz 1940). Did he have similar intentions with Le Breton's narrative? Unless Raudot wanted to take advantage of the Le Breton's information to support the different French attempts to get a foothold on St. Vincent in the years 1720s.⁵⁶ We know nothing about it.

Le Breton's narrative: an ethnohistoric source or the reproduction of a wellknown model?

It is obvious that Adrien Le Breton draws the main part of his narrative from the years he spent in St. Vincent. However, given the number of such documents written in the eigtheenth century, it is legitimate to question the way he collected the information and wonder about his readings relating to the Antilles. As many chroniclers, Le Breton says nothing of his informants. Official correspondence informs us that he spoke the Arawakan language of the Island Carib, which is confirmed by his superiors when they note his inclination to learn languages.⁵⁷ Besides, the repeated use of action verbs such as hear, learn and see sug-

⁵⁰ BCMNHN, Ms. 668, Observations, f°[1].

⁵¹ BCMNHN, Ms. 939, De insulis, p.[1] (25).

⁵² BCMNHN, Ms. 939, De insulis, p.[1] (25).

⁵³ BCMNHN, Ms. 667, Description, f^o4v and 5r-6r.

⁵⁴ ASJF, IB2, n°32, Combaud à Bégon, Martinique, 06/06/1701, f°1r-1v.

⁵⁵ BCMNHN, Ms. 939, De insulis, p.1 (35), p.3 (37), p.25 (62).

⁵⁶ ANOM, COL, F³58, Fonds Moreau de Saint-Méry, Saint-Vincent, 03/12/1719; ANOM, COL, F³58, Fonds Moreau de Saint-Méry, Mémoires des habitants de la Martinique, Saint-Vincent, 1720; ANOM, COL, F³58, Fonds Moreau de Saint-Méry, Saint-Vincent, 07/11/1727.

⁵⁷ ANOM, COL, C^{8B}2, n°81, *Mithon*, Martinique, 19/09/1705, f°8v-9r; ARSI, Francia, vol. 16, *Catalogi triennales* (1690-1696), 1693, f°296v, n°17, 1696, f°444v, n°13.

gest that – contrary to Raymond Breton, a few years before in Dominica, who was assisted by a French-speaking Indian – Le Breton (1978:58) directly noted down Indian words. However, the long comments attributed to the Indians are probably not *verbatim* transcriptions. There are three main distortions to the original Amerindian language: at first a double translation (from Carib language to French and from French to Latin), then an obvious by stylistic adjustment which altered the Indian rhetoric.

Le Breton might have read some of the many works already published about the New World and the Antilles at the beginning of the eighteenth century. But he does not give any information about that. The sketchy aspect of the plan of his manuscript makes a comparative study between the shaping of his text and that of previous authors almost impossible. Except for some elements already present in many of the Antillean chronicles, there is no flagrant borrowing from another author. On the contrary, he diverges for example from Jean-Baptiste Du Tertre's narrative when staging an Indian coated with *rocou* (annatto) who left a mark on the white bed of the governor's wife, as he sat down on it. According to Le Breton, the scene took place in Martinique at Governor Jacques Dyel Du Parquet's house, while Du Tertre locates it in Guadeloupe in the house of Governor Jean Aubert.⁵⁸

The use of certain specific terms can also be a discriminating factor in the study of the Antillean textual tradition. Le Breton uses for example the Carib word *piaje* as a synonym of *bohyé* (a shaman), a word rarely used in the Antillean literature (more common in the Amazonian literature).⁵⁹ The Sieur De la Borde (1674:9) is the only one to use it in the whole printed corpus. Le Breton might have been inspired by De la Borde's narrative. However, this term may be specific to the Indians of St. Vincent, given that the Jesuit Étienne de La Pierre (1980:39), who also stayed on this island, used it in his correspondence. However that may be, Ms. 939 is maybe more the result of personal experience than the simple repeat of elements already known. In this regard, Le Breton's narrative is a first-hand source for the study of the Amerindian populations of the Lesser Antilles.

La Description de l'isle Saint-Vincent: an accomplished version of De insulis Karaybicis?

If no relationship can be established between Ms. 939 and previous sources, it is possible to draw a parallel between this text and another, *a priori* later, document. In 1957, the departmental archives of Martinique acquired an anonymous manuscript of 107 pages entitled *Description de l'isle de Saint-Vincent.*⁶⁰ Published in 1961 by R. Pinchon in the *Annales des Antilles*, this manuscript is not entirely unknown since Charles Leclerc, a bibliophile, mentions it in his *Bibliotheca Americana* of 1887.⁶¹ The analysis of the written form asserts that Le Breton did not draft it and that it is an eigtheenth century document. The structure of the *Description* is much more accomplished than that of Ms. 939 but takes up again many points already tackled in the latter, as is shown by numerous significant resemblances. There is no doubt that the author of the *Description* had knowledge of the text of Le Breton. Both documents insist on the heterogeneous nature of the population of

⁵⁸ BCMNHN, Ms. 939, De insulis, p.48-49 (86-87); Du Tertre1667:II 391-392).

⁵⁹ BCMNHN, Ms. 939, De insulis, p.35 (75) ff.

⁶⁰ Archives départementales de la Martinique [AD 972, Fort-de-France], 1 J 212, *Description de l'île de Saint-Vincent*, 107 p.

⁶¹ Description de l'isle de Saint-Vincent. Annales des Antilles: Bulletin de la Société d'Histoire de la Martinique, 1961, n°9, p.31-81; Leclerc (1887:30).

St. Vincent, using the term "Ethiopians" to refer to Blacks. They also pay equal attention to funeral rites. They make identical references to the Greeks and the Romans to condemn the presumption of inhumanity of the Europeans towards the Amerindians. Moreover, they both give praise to the Spaniards' foresight introducing several European animal species into the islands to provide for hunting. They even tell the same anecdote of a Carib leader coated with *rocou* and stage it in Martinique at Du Parquet's. Some aspects are however different: the author of the *Description* dates the wreckage of the slave ship in 1657 and states that the Blacks had totally supplanted the Indians in numbers.⁶² Finally, the idyllic vision of Le Breton is finely shaded, in particular by the use of repeated pejorative terms such as "vindictive", "lazy" and "superstitious".⁶³ The issue of the philological tie between the two manuscripts remains however undetermined.

Le Breton and the Carib Indians of St. Vincent

The Carib Indians: an itinerant population of navigators

Like all the Antillean chroniclers, Le Breton wonders about the origins of the Carib Indians. But he is probably the first one not to link them with a mythical Amerindian narrative (*Kalinago-Akayoman*). On the contrary, he bases his interrogation on a determinist pre-scientific reflection. He dates the arrival of the Carib Indians in the islands around the thirtheenth century.⁶⁴ This early dating is chronologically in line with archaeological theories developed between 1960 and 1975, which linked the arrival of the Carib Indians to the emergence of the Suazan Troumassoid ceramic subseries, at the beginning of the thirtheenth century (cf. Bullen and Mattioni 1970:1-3). The analogy stops here, however, since Le Breton bases his dating on the primitive aspect of the vegetation of the islands and on the fact "that there is not the slightest vestige of a distant antiquity".⁶⁵

From the beginning of the *Relatio*, Le Breton insists on the fact that the Carib Indians are not sedentary but "itinerant" (we would rather use the term semi-nomadic). Indeed, he seems to have been struck by their high mobility and by their frequent changes of settlement, which he ranks among the Amerindian "customs". He emphasizes the effective importance of the inter-island relationships in the preservation of political alliances.⁶⁶ For example, one day he evokes the presence in St. Vincent of 500 men dressed in their ceremonial fineries that came to attend a *caouynage* (a ritual drinking feast).⁶⁷ This element is all the more important, since from the years 1670-1680, the French colonial authorities made several attempts to regulate the movements and economic activities of the Indians.⁶⁸ Apparently, these did not work very well.

Le Breton's interest in Amerindian navigation is also perceptible. Indeed, he dedicates a rather long passage to "dugouts and boats" in the chapter on "the journeys" in the *Relatio*, and another chapter to "Indian shipbuilding" in the third part of the manuscript.⁶⁹ In the

⁶² AD 972, 1 J 212, Description, p.8-9 (38).

⁶³ AD 972, 1 J 212, Description, p.16 (41), p.23 (44), p.25 (45), p.58 (59).

⁶⁴ BCMNHN, Ms. 939, De insulis, p.6 (40-41).

⁶⁵ BCMNHN, Ms. 939, De insulis, p.6 (40-41).

⁶⁶ BCMNHN, Ms. 939, De insulis, p.7-9 (42-43).

⁶⁷ BCMNHN, Ms. 939, De insulis, p.28 (68).

⁶⁸ ANOM, COL, C^{&A}2, Traité conclu entre Blénac et Pierre Moigna et Jonana, chefs Caraïbes de Saint-Vincent, Saint-Vincent, 13/02/1679, f°104r-105r.

⁶⁹ BCMNHN, Ms. 939, De insulis, p.21-27 (58-64), p.77-82 (101-104).

latter, he presents three types of boats, used by the natives: the *pipery* to sail on rivers, the *kouliala* or boat and the *kanaoa* or dugout to sail in open sea, especially during wars. A chapter devoted to "fishing" is the opportunity to describe in detail the various Amerindian fishing techniques (in the river or in the sea).⁷⁰

The Carib "golden age" or the idealized vision of the "ancient natives" 71

Following the pattern of numerous Antillean chroniclers, Le Breton lingers on describing the heavenly environment of St. Vincent. The climate is wonderful and appropriate for the preservation of good health. Springs of water are numerous. The Jesuit also notes the fertility of the ground and the "continuous abundance" of Indian products, such as "pineapple, banana, Indian fig, various varieties of palm-kernels, sweet potatoes, yams, five sorts of custard apple, yellow and white guava, yellow mombin, mahogany, manioc".⁷² The usual disadvantages of the area are absent from St. Vincent which is, for example, exempt "from mosquitoes and from all other small venomous creatures". Nevertheless sixty years before, his colleague Jean Hallay talked about the important presence of "vipers" on the island!⁷³

Le Breton has the same heavenly vision when talking of the Amerindians. He paints a "sincere moral portrait" of the Indians that ends with this sentence which summarizes his vision: "And there is finally, everywhere, pure love from a sincere heart, so that the Indians truly enjoy the golden age so celebrated by the poets".⁷⁴ This impression of a timeless golden age is strengthened by the absence of a factual framework and by the use of numerous implicit references to classical authors (Ovid, Lucan, Homer or Cicero). Le Breton even ventures into giving a Greek etymology to the term "dugout" (*pirogue* in French), which starts with the Greek prefix *pyro*-, which means fire, "because of the speed of its race which in a way reminds that of the fire".⁷⁵ This vision is not surprising since heavenly imaginary and antique idyllism were very widespread at the time when the first chroniclers (Bouton, Pelleprat, Du Tertre) published their reports. Besides, to avoid disturbing this idyllic image, Le Breton very quickly juggles away the presence of the Blacks which were about to outnumber the Indians and totally omits to mention the presence of French settlers on the island, which dates back at least to the 1670s.⁷⁶

Like Montaigne or Léry, Le Breton puts also the "inhumanity" of the Indians in perspective using examples from Antiquity. He of course condemns their excesses: their drinking sessions, their violence and superstitions, but he systematically emphasizes the good in them, that carries a higher hope than the evil.⁷⁷ It is therefore an unusual narrative despite Labat's report stating that Le Breton's situation in St. Vincent was hardly more idyllic than that of his predecessors. Like the Antillean Jesuit martyrs, the friar was always afraid of being slaughtered by the Indians, especially when they were drunk (Labat 1722:IV 448).

⁷⁰ BCMNHN, Ms. 939, De insulis, p.13-15 (50-53).

⁷¹ BCMNHN, Ms. 939, De insulis, p.4 (39).

⁷² BCMNHN, Ms. 939, De insulis, p.5-6 (41).

⁷³ Bibliothèque nationale de France [BnF, Paris], Ms. Moreau 841, Relation des Isles de la Martinique et de S. Christophle par le P. Jean Hallay de la Compagnie de Jésus escritte à Nismes en 1657, f°161r.

⁷⁴ BCMNHN, Ms. 939, De insulis, p.66 (97).

⁷⁵ BCMNHN, Ms. 939, De insulis, p.21 (58).

⁷⁶ ANOM, COL, C^{8A}2, *Traité conclu entre Blénac et Pierre Moigna et Jonana, chefs Caraïbes de Saint-Vincent*, Saint-Vincent, 13/02/1679, f°104r-105r.

⁷⁷ BCMNHN, Ms. 939, De insulis, p.64 (96).

However, Le Breton's narrative does not let anything transpire of the conditions described by Labat.

The Indians under the eyes of the botanist: a precise description of everyday life

Le Breton is particularly interested in the daily life of the Indians, their customs and knowledge. Every chapter is an opportunity to describe items of their everyday life. He evokes the welcoming ceremony of visitors in a village and carefully describes the furniture they used: seats, *hactey* (hammocks), *matoutou* (table trays).⁷⁸ He is always worried about the slightest detail, for example when describing the Carib seats: "Picture a small piece of wood one or two feet long, thick and approximately six fingers wide, with the top bent in on each side towards the middle and the bottom part cut and dug in four places, so that at times it can be stable, and at other times removed from the rest". Calabashes have a central place as they are used in the making of bowls and utensils. Hence ceramic seems secondary.⁷⁹

In spite of a certain timeless dimension, Le Breton's narrative does not paint the picture of Indian society at a standstill. On the contrary, the frequent oppositions between past and present clearly mark evolution. For example, he stresses their technological borrowings from the Europeans, such as metal tools (in particular those of the carpenter) or the technique of sailing. But it is especially in the field of Indian weaponry that Le Breton notes most changes: metal arrow points, and the even more frequent use of firearms, which the Indians handle as assuredly as their bows.⁸⁰ But Le Breton is above all the first one to note that some Indians carry swords instead of the traditional *boutous* (war clubs).⁸¹ He also notices the presence of cocks, goats, and pigs imported from Europe and hunted by the Amerindians with dogs (also of European origin).⁸² The very precise descriptions of the Amerindian ornaments allow Le Breton to underline even more the importance of *rassades* (small European glass beads).⁸³ Even when he talks about items that the natives reject, such as the compass, it is to show the efficiency of the empirical Indian knowledge in mathematics, astronomy or navigation.⁸⁴ Le Breton thus describes a largely altered Amerindian society. However, it remains very difficult to reveal the influence of Blacks on this society.

A marked interest for the Carib Indians' "non-religion"

As many other friars, Adrien Le Breton considers the Carib Indians as people without religion. Despite that, he devotes numerous pages to the description of their beliefs and ceremonies. This contradiction can be explained by the fact that the Jesuit based the Carib "non-religion" on the absence of prayers, rites, temples and sacrifices and not on the Indian beliefs.⁸⁵ Just like his contemporary chroniclers, he distinguishes two spirits: *Chemijn* about whom he says almost nothing except that it is not necessary to honour him because he "is self-sufficient to himself to enjoy all sorts of bliss"; and *Mabouja* or *Maboija* responsible for

⁷⁸ BCMNHN, Ms. 939, De insulis, p.9-10 (44-47).

⁷⁹ BCMNHN, Ms. 939, De insulis, p.97-101 (113-115).

⁸⁰ BCMNHN, Ms. 939, De insulis, p.18-19 (55-57).

⁸¹ BCMNHN, Ms. 939, De insulis, p.28 (67).

⁸² BCMNHN, Ms. 939, De insulis, p.16 (54).

⁸³ BCMNHN, Ms. 939, De insulis, p.85 (107).

⁸⁴ BCMNHN, Ms. 939, De insulis, p.23 (60).

⁸⁵ BCMNHN, Ms. 939, De insulis, p.33-34 (73-74).

all sorts of troubles such as hurricanes, wrecks, and *Mal de Siam* (yellow fever) etc.⁸⁶ Like his colleague Jacques Bouton, Le Breton notices that this "demon [i.e. *Maboya*]" very often beats the Indians.⁸⁷ He is apparently disturbed by what he sees and hears about this spirit, as he later confesses: "I am undoubtedly not a man to listen to this twaddle, but so many things, and of importance, are told in good faith by reliable men, witnesses who not only heard but also saw, that I have scruples to deny all this".⁸⁸

Le Breton then evokes the boyez or pyayes who suffer the harshest treatment from the Maboya. He describes them as being at the same time "priest, magistrate, [and] medicine man".⁸⁹ Following the example of Du Tertre, Le Breton does not consider *boyés* as priests but as ministers since they do not devote themselves entirely to their gods, thus establishing a parallel with the Protestants, heretical ministers in the eyes of the Jesuit.⁹⁰ But before "being registered among the apprentices Boyhez", novices must follow an apprenticeship, the initiation tests which appear to him as "cruel torture" (purges by means of emetics, scarifications, fasts).⁹¹ Essentially, the description of the meeting between Maboya, the boyé and his apprentice (the last step of the apprenticeship) is similar to the ceremony of invocation of the Chemin described a century earlier by the Anonymous of Carpentras.⁹² The action always takes place at night, in a dark hut as "*Maboya* hates light". He arrives in a big crash and stirs a lot during his conversation with the novice. Le Breton seems rather gullible when facing this ritual staging. Furthermore, he contradicts himself twice in his narrative. On one hand, *Maboya*, who until then had appeared as a unique entity – and thus comparable to the devil - divides himself in several "geniuses", one for each of the boyé. On the other hand, this "Satan" is called "Lare", a protective divinity of the Roman household, intrinsically beneficial.⁹³ Is it a clumsy translation or a real mistake? We can see here the limits of the missionaries' understanding of the Carib spiritual world.

The *boyé* is also a medicine man. He is the one who "treats [...] by uncountable tricks, to either make illusion more easily, or by abundant and repeated absorption of essences that are extracted by hand, or after cooking, from trees as well as from medicinal herbs".⁹⁴ But Le Breton also introduced the idea that the *boyé* holds a magistracy – in the antique meaning of the word – "empowered only in reason, he is in charge not only of explaining and interpreting, but also of regulating the customs, decisions, usages and laws of the entire community". Without talking of the prophetic role of the shamans in certain South American societies, this remark offers a reinterpretation of the role of the *boyés* in Carib society. Actually they seem to have influenced the decisions of the group more effectively than the leaders themselves (*Tiouboutouli hauthe/Ouboutoul*). This role seems strengthened when the author of Ms. 939 evokes "the witches", old widows or young virgins, responsible for evil spells, diseases and death.⁹⁵ Indeed, it is the *boyés* – then qualified as "criminal wiz-

⁸⁶ BCMNHN, Ms. 939, De insulis, p.34 (p.74).

⁸⁷ BCMNHN, Ms. 939, De insulis, p.34-35 (74-75); Bouton (1640:IX 106).

⁸⁸ BCMNHN, Ms. 939, De insulis, p.35 (75).

⁸⁹ BCMNHN, Ms. 939, De insulis, p.36 (76).

⁹⁰ Du Tertre (1667: II 365).

⁹¹ BCMNHN, Ms. 939, De insulis, p.36-39 (76-78).

⁹² BCMNHN, Ms. 939, De insulis, p.39-44 (78-83); Bibliothèque Inguimbertine [Carpentras], Ms. 590, Relation d'un voyage infortuné fait aux Indes occidentales par le capitaine Fleury avec la description de quelques îles qu'on y rencontre, recueillie par l'un de sa compagnie qui fit le voyage, c.1620, f°52r-53v.

⁹³ BCMNHN, Ms. 939, De insulis, p.39 (78), 41 (80).

⁹⁴ BCMNHN, Ms. 939, De insulis, p.55-57 (97-98).

⁹⁵ BCMNHN, Ms. 939, De insulis, p.77-78 (83-84).

ards" – who are in charge of exposing those responsible for the group's misfortune to public condemnation, thus exposing them to execution. They thus exercise a very important control on their society (Descola 1988:818-827). Even if Ms. 939 allows us to shed some light on those aspects, Le Breton is totally unaware of it when he writes: "All being entirely equal, they [i.e. the Indians] admit no highly ranked man, no leader, no magistrate".⁹⁶

Despite an extremely marked interest in "the non-religion" of the Carib Indians, Le Breton almost never talks about his apostolic action. By contrast with many other Antillean chronicles, the knowledge and description of the Amerindian beliefs do not appear here as part of the evangelization process. As he personally confessed, Le Breton has "completely lost [his] goods [i.e. the presents for the Indians] and [his] effort" for a tiny result. But was not the interest of his mission, and *in fine* of his narrative, ultimately somewhere else? Certainly!

Conclusions

What new knowledge of the Carib Indians does Le Breton's text bring us? Firstly, the existence of *De insulis Karaybicis* gives an opportunity of illustrating the last Jesuit mission in St.Vincent, little studied before. At the turn of the seventeenth and eighteenth centuries, the missionaries willingly became diplomats among the Indians, with the support of the colonial authorities. Le Breton's narrative reflects this new policy. His ethnographical quest is thus aimed at improving his knowledge of the Indians, rather than evangelizing them. But, contrary to the other chronicles of the seventeenth century, Ms. 939 does not describe the Amerindian societies of the Lesser Antilles, it rather tries to faithfully describe their traditional characteristics. This is constant in the Antillean texts of the eigtheenth century. However, Le Breton's narrative paints a very detailed picture of the everyday life of the Carib Indians, in which the reader can detect many practical changes learnt from the relationships with the Europeans, and even with the Africans. Ms. 939 is thus an essential source for our knowledge of the Indians of St. Vincent at the end of the seventeenth century and at the beginning of the eigtheenth^h century, before the emergence of the Black Carib and the Yellow Carib.

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⁹⁶ BCMNHN, Ms. 939, De insulis, p.7 (43).

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JOHN NICHOLL An Houre Glasse of Indian Newes (1607)

Eugénie de Zutter

An Houre Glasse of Indian Newes is a narrative about an exploration trip made in 1607 and written by John Nicholl, an English sailor. It describes the expedition of a group of sailors and soldiers embarked on a ship conveying goods to supply an English colony in the West Indies. Approaching their final destination, the group gets lost in the Atlantic Ocean. When they run out of provisions, the men decide to make land on an island that turns out to be St. Lucia. Part of the group (including Nicholl) decides to try to settle on the island while the rest set off to England. The narrative describes the accidental cohabitation between these Englishmen and the Indians of St. Lucia. It goes without incident during the first six weeks before suddenly turning into an armed conflict. Many reasons explain the importance of this document as it improves our knowledge of the everyday life of the Carib and the nature of their relationship with the English.

An Houre Glasse of Indian Newes es un relato de viaje escrito por un marinero inglés, John Nicholl. Cuenta la expedición de un grupo de Ingleses embarcados en un carretero para abastecer una colonia de las Indias occidentales. Al acercarse de su destino, el buque se pierde y el equipaje resuelve atracar en la isla de Santa Lucía. Una parte del grupo, incluido Nicholl, decide establecerse allí durablemente, mientras que los demás vuelven a Inglaterra. Empieza entonces el relato de una cohabitación entre Ingleses y Amerindios que primero se efectúa sin incidentes antes de convertirse en un conflicto armado. Este documento nos permite profundizar nuestro conocimiento de la vida cotidiana de los indios Caribes y del tipo de relaciones que mantuvieron con los Ingleses.

An Houre Glasse of Indian Newes est un récit de voyage écrit en 1607 par un marin anglais, John Nicholl, qui relate l'expédition d'un groupe d'Anglais embarqués sur un roulier pour aller ravitailler une colonie anglaise des Indes occidentales. Le navire se perd à l'approche de sa destination et l'équipage décide d'accoster sur l'île de Sainte-Lucie. Une partie du groupe, dont Nicholl, entreprend de s'y installer durablement, tandis que le reste repart vers l'Angleterre. Commence alors le récit d'une cohabitation entre Anglais et Amérindiens qui se déroule d'abord sans incident avant de se transformer en un conflit armé. Pour plusieurs raisons, ce document est important car il permet à l'historien d'approfondir ses connaissances sur la vie quotidienne des Caraïbes et sur la nature de leurs relations avec les Anglais.

Introduction

An Houre Glasse of Indian Newes is a narrative about an exploration trip made in 1607 and written by John Nicholl, an English sailor. It describes the expedition of a group of sailors and soldiers embarked on a ship conveying goods to supply an English colony in the West Indies, located on the banks of the Oyapock River, that forms today most of the border between French Guiana and Brazil.

Approaching their final destination, the group got lost on the Atlantic Ocean. When they ran out of provisions, the men decided to make land on an island that turns out to be St. Lucia. Part of the group (including Nicholl) decided to try to settle on the island while the rest set off to England. The narrative describes the accidental cohabitation between these Englishmen and the indigenous people of Saint-Lucia. It went without incident during the first six weeks before suddenly turning into an armed conflict. After a few indecisive battles, English and Carib Indians came to an agreement: the English received an Indian dugout to leave the island immediately.

Nicholl's narrative is appealing for many reasons. First of all, it is not the story of an exploration but only the account of a sailor's experience: neither wordplay nor elevated language distort reality. Furthermore, the full text has rarely been used until now, although the complete original manuscript was published for the first time in 1607.¹ A summary can also be found in Samuel Purchas' famous collection of narratives (Purchas 1905-07). The following publications are more recent but incomplete: for example, they do not relate the journey back to England after the departure from St. Lucia (Jesse 1966; Hulme and Whitehead 1992). The dedications to Nicholl's patron and to the reader are also missing. Lastly, it is one of the earliest documents setting out long-lasting relationships between Englishmen and the natives of the Lesser Antilles. Until then, English activities in this area had indeed remained superficial because the Lesser Antilles were only stopovers for English privateers' ships on the way to the Greater Antilles and the mainland. In their attempt to settle in St. Lucia, Nicholl and his compations clearly stand out from their predecessors.

As shown above, this document is important. It helps improving our knowledge of the everyday life of the indigenous people of St. Lucia and of the nature of their relationships with the English.

Lifestyle of the natives of St. Lucia

During the first six weeks of pacific relationships, Nicholl makes some observations about the lifestyle of the natives of Saint-Lucia. There are, however, relatively few comments about the diet of the natives despite many mentions of English and Carib eating together. Manioc seems to be an important element of their diet. The natives use it a lot, in particular to bake bread that "keepe[s] long" (Nicholl 1605:17). He also mentions turtles (eaten for their meat, their fat or their eggs) as well as hens, chickens, woodcocks, snipes, pelicans, plantains and papaws. Nevertheless, despite eating Indian food, the English keep some of their own food habits. For example, they often season it with salt which greatly surprises the natives. Nicholl insists that "by no meanes [the English] could not make them eate

¹ The manuscript will be fully published and translated in French within the scope of the ANR-CSA program (2011-2012); Nicholl, J. 1607. An Houre Glasse of Indian Newes. Or a ... discourse, shewing the ... miseries ... indured by 67 Englishmen, which were sent for a supply to the planting in Guiana, in the year 1605, etc., British Library.

salt" (Nicholl 1605:17). The Indians prefer seasoning food with "Ginnie pepper"(Nicholl 1605:17). No specific drink is mentioned except brandy that the natives drink in large quantities.

By contrast, we can find more details about the customs of the Carib Indians. Nicholl mentions that men go naked and paint their whole body in red. They likewise draw three red stripes from their ears to their eyes, which gives them horrible faces ("Anticke faces") and makes them look like devils (Nicholl 1605:14). Nicholl even portrays them as "strange and ugly" in their first encounter (Nicholl 1605:14). They also wear an ornament that looks like "a foure-square plate" and that they wear "upon the small of their naked armes" (Nicholl 1605:19). Women go naked as well. Nicholl makes comments about the ugliness of the older women, describing "their side breastes, which dooth lie like emptie bagges" while young women are "proper" (Nicholl 1605:17). Even if they rarely see Indian women, Nicholl and his companions feel so embarrassed that they give them "shirts to cover their nakedness" each time they meet (Nicholl 1605:17).

Nicholl's observations are not surprising since in St. Lucia, he and his compatriots meet men and women that overturn the codes of European society: they go naked, they paint their body in red and above all, they are cannibals. This last point is important: Nicholl describes the natives as cannibals although he never proves this assertion. For example, we can read that St. Lucia is only inhabited by "cruell Caniballs and man-eaters", who are also "bloud thirsty enemies" that only dream of "eat[ing] [Englishmen'] flesh" (Nicholl 1605:15,29-30,31). This contradiction appears from the beginning: before even landing in St. Lucia, he describes it as an island only peopled with cannibals; yet these so-called man-eaters suddenly become simple Carib Indians when they quickly bring provisions to the famished English group.

Relationships between English and Carib Indians

The two groups communicate in Spanish. The English even have an interpreter. Besides, the Indian chief, named Anthonio in the text, has been a slave to the Spaniards on Margarita Island and can "speak a little Spanish" (Nicholl 1605:14). Both groups must also use French sometimes. Communication is therefore not easy as it is based on two languages that are alien to each community.

English and Indians keep "peacable" relationships during six weeks, as is shown by many examples (Nicholl 1605:16). They often share meals and become very close ("familiar") (Nicholl 1605:17). An Englishman even starts singing country songs to the Indians after a dinner washed down with plenty of alcohol. Moreover, both groups trade goods on a daily basis and the English appoint their own middleman to manage this trade. They get provisions as well as Indian houses in exchange for items such as knives, hatchets, pearls and thimbles. They also obtain fabrics and clothes (serge fabric, wooden clothes, cloaks), some of them of European confection. Indeed, not long before the English arrived in St. Lucia, three Spanish ships wrecked near the island and the natives hurried to pick up as much of the load as they could.

However, Nicholl's tone is exaggeratedly idyllic when speaking about the relationships with the natives. In fact the English are wary of them right from the start: they hurry to set up their only cannon on a table to make its use quick and easy in case "the Carrebyes should any time assault [them]" (Nicholl 1605:18). Furthermore, Nicholl notices that the natives get terrified when they see this cannon, convinced that the English plan to kill them. The

English also appoint a sentinel in turns to watch the camp, in which no armed Indian is allowed to enter. In addition, trade is rigorously restricted by rules that for example forbid selling a sword to an Indian. When this happens, a group including Nicholl demands the sword back from the house of the Indian chief himself. The latter becomes so angry at the English that "never after that would he be familiar with [them]" (Nicholl 1605:19).

The natives are equally mistrustful. They always refuse to lend hammocks in spite of repeated English demands, probably to make their stay as uncomfortable as possible. Indeed, hung above small fires, hammocks provide protection against mosquito bites. The natives also lure the English into believing that they can find gold in "a great Mountaine on the North-west part of the island" (Nicholl 1605:19). Spurred by their captain, the English mount an expedition. This expedition never gets back to the camp nor gives any news. Those that remained at the camp therefore suspect the Carib of slaughtering their compatriots. They think about "put[ing] them to the sworde" but finally change their minds, most probably because of their lack of preparation and fear of being outnumbered (Nicholl 1605:23).

War

The peaceful relationship suddenly turns into an armed conflict launched by the natives. The conflict can be divided into two main episodes. In the first one, twenty Englishmen are suddenly overwhelmed by a massive shooting of arrows while walking peacefully and "bodly" towards the house of the Indian chief (Nicholl 1605:23). During the second episode, the natives besiege the English camp for several days. As no group really prevails over the other, they make a truce followed by an agreement which allows the English to quit St. Lucia aboard a dugout given by the natives.

The Indians always attack by surprise. This is why Nicholl talks about "treason" and "ambush" (Nicholl 1605:23-24). For example, the first attack starts with a sudden sword shot to an Englishman. Moreover, the natives use their bows and arrows profusely in order to overcome their enemies. Nicholl and his compatriots are quickly flooded by a rain of arrows (curved shots) so thick that Nicholl talks of "hayle" (Nicholl 1605: 28). The natives target various body parts: shoulders, back and also legs (in order to prevent their enemies from running away). Once fallen on the ground, the English are immediately robbed. Nicholl himself is hit by two arrows in the back and gets his hand nailed to his sword handle (probably wooden) by another.

The English use their muskets to protect themselves. But during the first attack, they can only fire five or six shots in total. In fact, they feel safe, convinced that the sight of their muskets is enough to scare the Indians. But it takes time to load a musket and it needs to be supported by a pitchfork to shoot properly. Muskets quickly become bulky and are soon set aside, giving the English no other choice than to flee. Some of them still try to defend themselves with their sword (when they manage to take it from its sheath). Nicholl sees his comrades falling to death, one after another.

The natives are not so successful in their attack of the English camp. Indeed, Nicholl, the only survivor of the first ambush, manages to reach the camp before them and warns his compatriots, who hence can get their muskets and cannon ready. Unable to overcome these weapons, the Carib give up the battle. They come back a few days later (Nicholl mentions around "13 or 14 [hundreds]" Caribs surrounding the camp) (Nicholl 1605:27). But the English manage to resist this second siege, in spite of attacks repeated everyday

for several hours. The cannon keeps them away even when, lacking munitions, the English load it with rocks.

Conclusion

We can draw the following conclusions from the analysis of Nicholl's text. First of all, the story shows that the European presence in the Lesser Antilles is ancient. Indeed, the natives of St. Lucia did not live in isolation and had established trading relationships with Europeans ships for a long time. They also already fought Europeans before, since they seem to be well aware of the power of cannon and muskets.

The Spanish influence seems to be the most important of all. The Indians spoke Spanish and willingly had contacts with other Europeans, as when they decided to meet the English crew which arrived by accident on their island. But they could also turn against these newcomers if they felt that these became too invasive.

The Amerindians also showed certain knowledge of European habits. For example, they used the English thirst for gold in order to divide their group. By comparison, the English seemed out of touch with reality: led by their captain, they hurried to the mountain, led by their belief in the existence of *El Dorado*, probably influenced by Sir Walter Raleigh's *Discovery of Guiana* (1903-1905) (published a few years before, it was a best-seller in England). This underlines the major distortion between what the Spanish knew about the West Indies and what the English thought they knew. Indeed, the Spanish had stopped believing in *El Dorado* decades before and owed their prosperity at the time to their Peruvian silver mines. Nicholl also makes many mentions about the Indians being cannibals, but never provides any detail or observation of them acting in such a way. This suggests that he and his comrades were convinced before coming to the West Indies that the natives of the Lesser Antilles were cruel man-eaters, perhaps by certain books about the region published in Europe.

It is interesting to note, however, that the reputation of cannibalism of the Carib Indians did not have much impact on later European settling attempts, as can be seen from the voyage narration written a few years later by the *Anonymous of Carpentras* (Moreau 2002).

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PIERRE PELLEPRAT

A missionary between the Lesser Antilles and the Continent

Emilie Chatrie

This article discusses the Relation des missions des pères de la Compagnie de Jésus dans les Îles, et dans la Terre Ferme de l'Amérique Méridionale by Father Pierre-Ignace Pelleprat (1606-1667). This missionary Jesuit wrote the work after having stayed in the islands and in Guarapiche, on the mainland, from 1651 to 1655. The specifities of this work especially come from the author's character and from his attitude during his stay, that are revealed here. However, to explain Father Pelleprat's view of the natives amounts to searching how he succeeded in collecting his information regarding the Carib on the one hand, and the Galibis on the other hand. The historian must analyse the validity of his witness about the Carib - an indirect and inevitably evasive witness - since he based himself on Father Mesland's experience and comments with these people. Except for this difficulty, his methods also reveal the author's reasoning, whose interest concentrates on the natives of the mainland. From there, the *Relation*, the objective of which being to persuade Nicolas Fouquet to finance the dispatch of numerous missionaries Jesuits to the South American continent, must be seen through, under the condition to concentrate upon Pelleprat's past in France, and particularly upon the credibility which he acquired within the Society of Jesus, and his permanent wish to attract the reader's view on his good actions.

Este artículo discute Relation des missions des pères de la Compagnie de Jésus dans les Îles, et dans la Terre Ferme de l'Amérique Méridionale del padre Pierre-Ignace Pelleprat 1606-1667). Este misionero jesuita redactó la obra citada tras haber efectuado una estancia en las islas y en Guarapiche, en tierra firme, de 1651 a 1655. La especificidad de esta obra proviene sobre todo del carácter de su autor y de la actitud que adoptó durante su estancia, elementos ambos puestos de manifiesto en dicha obra. No obstante, explicar la visión del padre Pelleprat sobre los indígenas supone indagar cómo consiguió reunir toda la información acerca de los caribes por una parte, y de los galibis por otra. El historiador ha de analizar el valor del testimonio del autor sobre los caribes - testimonio indirecto y forzosamente sesgado- puesto que se funda en la experiencia y en los comentarios de otros misioneros. Aparte de esta dificultad, los métodos empleados por Pelleprat revelan también su razonamiento y cómo su interés se centra ante todo en los indígenas de la tierra firme de Sudamerica. A partir de ahí, la Relación, cuyo objetivo es convencer a Nicolas Fouquet de que financie el envío de numerosos misioneros jesuitas al continente sudamericano, se entiende en base de que se interese en el pasado de Pelleprat en Francia, y especialmente en la credibilidad que se granjeó en el seno de la Compañía, así como en su permanente deseo de atraerse la mirada del lector sobre sus buenas acciones.

Cet article discute la Relation des missions des pères de la Compagnie de Jésus dans les Îles, et dans la Terre Ferme de l'Amérique Méridionale du père Pierre-Ignace Pelleprat (1606-1667). Ce missionnaire jésuite a rédigé cet ouvrage après avoir effectué un séjour dans les îles et à Oüarabiche, en Terre Ferme, de 1651 à 1655. Les spécificités de cet ouvrage proviennent surtout du caractère de son auteur et de son attitude lors de son séjour, qui sont révélées ici. Pourtant expliquer le regard du père Pelleprat vis-à-vis des indigènes revient à rechercher comment celui-ci a réussi à collecter ses informations à propos des Caraïbes d'une part, et des Galibis d'autre part. L'historien doit analyser la validité de son témoignage au sujet des Caraïbes – témoignage indirect et forcément biaisé – puisqu'il s'est basé sur l'expérience et les commentaires d'un autre. Hormis cette difficulté, ses méthodes révèlent aussi le raisonnement de l'auteur, dont l'intérêt se porte surtout sur les indigènes de Terre Ferme. A partir de là, la *Relation*, dont l'objectif est de convaincre Nicolas Fouquet de financer l'envoi de nombreux missionnaires jésuites sur le continent sud-américain, prend tout son sens, à condition de s'intéresser au passé de Pelleprat en France, et notamment à la crédibilité qu'il a acquise au sein de la Compagnie, et à son désir permanent d'attirer le regard du lecteur sur ses bonnes actions.

Introduction

Among the sources which enable today the historian to reconstruct the history of the French colonization in the West Indies and that on the American continent, we have the relations left to us by the explorers, the colonists and the missionaries who went there. One of them is the one by the Jesuit Pierre-Ignace Pelleprat (1606-1667), entitled *Relation des missions des pères de la Compagnie de Jésus dans les Îles, et dans la Terre Ferme de l'Amérique méridionale*, completed by a dictionary of the *Galibi* language. The *Relation* of Father Pelleprat was published at Paris by the Royal Printing-house in 1655. It has recently been reprinted and annotated by Réal Ouellet.

Pierre Pelleprat was born in Bordeaux in 1606. We have little information about his familial origins and on his life before he entered the Society of Jesus. He probably came from a relatively rich family which permitted him to enroll at a Jesuit college. He entered the noviciate of Bordeaux in 1623 and became a coadjutor brother in 1625.¹ After his noviciate, he was sent to several French colleges in order to teach grammar.² In 1631, Pelleprat joined a mission at Nérac, ordered by the King and in charge of fighting against Protestantism. In 1633 he was ordaned. In 1638, he was integrated into the mission of Loudun, in which he participated as an exorcist, four years after the death on the stake of the priest Grandier for sorcery. The mission aimed to pacify the souls and to implement a competent religious service. His participation shows that he had gained a certain credit with his superiors because the mission was ordered by King Louis XIII and Richelieu. It explains his involvement in the fight against Protestantism. From 1641, he was sent to several colleges as confessor, preacher and spiritual prefect. The inland missions did not dissuaded Pelleprat from the wish to go abroad, a wish that he showed on several occasions since the end of his training, and without result until 1651, when his superiors accepted his request and sent him to America. This year he embarked in La Rochelle with two other Jesuits, Guillaume

¹ Departmental archives [A.D.] of the Gironde, H 3144, folio 24r.

² The Jesuit taught grammar between 1625 and 1627 at the college of Tulle, at Pau from 1627 to 1629, and then at Saintes and Angoulême.

Aubergeon³ and François Gueymeu⁴ and joined the Jesuit mission established in the French Lesser Antilles since 1640, the goal of which being the evangelization of the Indians and black slaves. The experience gained during his numerous trips in France and his participation in the fight against heresy was probably essential for his involvement in the mission to the West Indies.

During his stay in the Lesser Antilles and at Guarapiche, located in the north of Venezuela, Pierre Pelleprat was in contact with the indigenous populations. To what extent Pierre Pelleprat integrated himself into the Indian communities? What was his vision of their cultures? What credit can we grant to the numerous information delivered by his work and from where did he get it? What vision of the Indians does the Jesuit give in the *Relation*? We will first study the information given by Pelleprat about the indigenous and black populations, gathered during his mission to the Lesser Antilles and the Orinoco basin. Finally, we will ask ourselves whether the *Relation* constitutes an ethnohistoric testimony.

The missions in the Caribbean

The Antillean mission

To reconstitute the different functions that Pelleprat occupied, the historian is confronted with some uncertain references in the *Relation*. We know that he quickly joined after his arrival in the islands the Jesuit college of St. Kitts. He mainly took charge of curial tasks for the French masters or enlisted and sometimes met the black slaves.

In his book, the author gives many details about the practices of slaves and Carib practices, and about their customs and ways of life. He explains in particular the origin of the Carib people and their language, which may be born from the union between the women of the conquered people of the islands (called *Igneris* by Pierre Pelleprat) with *Galibi* men (Pelleprat 1655:I-68). Furthermore, the community constituted the foundation of Indian society. This value is expressed by the role of the *carbet*, that Pelleprat designates as a "common room" (Pelleprat 1655:I0-74). He describes how intergenerational relations are considered, as well as those between men and women. The *Relation* emphasizes the warlike nature of the Carib, the importance of revenge. Every outrage committed against this people might result in a series of reprisals and slaughters.⁵ Pelleprat does not mention cannibal behavior, he only points out the barbarity of the Carib who make "whistles" (Pelleprat 1655:I-85) from human bone. However, he does not only describe the cultural specifici-

³ Guillaume Aubergeon (1614-1654) joined the noviciate of the *Society of Jesus* in 1634. Until 1650, when he embarked to America with Pierre Pelleprat and François Gueymeu, he taught courses in grammar and rhetoric at the colleges of Limoges, Poitiers, Agen, Angoulême and La Rochelle. In 1652 he was sent to St. Vincent among to the Carib population. He was killed on January 23, 1654 during the Mass he celebrated (Pelleprat 2009:273).

⁴ François Gueymeu (1618-1654) was a Jesuit missionary. He joined the College of Bordeaux to carry out his noviciate in 1638. He pronounced the four vows on February 13, 1640 (A.D. Bordeaux, H 3144, folio 43v). After his studies, he taught grammar and rhetoric in France. He participated in the mission sent to the islands and then travelled, with Fathers Pierre Pelleprat and Guillaume Aubergeon in 1651. François Gueymeu was sent with Father Aubergeon, to the Carib at St. Vincent. Both of them were assassinated on January 23, 1654 (Pelleprat 2009:278).

^{5 &}quot;[...] Sur ce soupçon il le fit lier au mas du bateau, et ne se contenta pas de le maltraiter lui-même, mais le fit fouetter cruellement par plusieurs de ses hommes. Le Caraïbe étant de retour à l'île de Saint-Vincent, ne manqua pas de faire savoir aux autres sauvages l'outrage qu'il avait reçu, et n'oublia rien pour les porter à venger un affront qui tombait sur toute la nation" (Pelleprat 1655:I 81).

ties of this population. His judgment about them is very assertive. From his point of view, black slaves are rather dull and slow, especially in learning notions which we assume to be the catechism.⁶ They also are badly looking.⁷ But the opinion of the Jesuit changes as soon as the slaves are christened.⁸

Regarding the Carib, Pelleprat has a more radical view. Indeed, he clearly denigrates Indian people from the isles of St. Vincent and Dominica in the *Relation*. In the dedicatory epistle, he recalls the death of his two former travel companions, killed in 1653 by the Carib during their office.⁹ The lives of these missionaries are also addressed in the book as a hagiographic narrative, focusing on their martyrdom.¹⁰ The organization of the *Relation* confirms Pierre Pelleprat's disdain towards the Carib populations. The Jesuit wishes to convince the readers that they are exercising extreme violence against the Jesuits. He says that it would be useless and dangerous to send an apostolic mission to evangelize them because they act like barbarians. So he explains that he noticed during his visit at St. Vincent that Guillaume Aubergeon preferred to take many precautions not to raise the ire of the natives while baptizing people. Aubergeon feared the reaction of the Carib at the announcement of his departure from the isle.¹¹

In fact, it appears that the opinion of Pierre Pelleprat was influenced by a lack of sensitivity of the Carib population towards the Catholic religion, and by his difficulty to understand the behaviour and customs of the natives. Indeed, after having described the massacre of Fathers Aubergeon and Gueymeu, the Jesuit says that some Carib retained objects belonging to both victims.¹² He deduced that some Indians felt remorse and wished peace, whereas it is more likely that the Carib kept them as evidence of their victory and revenge on the Europeans. The emphasis on the savagery of the Carib in the first part of the *Relation*, enables the author to introduce his stay on the Guarapiche River in the Orinoco basin, where he would show the difference with the *Galibis*.

^{6 &}quot;Les nègres ordinairement n'ont pas beaucoup d'esprit, et sont fort pesants, ce qui est cause qu'il faut bien de la patience, et bien du travail pour leur apprendre quelque chose [...]" (Pelleprat 1655:I 56).

^{7 &}quot;[...] outre tous ces désavantages, ils sont puants comme des charognes, et si hideux, et si mal faits qu'ils causent de l'horreur [...]" (Pelleprat 1655:I 56).

^{8 &}quot;Je ne sais si mes yeux étaient charmés, mais je les trouvais pour l'ordinaire bien faits, et agréables après leur baptême" (Pelleprat 1655:I 57).

^{9 &}quot;C'est dans cette île, où deux de nos pères laissèrent l'année passée la vie [...]" (Pelleprat 1655:Epître dédicatoire:6-7).

^{10 &}quot;Le Père Aubergeon était natif de Chinon en Touraine, et le Père Gueymeu de Casteljaloux petite ville de Gascogne : il y avait vingt ans que celui-là était jésuite ; et celui-ci quinze. Ils font tous deux morts en la fleur de leur âge, et lors qu'ils semblaient être plus nécessaires au monde, pour la conversion de ces peuples : mais ils ne pouvaient mourir en un temps plus favorable, puisqu'ils ont été sacrifiés eux-mêmes lorsqu'ils offraient Jésus-Christ en sacrifice, pour le salut de ces pauvres barbares" (Pelleprat 1655: I 84-85).

^{11 &}quot;Mais le Père, qui craignait que la nécessité de nos Français des Îles, n'obligea les Supérieurs à le rappeler, comme ils avaient déjà précéder en cet emploi, n'osait leur conférer ce sacrement, qu'avec toutes précautions requises, de peur de le hasarder mal à propos" (Pelleprat 1655:I 76).

^{12 &}quot;On nous a rapporté que les principaux sauvages de cette île ont été fort fâchés de leur mort, et qu'ils conservent encore leurs ornements d'autel, et leurs habits pour les rendre quand la paix sera faite" (Pelleprat 1655: II 85).

The mission in Guarapiche

Upon his arrival, Pierre Pelleprat seemed to have intended to settle on the continent. Back from the mission of the Jesuit Denys Mesland¹³ in the islands, he is appointed to accompany him to participate in a second mission in Guarapiche, in the Orinoco basin. Shortly after the arrival of the French, Father Mesland is invited by the Spanish to leave the facility in order to move to St. Thomas. Pelleprat finds himself alone with a French man who becomes his companion. Suffering from a disease which is more and more painful, he is forced to stay in the *Galibi* village. He takes this opportunity to improve his linguistic skills and to prepare a dictionary of the Galibi language. His visit also permits him to observe the cultural specificities of these people. He mentions the strict division of the tasks between men and women, who seem very helpful to their husbands (Pelleprat 1655:II 62-63). Polygamy was accepted in Galibi society. Its acceptance seems to have been facilitated by a very important sense of community in this tribe (Pelleprat 1655:II 61-62). He was also able to attend the funerary rituals.¹⁴ He notices that courage is a very important value. Children are educated to get a certain resistance to pain, and courage.15 Pelleprat also highlights the role of nudity, including the importance of *roucouage* and clothing ornaments. According to the Jesuit, the Galibis do not show any barbaric or cannibalistic behaviour. He nevertheless notes certain practices: "Some of them meant that they eated them, as several other nations from America do, but I have not noticed this practice in our wild populations; only is it true that they sometimes cut a hand, or a foot from the dead body of their enemy, that they roast them over a slow fire until there is no more substance, to keep them without putrefaction".¹⁶

In the *Relation*, the Jesuit is always underlining the *Galibi*'s kindness, docility and hospitality.¹⁷ Signs of mutual distrust are felt, however, in the attitude of these natives.¹⁸ Pelleprat advises his companion to leave Guarapiche in 1654, and to be ready to die.¹⁹ The Jesuit does not seem to care about these signs but it is possible that he did not wish to alert his superiors of the Society and the readers of the *Relation*. On the contrary, and several times over, Pelleprat evokes in the book that an apostolic mission on a larger scale would

¹³ Denys Mesland (1615-1672) was an open and intelligent man. He maintained an epistolary relation with René Descartes. He arrived in Martinique in 1645. Superior of the Martinique mission in 1647, he founded a Jesuit institution in St. Kitts. In 1651, he participated in first mission at Guarapiche and remained less than one year before leaving to the islands in order to organize a second larger mission (Pelleprat 1965:46).

^{14 &}quot;Je ne fais pas état de raconter en ce lieu toutes les coutumes des sauvages qui habitent ces contrées ; mais de parler seulement de celles dont j'ai eu quelque connaissance. Commençons par leurs funérailles" (Pelleprat 1655:II 64).

^{15 &}quot;Nos sauvages accoutument leurs enfants dès leurs plus jeunes années à mépriser les douleurs, pour les rendre plus courageux dans les combats" (Pelleprat 1655:II 72).

^{16 &}quot;Quelques-uns ont voulu dire qu'ils les mangeaient, comme font plusieurs autres nations de l'Amérique, mais je n'ai pas remarqué cette pratique en nos sauvages ; seulement est-il vrai qu'ils coupent quelques fois une main, ou un pied du corps mort de leur ennemi, qu'ils font rôtir à petit feu, jusqu'à ce qu'il n'y ait plus de substance, pour les conserver sans putrefaction" (Pelleprat 1655:II 59).

^{17 &}quot;Nous [...] fûmes reçus des Galibis avec de grands témoignages de joie, et d'amitié. Ces pauvres gens nous rendaient tous les services dont ils se pouvaient aviser [...]" (Pelleprat 1655:II 25).

^{18 &}quot;[...] Nous mesuraient des yeux, et ne se pouvaient saouler de nous regarder, ils ne sortaient de notre case que sur la nuit [...]" (Pelleprat 1655:II 25).

^{19 &}quot;[...] Je l'avertis [...] demeurant seul, et si jeune au milieu de la barbarie, et de tant de nations infidèles, il devait être continuellement sur ses gardes, et que comme il serait sans prêtre, et sans sacrement, il devait faire souvent des actes de contrition, se tenant toujours prêt de mourir [...]" (Pelleprat 1655:II 115-117).

have good results among the *Galibis*, who are receptive to evangelization.²⁰ This perhaps can explain why the Jesuit Pierre Pelleprat positively describes the *Galibi* people, in whom he finds no default. Life close to them seems agreeable. It is therefore necessary to examine to what extent this view is different from that on the population of Island Carib, and what it means.

The difference in the appraisal of the insular and continental Indians

During his stay in the Lesser Antilles, the Jesuit does not appear to have been involved in the mission destined to evangelize the Carib. His contacts with these Indians amount to a short stopover that he had been forced to make on the island of St. Vincent.²¹ In his work, the Jesuit mainly focuses on the violence and savagery of these people. In the *Relation* Pelleprat's preference for the *Galibis* is obvious.²² His feeling against the *Galibis* seems positive and Pelleprat is convinced that the French presence would be welcomed by the Amerindians, at least this is what the Jesuit tries to convince the reader (Pelleprat 1655:II-108). But less than six months after his arrival, Pelleprat is forced to return to the islands because of health troubles.²³ He talks about his goal to go back quickly to Guarapiche and about the scope of his apostolic project.²⁴ Indeed, he would like to create seminars on the mainland, destined to indigenous boys and girls, in order to form an Amerindian clergy which would be more able to evangelize Indian populations.²⁵ In this context, he gives some instructions to the French on the way to behave with the natives in order to ensure the greatest security to the settlers and a successful mission.²⁶

However, the docility of the Amerindians probably assumed another dimension. Indeed, the *Galibis* are not more hostile to the presence of missionaries than the insular Indian populations. However, it appears that the relations between the missionaries and the mainland Indians contained an important commercial aspect. The *Galibis* exchanged objects and food against tools manufactured in Europe.²⁷ It would seem that this barter helped to maintain peaceful relations among these populations. In the same context, small

^{20 &}quot;[...] Le continent, peuplé d'une infinité de nations barbares, destituées de tout secours, qui sont si dociles, et si bien disposées pour recevoir l'Evangile, qu'elles n'en attendent plus que la prédication, pour embrasser la religion chrétienne" (Pelleprat 1655:Epître dédicatoire:7).

^{21 &}quot;[...] Nous fûmes enfin obligés de quitter notre premier dessein d'aller à Coupenam, et de nous rendre à l'île de Saint-Vincent [...]" (Pelleprat 1655:II 18).

²² It is interesting to note that Pierre Pelleprat opposes the *Galibi people* to the Carib people whereas they are two groups issued from the same ethnical group. The *Galibi* people are the Mainland Carib and consider that they belong to the same ethnical group as the Island Carib.

^{23 &}quot;Dieu m'ayant affligé d'une indisposition qui ne diminuait point, je pris résolution d'aller aux Îles, pour changer d'air, et pour y trouver quelque remède [...]" (Pelleprat 1655:II 113).

²⁴ "Je n'attends pour ce voyage que les moyens d'y pouvoir passer, et un bon nombre de pères capables d'exécuter un si grand dessein [...]" (Pelleprat 1655:II 118).

^{25 &}quot;Nous ferons le plus tôt que nous pourrons deux séminaires en Terre Ferme [...]. C'est le meilleur moyen de convertir bientôt tout le pays, et pour gagner les pères, et les mères par les enfants (Pelleprat 1655:II 120).

^{26 &}quot;Voilà deux grandes portes ouvertes à l'Evangile, pourvu que les Français qu'on y enverra ne nous les ferment pas, comme d'autres ont fait en quelque partie de la Guyane, par les cruautés qu'ils ont exercées sur ces pauvres infidèles, et par une conduite désapprouvée de tout le monde [...] c'est pourquoi je conjure tous ceux qui voudront s'unir, et faire une compagnie, pour favoriser la conversion des sauvages, de faire un grand choix des personnes qui composeront la colonie qu'ils y enverront [...]" (Pelleprat 1655:II 112-113).

^{27 &}quot;Les sauvages qui me venaient visiter étaient chargés ordinairement de toute sorte de vivres dans l'espérance de nous les vendre pour des couteaux, des haches, de la rassade, et autres denrées dont ils avaient besoin" (Pelleprat 1655:II 90).

gifts offered by the missionaries played a similar role.²⁸ These exchanges helped to supply and to support the trade between the different Amerindian peoples from the Orinoco region (Dreyfus 1992:81).

According to his plan, Pelleprat did not intend to go back to the islands, but only to the continent. It does not defend the evangelization of the Carib but insists on that of the Indians who are more numerous in the Orinoco basin. Moreover, the reader is entitled, on reading the *Relation*, to think that the West Indian mission gets more results with black slaves, to whom Pierre Pelleprat grants a complete chapter. Indeed, they seem to have become the main target of the Jesuit proselytism in front of the defeat of the Carib evangelization, as shown by the slaughter of both Jesuits, which proves that the Indians did not respect the sanctity of the function of these two men.

It is not possible to determine if from 1651 onwards, Jesuits planned to travel to the mainland. For this, it would be necessary to study the *Lettrae indipetae* that he sent to his superior in order to obtain the authorization to leave for a distant mission.²⁹ Presumably, the missionary heard about the existence of Indian peoples in the literature of the sixteenth and seventeenth centuries. Pelleprat seems to have collected documents about the Carib and the continent as he quotes in the *Relation* Bartolomé de Las Casas's observations (Pelleprat 1655:II 54,74).

In his book, Pierre Pelleprat gives his vision of the people he met during his stay in the islands, and many details about their culture, their lifestyle and beliefs. His opinion does not differ from the European concept at that time. The missionary thus opposes the "noble savage" incarnated here by the *Galibis*, to the Carib, which are considered as more warlike Indians. In this perspective, how far can the *Relation* provide the historian with historical knowledge about the Indian peoples of the circum-Caribbean area? What credit can we grant to them?

The Relation: A testimony of ethnohistory?

A testimony of his own experience?

During his stay in the islands, Pelleprat rarely frequented the black and Carib populations. He mainly assumed curial charges upon the French settlers and indentured servants. However, in his book he dedicates one of the two parts to describing the Caribbean environment, but also to the mission of the fathers of the Society upon the Carib and black slaves, to which religious instruction has to be given. But we must ask ourselves how Pelleprat could collect all of the anecdotes he gives in the *Relation*, and deduce that proselytism has some beneficial effects on the black population and almost none on the Carib? Pelleprat's observations, both about the culture and the religious sensitivity of these people to Catholicism, are probably the result of indirect testimonies. They are certainly inspired by other missionaries' experiences, such as those of Jacques Bouton (1640).

^{28 &}quot;Le Père fut reçu dans un *carbet*, ou village de Galibis avec de grands témoignages d'affection, qui redoublèrent à la vue de quelques haches, serpes, couteaux ; et autres petits présents qu'il leur distribua [...]" (Pelleprat 1655: I 3).

²⁹ For this it would be necessary to study the *lettrae indipetae* he sent to his superior in order to get permission to leave for a distant mission. In this context, Giovanni Pizzorusso notes that in most cases, the *lettrae indipetae* of the missionary aspirants do not contain any specific destination, according to the instructions left by Ignatius of Loyola and the Franciscan tradition; Pizzorusso (1994:890).

Regarding the *Galibis*, we can notice that Pierre Pelleprat remained about five months and a half at Guarapiche. The Jesuit was then suffering from a disease that prevented him from travelling and visiting other Indian populations. It seems that he stayed in the *carbet* and that the natives went to meet him.³⁰ Under these circumstances it is difficult to imagine that he could attend all cultural events from the *carbet*, where he lived. On the other hand, it seems that he did not understand the meaning of certain practices, such as the wearing of a garment by the Carib while they were dancing with the *Galibis*, or the lack of women during these gatherings.³¹ He likened this to a sense of modesty, decency, while these behaviours were probably induced by the existence of a "taboo" among the different Indian communities. The Jesuit interpreted the attitude of the natives relating to his own European considerations.

Moreover, Pelleprat tries to attract the reader's attention to his personal experiences while emphasizing the dangers he had to face during the mission. His remarks are sometimes epic.³² After having described how the French escaped from an attack, Pelleprat stresses that the latter was nothing compared to the projects prepared by the Indians.³³ In reality, it is fairly easy to distinguish his actions and exploits from those which were accomplished by other missionaries, whose name he rarely mentions. He uses most of the time, the pronouns "I" and "we" for missions that he did not carry out at all. The identification of the sources which enabled the Jesuit to write his book remains crucial.

Pelleprat's sources

Every historical study must focus on determining the value and the authenticity of sources. The origin of the information that helped Pierre Pelleprat to write his book is very important, because we know that he did not have the opportunity to observe the indigenous people long enough to make the observations published in the *Relation*.

Pelleprat mentions that he inspired himself from notes of another missionary for his own writings. This concerns Father Mesland, who with Pelleprat made the trip to Guarapiche in 1653. He would have left him his "memories"³⁴ before leaving for the colony of St. Thomas, which would have allowed the author of the *Relation* to write his dictionary. A letter written by Mesland, on 23 September 1654, confirms that he wrote a grammar and a

^{30 &}quot;Dieu me présenta une occasion favorable pour apprendre leur langue, m'envoyant une enflure prodigieuse aux jambes, et aux pieds, qui m'arrêtait au village où je m'étais logé, et m'empêchait d'aller aux nations confédérées, et voisines [...]" (Pelleprat 1655:II 97).

^{31 &}quot;Je les ai vus souvent danser, et ai remarqué leur modestie en deux points. Le premier, que les Caraïbes, qui sont toujours nus, se couvraient d'un petit tablier sur le devant quand ils dansaient avec les Galibis, et le second que je n'ai jamais vu danser les femmes, ni les filles, mais les jeunes hommes seulement" (Pelleprat 1655: II 66).

^{32 &}quot;[...] nous aperçûmes six pirogues de Caraïbes qui nous allaient investir ; nous n'avions que huit ou dix hommes de défense dans notre barque , et ils étaient trois cents guerriers dans ces pirogues ; n'ayant pu nous surprendre ils nous poursuivirent et nous ne leur pouvions échapper [...] ; ils avaient amené toutes leurs voiles, leurs arcs étaient ajustés pour le combat, et nous les voyions déjà tous prêts à décocher sur nous leurs flèches empoisonnées [...]" (Pelleprat 1655:I 88).

^{33 &}quot;Nous avons su depuis, que le danger que nous avions couru, avait été plus grand que nous n'avions pensé : parce qu'ils avaient encore d'autres pirogues armés en guerre proches de nous, que nous ne pouvions pas découvrir" (Pelleprat 1655:I 89).

^{34 &}quot;Les mémoires du père Mesland me servirent beaucoup à ce dessein" (Pelleprat 1655:II 88).

dictionary during his first journey.³⁵ It also shows that Mesland probably had more time to gather information about the *Galibi* language than Pelleprat had, since the stay of the latter at Guarapiche was shorter.³⁶ Mesland left Guarapiche after a little less than one year, while Pelleprat stayed with the *Galibis* during five months and a half. What Pelleprat describes as being "memories" are in fact "a grammar and a dictionary". Mesland's writings must have been more consequential than Pelleprat says in the *Relation*. Moreover, his companion's help must have been useful because this young man was the companion of Father Mesland during his first mission. Therefore, Mesland apparently played a leading role in the acquisition by Pelleprat of much linguistic information. Through the *Relation*, we know the writings of Father Mesland, but until now they have remained undiscovered. For the moment, we cannot determine with certainty whether Pelleprat also inspired himself from Mesland's writings, to write chapters of the *Relation* which describe the Indians' culture, their way of life and beliefs. The discovery of these documents would be necessary to know this.

Pelleprat's originality

The originality of the *Relation* of Father Pierre Pelleprat, is that the author wishes to draw the reader's attention to the important perspectives that would give a mission on the continent. Even if he does not criticize directly the limited results obtained by the Jesuit mission in the Lesser Antilles, he describes a situation that cannot guarantee its success. For him, more resources for the present missionaries on the mainland, would enable to obtain more efficiency and therefore a greater success than the mission which was entrusted to the Society in the islands. Indeed, his purpose is to create absolutely no doubt in the reader's mind relating to the ability to lead a Jesuit apostolate mission, but his preference for the Indian people from the continent remains very perceptible.³⁷ He also expresses his desire to leave as soon as possible for a new mission in America, for which he has a very spe-

³⁵ Pelleprat 2009:Letter of Denys Mesland dated September 23, 1654 and addressed to Father Lecase:266 (according to the version translated into French by R. Ouellet, and preserved in the Archives of the Roman Society of Jesus under the following reference: ARSI, Gal. 106, folio 292-293): "[...] je fus envoyé à la Grenade pour instruire à la foi les sauvages de cette île, avec ordre de passer en Terre Ferme à la première commodité [...] où après avoir demeuré presque un an en apprenant leur langue et en composant une grammaire et un dictionnaire [...]".

³⁶ Pierre Pelleprat remained about five months and a half at Guarapiche. He arrived on August 9, 1653 and went away on January 22, 1654 (Pelleprat 1655:II 25; Pelleprat 1655:II 117).

³⁷ "Je prie tous ceux qui liront cette relation, de joindre leurs vœux aux nôtres, et de prier le maître de la moisson d'envoyer autant d'ouvriers qu'il en faut pour faire une si belle récolte. Mais nous allons voir de plus grandes nécessités, en Terre Ferme, qui méritent bien que chacun s'y intéresse plus particulièrement, afin que la divine Providence y pourvoit de la façon qu'elle jugera la plus avantageuse pour le salut de ces peuples innombrables, qui vivent sans connaissance de Dieu [...]" (Pelleprat 1655:I 92-93).

cific project. The latter takes as a model the one by Pacifique de Provins.³⁸ In fact, Pierre Pelleprat wanted to be closer to the *Galibis* and train an Amerindian clergy by creating seminars on the mainland.

However, even if the discourse of the missionary is oriented to convince the reader that a Jesuit mission would meet more success in the Orinoco basin than in the West Indies, his testimony concerning the Indians and their customs is a very rare one. We cannot determine to what extent the observations of Pelleprat come from personal experience, but they are in all cases the result of one by missionaries, and by French who were with the Indians. Consenquently, we believe that the *Relation* has a strong interest for the knowledge of these populations.

Concluding remarks

Pierre Pelleprat expressed a great interest in foreign missions by the end of his training with the Jesuits. In the *Relation*, he does not show a great interest for the black and Carib populations. These are not part of his apostolic project. This may be caused by the fact that he was with these populations for too short a period of time. The few contacts occurred by chance and he relied on the remarks and writings of other missionaries to embellish his comments on the culture and beliefs of these people. While the *Relation* of Father Pelleprat must be considered as an ethnohistoric source, it is first a propaganda work, one of its targets being to solicit political support which would enable him to have more money for a mission destined to the Indians of the Orinoco basin, and larger than that he performed with Denys Mesland. Pelleprat adapted his remarks in order to oppose the *Galibis* against the Carib; the former seem to correspond better to the image of the "good savage", ready to receive the "good message".

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Pacifique de Provins, or according to his real name René de L'Escale, was born in Rouen in 1588. He entered the Order of the Frères-Mineurs Capuchins in 1605. He founded a monastery in his birth-place in 1613. In 1622, his request to go on a mission to Constantinople was accepted. He made two trips, the first one takes place in 1622 and lasted one year, and the second one from 1626 to 1628. On his return, his action in the East was criticized. His *Relation du Voyage de Perse* was condemned by the Sorbonne in 1631. He asked to be sent again in a foreign mission but his superiors rather entrusted him the function of Capuchin mission attorney. He had the idea to create in Paris a seminar for foreign missions and to train an Indian clergy. For this project, the Capuchin benefited, from the support of the Lévis house and from the Father of Archange des Fossés, prefect of the Capuchin mission in Paris. In 1645, he sailed to Guadeloupe. His superiors gave him the task to move as soon as the opportunity arose, to the mainland. He ended the same year his *Brève Relation des Îles de l'Amérique*. He planned to establish a seminary for young boys. Named Capuchin prefect of the Lesser Antilles, he returned to France in 1646. The following year he was appointed prefect of Acadia, Dominica, Marie-Galante, St. Vincent and Grenada. In 1648, he made a second trip. He disappeared the same year, during an expedition to the mainland (Provins 1939:9-42).

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The first missionaries and the evangelization of black slaves in the Lesser Antilles in the early years of French colonization $(1625-1655)^1$

Eric Roulet

The evangelization of Indigenous people was one of the main objectives of the Catholic church in the Lesser Antilles during the seventeenth century. However, as soon as they arrived, the missionaries found themselves confronted with a complex colonial society with many different cultural groups. Thus, Capuchin and Dominican friars endeavoured to provide religious education to the African Slaves, who were already very numerous at the beginning of the French colonization. The first evangelization of the African slaves posed many problems and it will be criticized by the following generations of missionaries.

La evangelización de los Indígenas de las Antillas Menores fue uno de los mayores objetivos de la Iglesia Catolica durante el Siglo XVII. Sin embargo, al llegar en las islas los religiosos encuentran una sociedad colonial compleja con mutiples grupos culturales. Asi que, los frailes Capuchinos y Domenicanos endoctrinan a los esclavos Africanos los cuales ya estabas muy numerosos al iniciode la colonización Francesa de las islas. La evangelización inicial de los esclavos Africanos encuentra varias dificultades y fue criticado por los subsecuentes generaciones de religiosos que llegan.

La conversion des Indiens des Petites Antilles est un des buts majeurs de la mission aux Antilles au XVIIe siècle. Cependant, à peine arrivés, les missionnaires sont confrontés à la diversité de la société coloniale. Aussi, capucins et dominicains s'attachent à instruire et à encadrer chrétiennement les esclaves noirs, déjà très nombreux au début de la colonisation française. Cette première évangélisation des esclaves noirs n'est pas sans poser de nombreux problèmes et sera décriée par les générations suivantes de missionnaires, on lui reprochera notamment d'avoir été effectuée sommairement sans les conditions requises.

¹ Translated from French by Hugues Lebailly.

Introduction

In the seventeenth century, the catholic missionaries focused on the Amerindians living in the Lesser Antilles where the French had settled, St. Kitts, Martinique and Guadeloupe. Long remained in ignorance of the Christian faith, they had to be instructed to secure their salvation, and that task became the missionaries' main motivation for their departure to the islands. That is at least the story their instructions and relations tell. They were nonetheless confronted with the social and cultural diversity of a colonial society comprising Indians, Europeans and Africans, building as many different publics. But how far were they actually interested in black slaves? Some historiographic approaches based on the Dominicans Jean-Baptiste Du Tertre and Jean-Baptiste Labat's narratives tackle this issue but with regard to the late seventeenth century, when the number of slaves had increased dramatically with the development of the sugar industry, implying that the concern for a religious supervision of the slaves was not regarded until then as a major aim, nor did it amount to a significant part of the missionaries' activities. Marcel Chatillon yet pointed out, in 1984, that the Jesuits demonstrated an interest in the black slaves as early as the late 1650s. But the only evidence he provides are letters written by Jean Mongin in the 1680s, thus repeating and reinforcing the classical view when the opening of new perspectives could be expected (Chatillon 1984:3,19). Should this be seen as a consequence of the significance granted by historians to Jesuit sources and the abundant correspondence the order devoted to that topic (among many others), to the point of letting their readers think it was the only one to pay attention to black slaves? It is true that the early missionaries wrote relatively little and did not keep up regular correspondences (but perhaps for Capuchin Pacifique de Provins). The significance granted to the narratives and actions of Dominican Raymond Breton, who expressed the view that "instructing the savages [i.e. the Amerindians] ought to be the greatest of their cares" (Breton 1978a:118) may also have biased the historians' approach to that issue in that direction (cf. Dupuis 1652:1-2). It anyway provided a partial and inaccurate view of the reality of the friars' missionary work. Close examination of the letters and narratives written by the first waves of missionaries, including Pierre Pélican, Raymond Breton, Jacques Bouton and the Anonyme of Saint-Christophe, suggests that the black slaves attracted their attention at a much earlier date than is usually acknowledged.² What sense did they get of them, and did they consider evangelizing them during the first decades of French colonization? Did they implement a specific strategy? Did that lead them to reconsider their mission in the West Indies?

The black slaves as a missionary stake

If the missionaries turned to the black slaves, it was on the one hand because there were many of them, and on the other because they deemed them fit for indoctrination. They built a major group in the various French islands as early as the years 1635-1640. Dominican Pierre Pélican, who headed the first mission sent by his order in 1635, was impressed by their number, at a time when the French had but recently settled on the islands. Another

² The only missionary relation from that time which took little heed of the slaves was that written by Capuchin Pacifique de Provins in 1645. He mentions the slaves in Guadeloupe, but merely to stress that they were not numerous enough to allow the development of the island (Pacifique de Provins 1939:20,27).

member of that mission, Raymond Breton, similarly related the presence of many black people there in the 1630s. Jesuit Jacques Bouton described them as quite numerous in Martinique in 1639 (Breton 1978a:93; Bouton 1640:99; Pélican to Carré 1635).

They were the victims of the African slave trade. Among the many slave ships that plied the islands, Captain Drouant's can be quoted as having brought sixty black people of both sexes to the company's landlords in 1643, coming back the following year with another batch for the benefit of governor Charles Houël. Still in 1643, an English ship loaded with slaves landed in Guadeloupe. Houël purchased them all and distributed them among his officers. He even sold two to the Dominicans. In 1646, 60 black people were forwarded to Houël (Breton 1978a:120-121,124). Generally speaking, governors owned many slaves.³ The significance of the trafficking was thus blatant. But how numerous were they exactly? Chroniclers limited themselves to vague considerations and did not provide any reliable assessment. Yet, there were obviously several hundreds of them. In the mid 1650s, Raymond Breton attempted a kind of census. He deemed there were twelve thousand French people and three thousand black slaves in Guadeloupe in 1654. Jesuit Pierre Pelleprat counted between twelve and thirteen thousand black slaves in the islands in 1655, as many as French people then. In 1658, Protestant Charles de Rochefort shared that impression that black people and Indians were as numerous as whites (Breton 1978b:158; Pelleprat 1655:55; Pelleprat to Nickel 1655; Rochefort 1658:17).

The missionaries entertained no doubt that the black slaves had to be evangelized, as everyone was to be introduced to the Christian doctrine. All the religious orders present in the French West Indies (Capuchins, Dominicans, Jesuits and Carmelites) regarded evangelizing the slaves as a major task set for them and got down to it. Jacques Bouton stressed how lucky they were to be in French hands rather than those of other nations. Evangelization was a concern which honoured Catholic countries, whereas the English and Dutch did not worry about such trifles (Bouton 1640:102; Chatillon 1984:135).

The missionaries thus converted many black slaves. While staying in St. Kitts, Pierre Pelican pointed out the good work carried out by the Capuchins who had arrived there with Pierre Belain d'Esnambuc as early as 1633. Raymond Breton similarly praised their action. In the 1640s, the Dominicans pursued the Capuchins' efforts (Breton 1978a:87; Pélican to Carré 1635).

The missionaries were yet but a handful and focused on specific publics. They took heed of the slaves attached to the settlers whose estates they visited. They did not go in search of them, but only worked with those available in their close environment. They no-tably instructed and baptized the governors' and the leading French families' slaves. They gave their support to Mademoiselle de L'Olive, the governor of Guadeloupe's wife who, concerned with the religious instruction of young black slaves, taught them catechism in 1635. In 1645, Dominican Dominique de Saint Gilles baptized 55 or 60 black slaves from the governor's household. Around 1646-1649, Carmelite Maurile de Saint-Michel baptized some female slaves belonging to Madame de la Vernade, as they were with child, she felt compelled to explain. He did not want to set them at risk should their delivery have gone wrong (Breton 1978a:87,121; Maurile de Saint Michel 1652:80).

³ The governor of Martinique, Jacques Dyel Du Parquet, had a dwelling at Carbet where numerous slaves worked under the Jesuits' supervision (Rochefort 1658:15). The French governor of St. Kitts, Poincy, was in no way behind. He had about 600 or 700 slaves working for him about 1650 (Pelleprat 1655:55).

It should be born in mind that not all Africans were perceived in the same way by the missionaries who, for instance, distrusted those from the Cape Verde Islands as they were Muslims (Du Tertre 1654:474-475). Over time, they were nonetheless able to get in touch with the whole slave population. The chroniclers indeed pointed out the large number of black converts around 1645-1655. Raymond Breton wrote in 1654 that almost all the slaves in Guadeloupe had been instructed and baptized, and that ever since, they had no longer been tormented and afflicted by the demons as they used to be before their christening. Pierre Pelleprat noted in1655 that the converted black slaves were as numerous as the French and had to be dealt with (Breton 1978b:158; Pelleprat to Nickel 1655).

It therefore seems that the early missionaries had got so much involved in their work with black slaves as to refocus their mission at quite an early date. It must be acknowledged that their original public, the Indians, was quite sparse. When they had not been driven out of their islands as in St. Kitts and Guadeloupe, they were restricted to a limited part of the island as in Martinique and though they entertained relationships with the French, they did not live with them.⁴ To instruct them, the missionaries had to travel to the islands where they had taken shelter on the French's very arrival, Dominica and St-Vincent. Some friars did launch on such a scheme. Raymond Breton thus spent many years in Dominica. Capuchin Alexis d'Auxerre kept him company for some time in 1646. Later, Jesuits François Gueymu and Guillaume Haubergeon settled on St-Vincent, at the risk of their lives (Breton 1978b:158). But it must be acknowledged that very few indeed chose to lead such a life. Slaves offered a more comfortable alternative to the missionaries who balked at venturing on the Caribbean Sea and facing, further to the hardships of navigation and of life among the Indians, the many tensions between the communities. In the 1650s, many missionaries despaired of the Indians who no longer appeared as a significant public. Dominican André Chevillard asserted in 1659 that black people were "more talkative and intelligent" than the Indians then held in low esteem, as the former lived next to the Europeans (Chevillard 1973:145).

The missionary method

The early missionaries do not seem to have resorted to any specific method in order to train the black slaves in religious matters. The foremost matter was to familiarize them with Christianity by teaching them and asking them to recite their prayers as well as to take part in religious ceremonies. The first Dominicans thus had the litanies to the Virgin sung and the rosary told aloud so that black people could learn them (Breton 1978a:87). They taught them the most significant prayers such as the *Pater Noster* and the *Ave Maria* as well as the Ten Commandments. As Breton is known to have translated all three of them into the Indians' native language in the 1640s (Breton 1978a:125), it is most likely that they were also taught to the slaves who must have been expected to recite them to the Dominicans. In his 1655 relation, Pelleprat mentioned teaching black people the *Pater Noster*, the *Ave Maria*, the *Credo* and the Ten Commandments (Pelleprat 1655:58). Pélican was bent on familiarizing them with devotional objects and gave them beads in 1635 (Pélican to Carré

⁴ The Anonyme de Saint-Christophe relates that, as early as 1626, Indians were expelled from the island by the French (*Anonyme de Saint-Christophe* 1932:10). They were expelled from Guadeloupe in the 1630s. In Martinique, the situation was different: the Indians were established in one part of the island (Breton 1978a:84, 1978b:132; Pacifique de Provins 1939:17).

1635). The crosses erected by the missionaries when the French took possession of the islands may have acted not only as signals of the imposition of Christianity and the values of the new colonial society on the territory, but also as meeting places for the new Christians, next to churches and chapels, then quite plain buildings. The ceremonies and specifically the delivery of the sacraments took place in the churches, and much was expected fom the slaves' taking part in religious feasts (Pelleprat 1655:58).

Yet the missionaries did not deliver all the sacraments to the slaves, but only baptism and marriage. The Capuchins and Dominicans felt no pangs about christening black people, with the former opening the way. In 1635, Pélican emphasized the active part they had played. Early in 1647, the Capuchins, who had found shelter with governor Houël in Guadeloupe after being expulsed from St. Kitts, baptized 30 or 35 black people (Breton 1978a:125; Pélican to Carré 1635). The Dominicans followed suit. Raymond Breton testified to the numerous baptisms delivered by the fathers of his order in 1641, pointing out that Nicolas de la Marre "baptized many black people". Jean Dujean baptized black adults, presumably in the Sainte-Marie parish he was ministering to, together with some Indian children. On Whitsuntide Eve 1646 or 1647, Armand de la Paix baptized 22 black men and women (Breton 1978a:123; Breton 1978b:142, 144, 148).

Many of those black slaves who had been brought to the West Indies on Portuguese ships had already been baptized prior to their getting on board. It must be assumed that the missionaries found some kind of fault with this first christening, so that they felt compelled to deliver one of their own, but no explicit accounting for that decision by the early missionaries has reached us.⁵ Their writings do not quote any prerequisites for being baptized, merely mentioning the fact that black people had been instructed, without providing further information about the nature of that instruction. Things must have proceeded quite fast, at least in the early years. But the Dominicans' demands quickly grew, and the Jesuits' even faster. Raymond Breton stressed the fact that black people had to be instructed before they were christened (Breton 1978a:121). In the 1650s, the Jesuits defined the conditions required to be baptized and expounded their demands to potential recipients of the sacrament. Baptism was only delivered on four occasions in the year, with due solemnity (Pelleprat 1655:57). Pelleprat (1655:62), for instance, denied baptism to a slave he deemed poorly instructed. The Jesuits were not the only ones to put forward such high standards. Carmelite Maurile de Saint-Michel (1652:80) baptized slaves but in cases of absolute necessity, with instruction as a prerequisite.

This rise in demands can partly be explained by the progress of evangelization: once the basics of Christianity had been provided, further instruction could follow. But it was also connected with the way various orders perceived their mission. As true Minorites, the Capuchins baptized black people and Indians so that they became part of the Church. Capuchin Pacifique de Provins thus prided himself on converting 140 Indians whereas Breton baptized but four Indians over the almost twenty years he stayed in the islands, and that only because they were at death's door (de Provins to Spada 1646). This does not mean that the Capuchins did not care about indoctrination, but the latter could be more basic and was not viewed as a prerequisite. They had yet another aim in mind: establishing the

⁵ Later, in 1682, Jesuit Mongin asserted that the baptisms delivered by uneducated Spaniards could not be deemed valid (*Lettre de J. Mongin à une personne de condition du Languedoc*, St. Kitts, May 1682, in Chatillon 1984:86). Several narratives thus mention the slave trade carried on by the Portuguese and the Spanish in the West Indies (Dupuis 1652:99; Rochefort 1658:319).

European model in the islands, the sheer number of conversions leaving its mark on the cultural and religious scene and turning baptism into an imperative within this new society. But what kind of religious instruction was implied? The Dominicans' and Jesuits' assertions are open to discussion. What did it really amount to? What did they actually teach? It could consist in the learning and recitation of a few prayers and of how to make the sign of the cross as witnessed in other missions at the time, quite basic requirements.

Baptising black slaves seems to have cast doubts on their status within the colonial society. Could a Christian be enslaved to another Christian? Where did a converted slave fit into the social order? If faith can be lent to Carmelite Maurile de Saint-Michel, the Capuchins would thus have advocated on St. Kitts that a Christian could no longer be held in slavery, and that "the children of Christian black slaves had to be free and emancipated from slavery once they were christened" (Maurile de Saint Michel 1652:80-81). Bearing in mind the major part played by slaves in the development of that island and governor Poincy's own interest in such matters, it is no wonder such a discourse led to their expulsion from the island. Yet, rather oddly, no other chronicler mentioned that debate. There is however no ground for questioning the Carmelite's testimony as, on the one hand, he was indeed present in 1646, and on the other, some clues in the relation of the Anonyme de Saint-Christophe point in the same direction, stating that black women who had been baptized and given as wives to whites were thereby emancipated (Anonyme de Saint-Christophe 1932:16). According to him, those baptisms met other requirements, favouring unions and securing the populating of the colony. Further to the oddity of that assertion which could be found in no other chronicler's writings, the low impact of such a measure must be stressed, as black women were and remained far too scarce to meet that need.

A belief in such possible outcomes from baptizing black slaves does not seem to have been shared by the other religious orders, who regarded them as intrinsically servile. Baptism could not alter that. Carmelite Maurile de Saint-Michel likened them to Cham's sons. Pelleprat wrote "they were designed for servitude". He related that a black man would rather be a slave among the French than free among his people as he had discovered God (Maurile de Saint Michel 1652:84; Pelleprat 1655:56). His demonstration was thus built on dissociating social condition from the religious sphere. The spiritual dimension was indeed the most significant one, but it did not alter material conditions. The debate was either waved away, or legitimated by the Biblical tradition or by African practices, as Bouton did .⁶ Dominican Jean-Baptiste Du Tertre was the only one to stress in 1654 that Christianity promoted the freedom of its children, as it "rejects and abhors slavery" (Du Tertre 1654:473).

The problems met by the missionaries

Beyond the considerations on the approach to the mission peculiar to each order, if not to each individual, and closely connected with chronology, the missionaries sounded quite doubtful about the impact of the evangelization they achieved. If they did not question it, they nonetheless stressed its limitations and difficulties. The Jesuits proved most critical of

^{6 &}quot;That miserable nation seems to have been created but for servitude and slavery, including in their own country where most of them are enslaved to the king or other potentates" [original: Cette misérable nation semble n'estre au monde que pour la servitude et esclavage, et dans leur pays mesme ils sont la plus part esclaves du Roy ou d'autres] (Bouton 1640:101).

this early evangelization. In 1640, Jacques Bouton gave vent to two kinds of criticisms. On the one hand, he pointed out that the baptisms might have been slightly hasty and their black recipients hardly versed in the faith they were supposed to adhere to. On the other, he blamed the difficulties of evangelization on the black slaves' very nature, "their showing such indifference to religious matters" (Bouton 1640:102). According to him, they were fickle in their faith, and would promptly fall back into their old customs should they return to their native country. Such judgments were often passed on newly converted Christians, expressing a major fear not to have been able to evangelize and control the population. He nonetheless immediately moderated his utterance by emphasizing the close watch the slaves were under, as they lived among the settlers .⁷ Bouton noted that black people knew but very little, had coarse and often dumb minds, and were too limited to be able to learn to read and write. He nonetheless qualified his harsh judgment by acknowledging having also met a few devout black people (Bouton 1640:103). He prudently urged not to hasten things, confident that "patching all that up will not be easy, but little by little we shall get through and instruct them..." (Bouton 1640:100). The tone was still confident, deliberately optimistic, but progress was slow indeed, and fifteen years later, Pelleprat noted: "We do what we can, the rest is up to God" (Pelleprat 1655:53). This does not mean the friars had lost all faith in their mission, but this early evangelization did not satisfy them even if they put up with it.

Other testimonies sounded more optimistic. Du Tertre (1654:475) wrote that once black people had been instructed, "they are most confident in their faith, very good Christians". Protestant Charles de Rochefort described black people as rather submissive and observing all the requirements set to them: "some negroes fast throughout Lent, as well as on all the other days they are told to" (Rochefort 1658:321).

One of the obstacles that made black people's indoctrination difficult was verbal communication, however rarely mentioned or hastily dismissed it might be by missionaries who systematically insisted that they eventually managed to make themselves understood. This difficulty was nonetheless real, and rooted both in the wide range of languages spoken by the Africans and on the hard work it was to teach them French. In what language were the missionaries to address black slaves? All chroniclers stressed their diverse origins : Cape Verde, Guinea, Angola as well as the very different idioms they consequently spoke. They definitely did not build a homogeneous group from a linguistic and cultural point of view. The slaves were very soon provided with smatterings of French but in 1639, Jacques Bouton emphasized that they knew no more than a few words "without the articles and other particles that we affix to them" (Bouton 1640:100). Father Dominique de Saint-Gilles painstakingly instructed governor Houël's slaves with a view to baptizing them, though he knew no more of their language than they did of French (Breton 1978a:121). Therefore, in order to stress their words, some missionaries resorted to numerous gestures in the hope of making themselves better understood (Pelleprat 1655:53).

Did the situation evolve over time? Maurile de Saint-Michel writes that in his days, many slaves could understand French and even speak it fairly well (Maurile de Saint Michel 1652:60). Pelleprat (1655:53) states that teaching French had become a priority. Indoctrination could only be achieved afterwards. But Jesuit Jean Mongin sounded more moderate in 1682, stating that black people had learnt "some French jargon" the mis-

⁷ Jesuit Jean Mongin repeats a similar analysis in 1682 (*Lettre de J. Mongin à un gentilhomme du Languedoc*, 1682, in Chatillon 1984:134).

sionaries were familiar with and resorted to in order to communicate with them. It must have been some kind of easily learnt gibberish (Chantillon 1984:134). That the slaves had quickly acquired from their masters some smatterings of French sounds quite obvious, but it must have been indeed overoptimistic to imagine they could perceive all the subtleties of the language, and of the Roman Catholic doctrine.

That language issue was in no way bound to become less acute, bearing in mind the transatlantic slave trade system and the high mortality rate among slaves. It constantly reemerged and any kind of impregnation of the newcomers by their environment could hardly be relied on. None but the domestic slaves living in the French families' homes actually learnt the language. That might have been the reason why the missionaries focused most of their efforts on them. Under such circumstances, interpreters remained indispensable, though their level of proficiency was often too low to guarantee accurate translations. Pelleprat reported that they understood but about half of what they were told and could not find words in their own language to express the notions the missionaries were trying to explain (Pelleprat 1655:53).

The latter do not seem to have evinced any will better to know African languages as some did with regard to those of the Indians living both on the islands and on the mainland. Pelleprat's narrative merely mentions the fact that some prayers had been translated into the slaves' languages, but nothing more (Pelleprat 1655:58).8 Does that imply a refocusing of the mission towards black people? The friars usually did not show much interest for African cultures, merely passing a few general judgments on black people's physical appearance and temper. In such a context, what could the slaves actually make of what they were taught? Though the missionaries had misgivings about the scope and depth of their understanding of Christian doctrine and what it implied in terms of daily life, they urged them to contract a Christian marriage. But how could one live out of wedlock in the seventeenth century? That necessity was reasserted by Anonyme de Saint-Christophe. Jacques Bouton (1640:100) deplores the fact that this sacrament was often delivered without all the required ceremonial. The slaves were most likely not to understand the stakes of Christian marriage, such as monogamy and the indissolubility of the bond it implied. Pelleprat thus records: "a nigger, having surprised his wife committing adultery, on the island of St. Kitts, told his master about it and asked him to give him another wife. The master answered him that, as a Christian, he was not allowed to marry another woman" (Pelleprat 1655:66). Though the protagonist of that story accepted to submit himself to his fate, concluding: "I Christian, I then suffer that!", it was indeed that indissoluble nature of the bond that was least understood and often ill accepted.

The missionaries would however deliver them neither the Holy Communion nor the sacrament of penance. Jacques Bouton (1640:100) justifies their exclusion from the Eucharist on the ground of their ignorance of the mystery of faith. Maurile de Saint-Michel reportes having delivered penance and the Eucharist to a slave only because he was ill and he feared he would die. However, the unfortunate, having confessed his sins, was panic-stricken when he saw the friar come close to him to give him the Holy Sacrament as he had heard the dying were finished off by the natives and thought he was going to be taken to his grave (Maurile de Saint Michel 1652:80). The only two sacraments the missionaries delivered profusely were baptism and marriage, the others being dispensed parsimoniously if at all.

⁸ Pelleprat 1655:58. The sentence is nonetheless ambiguous as Pelleprat was tackling the evangelization of both black people and Indians.

The black slaves' understanding of Christianity was basic, if not nil. Their perception of it raises many questions. Why did they become converts? And did they indeed have their say about it? Many slaves were baptized without at first knowing exactly what was taking place, all the more so as nobody was addressing them in their own language. They had no power to refuse. It was actually up to their master's attitude.⁹ As Pelleprat reports, most were baptized out of necessity, a few only out of devotion (Pelleprat 1655:64). A number of slaves may have regarded their Christian baptism as a way to protect themselves from sorcerers and become immune to the spells they could cast. Christianity thus inscribed itself within a magical quest for protection. Pelleprat (1655:62) relates that a slave had begged him to christen him so that he could be released from the devil that was plaguing him.

Jean-Baptiste Du Tertre optimistically assertes that black people had quite quickly fitted into the mould of Christianity. In 1654, he relates how those on St. Kitts danced to the sound of drums, in the woods, after the religious services on Sundays and church holidays. Charles de Rochefort was nevertheless very suspicious of those dances, though they seemed to fit into a Christian context, and he wrote in 1658 that the authorities had enough misgivings about them to ban their taking place at night and require that the slaves who intended to take part in them should warn their masters beforehand (Du Tertre 1654:476; Rochefort 1658:322-323). They indeed could as well be regarded as African rituals and ceremonies escaping any kind of control.

The missionaries' relations hardly mention any traditions observed or rituals performed by black people, most likely because observers seldom attended or understood them, as some must have taken place indeed. In the early eighteenth century, Dominican Jean-Baptiste Labat reported how a black slave asked him to return him a small bag he had taken from him during his christening as he thought it was endowed with divinatory powers. He also related how another incensed an idol at a sick fellow countryman's bedside in order to know whether he was going to recover or not (Labat 1993:113, 117).

Conclusion

From the very outset of the colonization of the Lesser Antilles by the French, the Capuchin and Dominican missionaries, noticing the large number of black slaves brought there from Africa, felt concerned about their religious supervision. They notably delivered them the sacrament of baptism. The slaves soon seemed to have become the friars' main audience, together with the settlers, though they kept asserting in their narratives and letters that their major concern was the conversion of the Indians. This distortion between reality and intention is certainly what has led historians to grant more significance to their work with the natives and pay little attention to their attitude towards the slaves at that time. Unless the missionaries had found that aspect of their mission unworthy, or at least less worthy of them. Though many black slaves were baptized and evangelized, a degree of circumspection must be observed with regard to the reality of their conversion. Their understanding of the Christian doctrine was basic and their instruction was hampered by the major issue

⁹ The 1685 Code noir made black people's conversion compulsory: "all the slaves present in our islands will be christened and instructed in the catholic, apostolic and Roman religion" [original: tous les esclaves qui seront dans nos îles seront baptisés et instruits dans la religion catholique, apostolique et romaine] (Salas-Molins 1987: 94).

of language. It was but in the late seventeenth century that the converted slaves were to be more efficiently taken in charge. But the evangelization of the 1630s and 1640s was nonetheless a major stage in that process.

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Settlement

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LIVING ISLANDS OF THE CARIBBEAN A view of relative sea level change from the water's edge

Jago Cooper and Richard Boothroyd

In this paper we explore the nature and extent of relative sea level change in the pre-Columbian Caribbean. Comparative perspectives from different spatial and temporal scales will provide an overview of how pre-Columbian populations would have faced radically changing landscapes and local environments in the different islands of the Caribbean. Using a GIS platform to combine regional, national and local datasets; bathymetric and digital elevation models are correlated with relative sea level data from the past 8000 years to provide models of changing islandscapes through time. Archaeological site locations are then re-examined in light of alternative perspectives of their contemporaneous islandscape context. The relative validity of our archaeological datasets will also be considered in light of the differential inundation of pre-Columbian coastal areas. Broader points of interest raised through the analysis of coarse-grained regional data are then examined in more detail through the examination of fine-grained local paleoenvironmental and archaeological evidence taken from case study areas. This paper will provide some interesting perspectives on the way in which islands, as well as past human communities, change throughout their lifetimes. An enhanced picture of these Caribbean islandscapes is enabled through an improved understanding of the punctuated equilibrium at which change occurs. It is hoped that this work will help to provide an improved canvas upon which to paint the developing picture of pre-Columbian lifeways in the Caribbean.

En este papel exploramos el carácter y alcance de los cambios en el nivel relativo del mar en el Caribe precolombino. La comparación del análisis de diferentes escalas espaciales y temporales suministrará una visión general de cómo las poblaciones precolombinas afrontaron cambios dramáticos en los entornos medioambientales locales de varias islas caribeñas. Modelos de elevación digital y batimétricos son correlacionados con información sobre nivel relativo del mar durante los últimos 8000 años a través de una plataforma SIG que combina datos locales, regionales y nacionales con el fin de crear reconstrucciones de los cambios en el paisaje de la región. Este artículo proveerá nuevas perspectivas sobre la forma en que las islas, así como las comunidades humanas precolombinas, cambiaron durante su existencia. Una imagen mejorada del paisaje insular caribeño es proporcionada a través de un entendimiento más profundo del equilibrio puntuado que produjó los cambios. Esperamos que este trabajo ayude a construir un renovado lienzo sobre el cual plasmar las formas de vida precolombinas en el Caribe.

Dans cet papier, nous explorons la nature et l'étendue de l'évolution du niveau de la mer dans la Caraïbe à l'époque précolombienne. Les perspectives comparatives provenant de différentes échelles spatiales et temporelles vont fournir une vue d'ensemble de la manière dont les populations précolombiennes ont pu faire face à des changements radicaux de paysage et d'environnement locaux dans les différentes îles de la Caraïbe. Grâce à une plateforme GIS pour combiner les séries de base de données régionales, nationales et locales, les modèles d'élévation bathymétriques et de relief sont corrélés aux données du niveau de la mer relatives aux 8000 dernières années, afin de reconstruire l'évolution temporelle des paysages. Cet article apportera quelques perspectives intéressantes sur la façon dont les iles, de même que les communautés humaines du passé, peuvent évoluer au cours de leur vie. Une image plus nette de ces paysages insulaires caribéens est rendu possible par une meilleure compréhension de l'équilibre ponctué auquel arrive le changement. Nous espérons que ce travail aidera à fournir une toile de qualité plus raffinée sur laquelle peindre un tableau de l'évolution des modes de vie des populations précolombiennes dans la Caraïbe.

Introduction

The islands of the Caribbean are not static landforms frozen in time, however, this is often how they are portrayed by the use of modern maps to illustrate prehistoric events such as island colonization or the distribution of pre-Columbian sites. Rather the islands today represent a modern day snapshot of an epic struggle between land and water that has seen the islands grow and shrink over time with entire islands appearing and disappearing at different points in the region's past. This dynamic process needs to be considered with care as it fundamentally changes how the geographical context of the Caribbean is perceived. The term living islands has been used in the title of this chapter to highlight the changing biography of each island in the Caribbean. In this chapter we develop a picture of living islands that have been transformed throughout the Holocene right up to the modern day. This picture contradicts the deep time perspectives of geological time with which changing landforms are often associated. From an archaeological perspective this is clearly important, as the islands that greeted the first island colonizers would have been distinctly different from the islands we see today. Therefore understanding the processes behind these living islands and how relative sea level change affected pre-Columbian populations is an important topic to explore in more detail. Fortunately the recent increase in paleoenvironmental data in the Caribbean combined with developments in global digital mapping systems can facilitate an improved understanding of relative sea level change. This improved understanding can also facilitate a wider discussion of the impacts these changes may have had on pre-Columbian coastal communities living in the Caribbean. Another important consideration that will be discussed in this chapter is the extent to which relative sea level change has affected the sample of recovered pre-Columbian archaeology in the Caribbean. Is it possible that relative sea level rise has biased our understanding of site distribution patterns and pre-Columbian activities in the Caribbean?

This paper will utilize regional bathymetric datasets and regional relative sea level curves to provide an improved understanding of how the islands of the Caribbean have changed throughout the Holocene. Questions of island specific patterns of inundations will be explored in Cuba, where the impacts of relative sea level change can be situated within a broad temporal framework to examine how the Cuban island archipelago has transformed over time. This improved island biography for Cuba can then be used to discuss pre-Columbian site distribution patterns to evaluate whether relative sea level change has affected the national sample of archaeological data and thus influenced past interpretations of pre-Columbian activity. A local case study will then be explored using higher
resolution bathymetric and relative sea level data, combined with recently acquired local paleoenvironmental and site specific archaeological data, to reconstruct an improved picture of the impacts of relative sea level change and the effects this would have had on local pre-Columbian populations.

Hydrospheric context of the Caribbean

The Caribbean Sea is not an isolated body of water on the edge of the North Atlantic but is in fact one of the driving forces behind the thermohaline systems of the Atlantic Ocean that drive ocean currents and influence global climate systems. The warm shallow waters of the Caribbean Sea are the source of strong ocean currents that helps drive the circulation of the North Atlantic. This hemispheric connection of the Caribbean Sea to the North Atlantic is important as climatic and hydrospheric changes in the North Atlantic can have profound impacts on the Caribbean. There has been extensive research into the paleodynamics of the North Atlantic hydrosphere, inspired by the importance of this region in controlling the climate of the wider region. This data has important consequences for the Caribbean as it can facilitate a much more detailed understanding of the wider paleoclimatic context for the Caribbean Sea and highlight the abrupt impacts of hemispheric events on the Caribbean (Bigg *et al.* 2003; Andrews 1998). This chapter is focused on relative sea level change and in this regard the detailed reconstructions of the impacts of cryospheric instability on eustatic sea level change in the North Atlantic has profound consequences for the Caribbean.

A good example to illustrate the importance of this hydrospheric context is the Lake Agassiz outburst ca. 8200 BP. This paleolake, covering some 400,000 square kilometres of northern Canada, was formed by the melting Arctic ice sheets during the early Holocene (Clarke et al. 2003). However, shortly after the Holocene climatic optimum an ice dam that contained this lake on the North American continent was breached creating an outburst of trillions of litres of cold water into the North Atlantic (Lajeunesse and St-Onge 2008:185). Reconstructions of this impact in Europe have shown how this outburst helped to sever the United Kingdom from mainland Europe and permanently flood large areas of land throughout Western Europe. In the Caribbean we can begin to model similar impacts as sea levels rose by over one metre in as little as a year or two from the initial outburst. The date of this outburst is often considered to pre-date human occupation of the Caribbean. However, it is interesting to consider how such an abrupt and high impact event may have impacted upon the Caribbean islandscape. Such an event also highlights the need for improved datasets to model these impacts as speculation of the potential loss of evidence of pre-Columbian occupation of the Caribbean this event may have caused, or how this outburst would have radically changed ocean currents in the region and thus affected the potential for island colonization are interesting but require much more robust frameworks for their discussion. However, as mentioned above this case study highlights how important it is to situate the study of relative sea level change in the Caribbean within the wider hydrospheric context of the North Atlantic. It also shows that relative sea level changes in the Caribbean can be dramatic and abrupt, therefore a detailed picture of the impacts such changes might have had need to be explored in more detail.

Caribbean relative sea level rise

The Caribbean has seen some major changes in relative sea levels throughout the Holocene. The cause of this relative sea level change was direct eustatic sea level rises in the early to mid Holocene and indirect isostatic relative sea level rises in the mid to late Holocene. Regional averages suggest a relative sea level rise of over 30 metres during the past 12,000 years. Pre-Columbian colonization of the Caribbean has not been clearly defined temporally or spatially but if a date of ca. 6000 BP, in lieu of potentially earlier dates from ongoing research, is given for island colonization then there has been over five metres of sea level rise during the established pre-Columbian occupation of the islands (Wilson 1999; Tabio and Rey 1979; Kozlowski 1974).

Sea level data comes predominantly from paleocoastline reconstruction using plant (mangrove) or animal (coral) proxy data combined with geomorphological and sedimentary analyses (Woodroffe and Grindrod 1991). There has been much debate surrounding different methods for reconstructing past sea levels and therefore these figures have to be understood within the context of margins of error (Blanchon 2005). In addition regional models combine and average local datasets obscuring local variation in sea level dynamics (Toscano and Macintyre 2003). It is important to highlight these local variations as tectonic movement, coastal erosion and sedimentation processes can greatly affect relative sea level change in local areas (Hendry 1993; Ramcharan 2004; Bourrouilh-Le Jan 2007). However, a regional picture of long-term and constant relative sea level rises throughout the pre-Columbian occupation of the Caribbean provides an interesting backdrop against which to re-consider the way in which different islands may have been affected (McKee *et al.* 2007; Milne *et al.* 2004; Torrescano and Islebe 2006; Maul 1993). In order to achieve this improved picture it is necessary to build a framework for modelling the impacts of relative sea level rise on the different islands of the Caribbean.

Data acquisition and modelling methods

In order to model relative sea level change in the Caribbean a GIS platform was used to combine bathymetric, terrain elevation, modern shoreline and archaeological data. The large geographical area of the Caribbean requires a comparatively large data set for manipulation. The regional combined bathymetric and digital elevation data used came from the ETOPO-1 dataset from the United States of America National Oceanic and Atmospheric Administration's National Geophysical Data Centre (Amante and Eakins 2009). This data set has a 1-arc minute resolution for a grid; latitude 33° by 8° North and longitude 100° by 55° West. This data, including 4,054,201 elevation and bathymetric data points, was imported as binary point data into ArcGIS and interpolated using the hydrographic based topogrid extension. Modern shoreline data representing high water lines were taken from the National Geospatial-Intelligence Agency global shoreline database at a resolution of 1:75000 and used to identify modern island outlines for the Caribbean Islands and neighbouring continental mainland (National Geospatial-Intelligence Agency 2010).

The local case study area bathymetric data were generated by hand digitizing a local navigation chart with bathymetric point data at ca. 100 m intervals (Instituto Cubano de Hidrografía 1996) (Figure 1). These data, including some 800 bathymetric data points, were imported into ArcGIS. Archaeological data including settlement locations and site classifications were taken from previous research on national site databases carried out by



Figure 1 Map showing location of case study area in Cuba and location of archaeological sites, paleoenvironmental cores and bathymetric data points.

Cooper (Cooper 2007, 2010). All of these datasets were reclassified and reprojected in WGS UTM 17n using spatial reprojection extensions in ArcGIS to facilitate comparative analysis.

Relative sea level data were taken from a combined regional data curve by Peros adapted and updated from Toscano and Macintyre (Peros 2005; Toscano and Macintyre 2003). Local relative sea level data were taken from paleoenvironmental reconstructions carried out by Peros based on transects of paleoenvironmental cores taken through the case study area (Figure 1) (Peros *et al.* 2007). Models of changing sea levels were visually represented through shapefile table reclassification and changing data symbology fields.

As with all models, their validity is only as good as the data resolution upon which they are based. Therefore, it is important to note the different resolution of these datasets and the margins of error inherent in their creation and correlation. However, these datasets brought together in ArcGIS can allow a much-improved picture of the Caribbean islands as they changed through time and also enable the analysis of relative sea level change impacts upon on individual islands and on site-specific pre-Columbian settlements.

Caribbean

A regional picture of changing relative sea levels in the Caribbean shows how the islands of the Caribbean, as well as the pan-regional continental coastlines, have changed during the Holocene (Figure 2).



Figure 2 Map of the Caribbean showing the impact of changing relative sea levels on the islands of the region.



Figure 3 Map showing impacts of relative sea level change on the island of St Martin in the Lesser Antilles.

Previously noted features such as the chain of islands between Honduras and Jamaica are shown, as is the large landmass of the Bahamas and extension of the Florida Keys. Many of the islands have been greatly reduced in size during the pre-Columbian occupation of the Caribbean and this has interesting implications for issues of inter-island visibility and the loss of paleocoastal pre-Columbian coastal sites beneath the rising seas. It is also interesting to note that it is not only the larger, geologically older, Greater Antilles that are affected as examples in the Lesser Antilles, such as St Martin, also give a clear demonstration of the changing nature of island formation during their prospective pre-Columbian occupation.

Cuba as a living island in the Caribbean

This article will now focus on Cuba in order to address key issues regarding the temporality of land loss, local variation in impacts and the implications for archaeological site visibility. By modelling a series of snapshots of sea levels in Cuba at different points in time it is possible to build up a picture of the temporality of change in the island archipelago. Figure 4 shows the changing picture of Cuba since the known pre-Columbian occupation of the island (Guarch Delmonte *et al.* 1995; Kozlowski 1974).

One of the most important observations to make from this series of images is how much land has been inundated over the past 6000 years. By percentage terms 27.4% of the island has been submerged under water during the past 6000 years. Another observation is that this land loss has not been uniform around the island but rather focused in different areas with some coastlines retreating by over 60 kilometres as paleocoastlines are breached and



Figure 4 Map showing impact of relative sea level rises on Cuba at specific at different points during the pre-Columbian occupation of the island.

islands formed by outlying upland areas. It is also interesting to note that the impacts of relative sea level change appear to have had an important influence throughout the pre-Columbian occupation with evidence of coastal flooding up into the early first millennium AD.

These observations of the impacts of changing sea levels on Cuba raise the question of their impact on the archaeological record. By modelling these changes in sea levels with known pre-Columbian site distribution patterns this topic can be explored in more detail. Using known site classifications, archaeological sites can be given a relative temporal context with which to correlate with the known temporality of relative sea level change. However, for the purposes of this chapter we shall just show how models that use all known archaeological sites can highlight the impacts of relative sea level rises on site distribution



Figure 5 Map showing potential impacts of relative sea level rise on site pre-Columbian site distribution patterns in Cuba.

patterns. Figure 5 shows the distribution of pre-Columbian archaeological sites in Cuba and there are some noticeable areas with a distinct paucity of sites (Cooper 2007, 2010).

Areas on the south coast of the mainland between the modern day towns of Trinidad and Manzanillo and the area of coastline around the Gulf of Batabano to the north of the Isla de la Juventud lack evidence of pre-Columbian occupation. There are a number of different case study areas, similar to these two areas, but these selected areas highlight how relative sea level rises have flooded these areas during the pre-Columbian occupation of the region and paleocoastlines where there may well be a number of archaeological sites now underwater. By contrast areas with high densities of archaeological sites such as the north coast of Matanzas, the south coast of the Pinar del Rio peninsula or the South Coast of the Mainland between Cienfuegos and Trinidad have remained relatively unaffected (Figure 5). Therefore this raises the possibility that the impact of relative sea level change on the visibility of pre-Columbian archaeology in Cuba has been profound and should be taken into account when interpretations of site distribution, island colonization, population density and changing resource and subsistence strategies are considered.

These models also raise the question of how relative sea level change was experienced by pre-Columbian populations. Were these coastal inundations long-term imperceptible rises or short-term abrupt flooding events that would have had major impacts for pre-Columbian coastal communities? To address these questions a smaller scale of analysis is required where bathymetric, paleoenvironmental and archaeological data at higher resolutions can be correlated and interpreted.

Case study area

As discussed above, the interdisciplinary fieldwork carried out in the case study area by Cooper and Peros over a number of years has enabled high-resolution paleoenvironmental and archaeological data to be collected. More details of this research can be found elsewhere (Cooper 2008; Cooper and Peros 2010; Peros et al. 2006; Valcárcel Rojas et al. 2006). These data provide a detailed picture of changing local sea levels and changing pre-Columbian settlement patterns and food procurement strategies. The construction of detailed bathymetric and digital elevation models allow different scenarios of relative sea level change to be examined. These models highlight the fact that the coastal landscape is a complex picture of topographic, ecological and archaeological data. In the case study area, it appears that there was a paleocoastline that ran along the northern edge of the Jardines del Rey archipelago close to the modern day reef where the Cuban continental shelf drops off into the Bahama Channel. The identification of a number of archaeological sites from different time periods on offshore islands along this paleocoastline shows how this reef resource has played a role in the resource and subsistence strategies of pre-Columbian populations living in the area for thousands of years. However, models of the effects of relative sea level change in the area show that this case study area has been far from stable. The topography of the case study area is intriguing as the raised paleocoastline around the Jardines del Rey archipelago appears to have acted as a barrier protecting lower topographic areas behind. Therefore as relative sea levels rose during the pre-Columbian occupation of the region it appears that this paleocoastline was breached and a large-scale flooding event or a series of flooding events occurred. The impact of these flooding events would have been profound as large areas over 20 square kilometres would have been flooded in abrupt events radically changing the coastline and transforming the local ecology. The impacts of these flooding events as a result of relative sea level rises would have been profound for the pre-Columbian populations living in the region. At this stage the temporal resolution for proving cause and effect between flooding events and changes in pre-Columbian lifeways is not sufficient to draw robust correlations. However, it is important in itself to consider how these models suggest that long-term relative sea level change would have created very short-term impacts for pre-Columbian populations living in the area.

Summary

In this paper, we have outlined a framework for modelling relative sea level change in the Caribbean. By combining recently developed regional bathymetric and shoreline datasets with regional relative sea level curves and supplementing this regional picture with locally acquired bathymetric, paleoenvironmental and archaeological data it has been possible to explore the impacts of relative sea level change on the islands of the Caribbean and on the pre-Columbian populations that lived upon them. It is important to highlight how the Caribbean is directly connected with the wider hydrographic and climate systems of the North Atlantic. It is clear that relative sea level change in the past at a hemispheric, regional and local scale has not been constant and uniform but rather dynamic and locally contingent. Therefore the idea of a punctuated equilibrium is perhaps useful in which the relationship between land and water in the Caribbean should not be seen as in stasis but rather in flux with punctuated events radically changing the nature and extent of landforms in the region.

It seems likely that the impacts of relative sea level change and variation in ocean currents would have had important implications for both the colonization of the Caribbean by pre-Columbian populations and the consequent visibility of these events in the archaeological record. During the known occupation of the Caribbean it is clear that regional relative sea level rise of more than 5 metres would have had a profound effect on the islands and their surrounding waterscapes. A comparative example of relative sea level change in Cuba and pre-Columbian site distributions highlights the locally contingent and dramatic nature of the impacts of these relative sea level changes. The local case study area from northern Cuba has highlighted how the impacts of relative sea level rise can be manifested in abrupt and high impact coastal flooding events that would have submerged paleocoastlines and radically altered coastal ecology. These impacts would inevitably have influenced pre-Columbian settlement locations and food procurement strategies and it is only through increasing the temporal resolution of archaeological and paleoenvironmental data at local scales that these topical issues can be further explored. It is clear that while the models used in this discussion do not contain perfect datasets they are far more appropriate than using a static modern day picture of the Caribbean Islands. Therefore, this paper highlights the dynamic nature of the living islands of the Caribbean and argues that researchers interested in the pre-Columbian period of the region may be better served by considering temporally and spatially contextual islandscapes when carrying out archaeological research in the region.

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PALAEOECOLOGY AND HUMAN OCCUPATION DURING THE MID-HOLOCENE IN PUERTO RICO: THE CASE OF ANGOSTURA

Isabel C. Rivera-Collazo

In the Caribbean there is increasing evidence that the mid-Holocene was a time of maritime travel, pan-Caribbean contact and active modification of island environments. However the uncritical application of "hunter-gatherer" as a paradigm has so far clouded our understanding of the period. Even though there is a growing trend to move away from this normative concept, we still need to gather more evidence and develop new models to reassess and formulate alternative interpretations of the period. Archaeomalacological and geoarchaeological analyses at the site of Angostura demonstrate that mid-Holocene populations had predictable patterns of mobility that supplied individual and social requirements at micro and macro levels that can be explained with a multiscalar approach. The study also demonstrates that, within flexible systems, resource depletion is not an unavoidable outcome of sedentism, because diet broadening and diversification can be used as an alternative to overexploitation. These results highlight the complexity of human decision making in a deep-time period.

Según las más recientes investigaciones arqueológicas, el Holoceno medio en el Caribe fue un período de navegación marítima, desarrollo de lazos de interacción a nivel pan-caribeño y la modificación activa de los ambientes isleños. Sin embargo la aplicación paradigmática del concepto "cazador-recolector" hasta ahoraha empañado nuestra comprensión de la época. A pesar de las recientes tendencias a alejarse de este concepto normalizado, aún es necesario realizar más estudios y desarrollar nuevos modelos para reevaluar el período y formular interpretaciones alternativas. Estudios arqueomalacológicos y geoarqueológicos del sitio de Angostura (Barceloneta, Puerto Rico) demuestran que las poblaciones del Holoceno Medio tenían patrones predecibles de movilidad para abastecer las necesidades individuales y sociales a nivel micro y macro, las cuales se pueden explicar con un enfoque de escalas múltples. El estudio también demuestra que, dentro de sistemas flexibles, el agotamiento de recursos no es un resultado inevitable del sedentarianismo, ya que la ampliación y diversificación de la dieta se puede utilizar como alternativa a la sobreexplotación. Desde una perspectiva de profundidad temporal, estos resultados resaltan la complejidad del proceso de toma de decisiones humanas y refuerzan la necesidad de reconceptualizar el período pre-Arahuaco.

Dans la Caraïbe, il y a une évidence croissante que l'Holocène Moyen fut une époque de voyage maritime, de contact pan-caraïbe et de modification active des environnements insulaires. Toutefois, l'application non-critique du chasseur-cueilleur comme un paradigme a obscurci notre compréhension de la période. Même s'il y a une tendance grandissante de sortir de ce concept formalisé, nous avons encore besoin de collecter plus de preuves et de développer de nouveaux modèles pour reconsidérer et formuler des interprétations alternatives de la période. Des analyses archéo-malacologiques et géoarchéologiques du site d'Angostura démontrent que les populations de l'Holocène Moyen suivaient des modèles de mobilité prévisibles qui répondaient à des besoins individuels et sociaux à des micro- et macro-niveaux, qui peuvent être expliqués par une approche à différentes échelles. L'étude démontre également qu'à l'intérieur de systèmes flexibles, la diminution des ressources n'est pas un résultat inévitable de la sédentarité, parce que l'élargissement et la diversification de la diète peuvent être utilisés comme une alternative de la sur-exploitation. Ces résultats font ressortir la complexité de la prise de décision humaine dans une perspective à long-terme et soulignent le besoin de ré-conceptualiser la période.

Introduction

In sharp contrast with traditional discourses, there is growing evidence that the mid-Holocene in the Caribbean was a time of maritime travel (Callaghan 1995, 2003; Lathrap 1968; Sears 1977; Torres and Rodríguez Ramos 2008) pan-Caribbean contact (Oliver 2009:6-47; Rodríguez Ramos and Pagán Jiménez 2006; Torres and Rodríguez Ramos 2008) and active modification of island environments (Newsom and Wing 2004; Pagán Jiménez, 2007; Pagán Jiménez *et al.* 2005; Rodríguez Ramos 2007). However the blind application of the "hunter-gatherer" concept as a paradigm has so far clouded our understanding of the period (Oliver 2009:7-27; Rivera-Collazo 2011; Rodríguez Ramos 2008). This paradigm (Rivera-Collazo 2011) starts and ends with an assumed absence of ceramic technology, continues through unsupported assumptions of mobility and social simplicity, and leads eventually to the interpretation of ceramic in pre-Arawak contexts as intrusive. We have mostly moved on from this reasoning, but we still need to gather more evidence and develop models to frame the reassessment of the period.

Many approaches can be applied to this end. I have developed a model for the understanding of foragers on islands and in maritime contexts through the application and modification of the Theory of Adaptive Change, Maritime Culture and Human Behavioural Ecology. In this paper I present part of my results, proposing an alternative interpretation of this period using the site of Angostura and other pre-Arawak sites on Puerto Rico as case studies. I use the term pre-Arawak, following Rodríguez Ramos (2008), Oliver (2009:16) and Pagán Jiménez (2007). Echoing Rodríguez Ramos (2008, 2010:51), my use of the term pre-Arawak acknowledges the potentially wide cultural diversity of these early populations and its overlap with later processes. It is employed not as a category, but as a name to avoid the structural features imposed by the name Archaic. In this article, I use it as a temporal concept to address the earliest social contexts, differentiating them from the social processes occurring after the renewed migrations ca. 2.5 kya, identified archaeologically by new ceramic styles (Saladoid/Huecoid). I also acknowledge that the term Arawak itself is imprecise and can be misleading; modern Arawak groups are as similar to ancient ones as Italians are to ancient Romans or Egyptians are to their ancient counterparts.

Longue durée

Before continuing into the details of the site itself, we need to place it within its regional and environmental context (Cooper and Peros 2010). The mid-Holocene was a period of intense climatic variability (Braconnot et al. 2000; Schmidt et al. 2004; Wanner et al. 2008). The earth was in the early stages of the long process of adjustment to a post-glacial era. Greater insolation coupled with wind and sea surface temperature variations affected the location of the intertropical convergence zone (ITCZ), the low pressure rainband that regulates climate in the region (Haugh et al. 2001). This change in the ITCZ provoked increased precipitation, more acute seasonality and increased occurrence and intensity of hurricanes, supported by varied evidence from around the Caribbean basin (Bertran et al. 2004; Donnelly and Woodruff 2007; Hodell et al. 1991; Kennedy et al. 2006; Thunell and Tedesco 2003; Woodruff et al. 2008). Heightened moisture during the early Holocene promoted the expansion of forests, which peaked during the mid-Holocene (Newsom and Wing 2004; Higuera-Gundy et al. 1999; Islebe et al. 1996). Higher precipitation, coupled with rise in sea level (even possibly higher sea levels than today in some areas, Taggart 1992), affected also the water table levels, favouring the formation of freshwater springs and marshes, and reshaping the characteristics of the coastal geomorphology (Renken et al. 2002). After the lower sea levels of the Pleistocene, the river flood plains were less clogged with sediment leaving the basal surface lower than modern topography (Blum and Törnqvist 2000). Rising sea levels and more active springs would have drowned the coastal areas, creating conditions which favoured the development of rich coastal niches for the colonization of fish, molluscs, birds, manatee, and mangrove forests; all resources exploited by humans.

On the continent, rising sea levels drowned a significant portion of the coastal zone (Warne et al. 2002; Fleming et al. 1998). Even though human settlement patterns and social processes on the continent during the early and mid-Holocene are also in need of reexamination, the pattern that emerges suggests complex social processes that affected the venturing of people towards the Caribbean archipelago. Contrary to common assumptions in Caribbean archaeology, migrations are not single, unitary events triggered as a direct response to changes in simple factors. Migration is a process comprising multiscalar levels of mobility that involve multiple factors, dimensions, and levels of decision making (Curet 2005:27-94). Other interests, aside from changes in population density, must have been at play to stimulate the venturing and exploration of the Caribbean Islands. Over 35 years ago Lathrap (1968, 1973) suggested the existence of complex long-distance trade networks on the Amazon basin of South America, especially along river channels. The speed of dispersion of domestic plants from central America, as Jaime Pagán has discussed (this volume; see also Pagán Jiménez 2007), reinforce the idea of very long distance contact and trade (Rodríguez Ramos and Pagán Jiménez 2006). Exploration of the Caribbean was incorporated into this network.

The distribution of early ¹⁴C dates through the archipelago suggests that the process of exploration, exploitation and settlement did not necessarily follow the "stepping stone" model, but targeted the larger islands with more resource diversity. According to Callaghan's computer simulations (Callaghan 1990, 1993, 1995, 2001, 2003; Callaghan and Bray 2007), which do not take into consideration conditions in the past, but can be used as a heuristic guide, the direct trip between mainland South America coast and the Greater Antilles (Puerto Rico, Hispaniola) would take only a few days (Callaghan 2001). This voyage would have constant land markers within sight range as Torres and Rodríguez (2008) have pointed out recently. The trip requires medium to small sized dug-out canoes, moderate navigational skills, and a speed of around 2 knots (Callaghan 2001). The archipelago, therefore, was not an unreachable location with the technological and navigational capabilities of the Caribbean populations during the mid-Holocene (Sears 1977). Search and exploration ventures to the archipelago to expand and supply mid-Holocene trade and exchange networks would have been common even before more permanent settlements were established. The fact that most pre-Arawak sites are located on coastal areas, or slightly more inland locations within easy access to the coast, points towards the existence of maritime routes coupled with the exploration and exploitation of inland resources, possibly to supply trade. Identification of which objects were sourced on the archipelago still needs to be looked into, given that, as Lathrap (1973) pointed out; most of the traded objects would have been organic and perishable.

Angostura

Within this complex scenario, the earliest settlement of Puerto Rico occurred around 4.6 kya on the north and south coast of the island almost simultaneously (Figure 1). So far, the earliest evidence of human activity in Puerto Rico has been linked to increased charcoal particles in a sediment core from Tortugero Lagoon (Burney *et al.* 1994), interpreted as evidence of anthropogenic fires starting around 5.3 kya with a peak between 4-3.5 kya. The early date of the Tortuguero Lagoon core supports exploratory ventures to the islands before more permanent settlements were established, as well as modification and use of the landscape after settlements became more permanent, including the widespread use of fire.

The site of Angostura (Figure 2) was discovered in 1988 during the construction of a highway and shopping centre. It is located on the north coast of Puerto Rico, adjacent to the Río Grande de Manatí, but is usually away from the river's normal flooding levels. The site covers an area of 6.2 hectares and consists of 4 topographic protuberances or mounds (identified as A, B, C and D) surrounding a lower central area reported to be clear of archaeological remains. There is also an intermittent lagoon or marshy area immediately to the south. Refuse accumulated over four natural rocky outcrops, or low *mogotes*, on the alluvial plain.



Figure 1 Location of sites mentioned in the text. 1) Angostura (4650 – 3749 cal BP). 2) Paso del Indio (4640 cal BP – post 1300 or 1400 AD). 3) Maisabel (no reported pre-Arawak elements, but maize phytoliths reported in core within layer dated to 2850 cal BP. See below). 4) Maruca (4570 – 2850 cal BP).



Figure 2 Left image: Detailed view of study area with site location. The rugged landscape to the south is the karstic range (mogotes) surrounding the site. Right image: View of Angostura with its mounds identified as A, B, C and D. Image shows the 1988 topographic map over the aerial photograph of the site. The black square on Mound D marks the extensive excavations there during the 1990s. The yellow line marks a drainage channel that has been considered site boundary since 1988.

The site has been excavated archaeologically several times, most intensively between 1988 and 1995 by Carlos Ayes-Suárez and Ovidio Dávila (Ayes-Suárez 1988; Ayes-Suárez and Davila 1993, 1995; Moscoso *et al.* 1999), and more recently by my own excavations in winter 2008 – 2009. Ayes-Suárez and Dávila's work on the site presents many serious methodological issues that I am not going to discuss in detail at this time, but which range from inconsistent to non-existent use of sieves, biased collection of remains and incomplete analysis and excavation reports. Their conclusions are also highly speculative and based more on gut-feeling than on hard data. For these reasons I will not use their conclusions, but re-interpret the strands of evidence that can be salvaged from the reports, and combine them with the results of my own excavations.

The site of Angostura is famous for one particular radiocarbon date of 5960±250 uncalibrated BP (see S11E37St? in Figure 3). The median of this date after calibration is 6820 cal BP. However, a stratigraphic analysis of the other 10 radiocarbon dates of the site (Figure 3), taken from several units within the same mound (B), indicates that this date might be in fact anomalous. The rest of the dates, obtained from shell and charcoal samples, span from 4650-3750 cal BP. These dates suggest a continuous occupation of the site through a period of about 1000 years. Understanding the social processes within those thousand years is complicated by the fact that the stratigraphic and sedimentary descriptions of the early massive excavations are very poor, and my own high resolution documentation is very limited in size. However, Ayes and Dávila did consistently record the dominant mollusc species for each stratum. For this reason, I have developed a stratigraphic analysis and correlation based on mollusc species assemblage content.

Occupation phases of Angostura

Sixteen different shell species are registered on the mounds (Table 1), but only seven of these dominate the assemblages. These seven are present throughout the layers, but their abundance changes in the different phases, with the exception of *Crassostrea rhizophorae*, which eventually disappears. The analysis of the archaeomalacological assemblage, com-



Figure 3 Calibrated radiocarbon dates of Angostura. All samples were analysed at Beta Analytic Laboratories. The sample marked S11E37St? was initially reported in Carlos Ayes (1988) but has no stratigraphic information. The rest of the samples were obtained from Mound B by Carlos Ayes during the same season S11E37St? was collected, but sent to analysis and interpreted by Jesús Vega (2002). In this graph the samples are arranged stratigraphically based on reported stratum from which the sample was obtained (e.g. St2, St3, St4, St5), and colour-coded based on the excavation unit they were retrieved from (red = S11E37; pink = S11E36; purple = S9E35; blue = S10E35; green = S10E37; and yellow = S10E35). All the units are contiguous 1 x 1m blocks of a 9 x 9m excavation. Calibration was calculated using OxCal 4.1.1(Bronk Ramsey 2009) and the IntCal04 atmospheric curve (Reimer et al 2004). Marine reservoir = ΔR : 11, Standard Deviation: 48, Average Uncertainty: 10.

Most abundant species		Other marine molluscs		Land snails
Gastropods	Bivalves	Gastropods	Bivalves	
Crassostrea rhizophorae	Neritina sp	Columbella sp	Tivela mactroides	Pleurodonte caracolla
Anomalocardia brasiliana	Cittarium pica	Worm sell	Glycimeris sp	Pleurodonte marginella
Phacoides pectinatus		Barnacles	Crassostrea sp	Pleurodonte sp
Mytilopsis sallei		Astraea sp	Nuculata acuta	Megalomastoma croceum
Tagelus sp		Nassarius albus	Chione cancelata	Austrocelenites concolor
		Strombus sp		Polydontes lima
				Alcadia striata

Table 1 Mollusks of Angostura.

bined with the sedimentary descriptions and geoarchaeological analyses has allowed the identification of three separate phases of occupation. High resolution stratigraphic analysis of Mound C suggests that these phases were continuous and graded into one another.

Phase 1

In phase 1 refuse starts to accumulate on the rocky outcrops of Mounds A, B and D, covering the original clay and limestone surface of the low mogotes. The phase is characterized by the exploitation of mangrove resources, in particular *Crassostrea rhizophorae* and *Phacoides pectinatus* supplemented with estuary and river environments. The geoarchaeological analysis of a sample of this stratum for Mound B suggests that some sections of this layer could have been deliberately created. In this mound as well as sections of Mound D the layer contains shell of similar size range and almost nothing else, not even fine grained sediments. The chemical and microartefact analysis of a sample from Mound B suggests that aside from trampling, not many other activities affected the layer with the same intensity as other layers. It seems this layer was not an aleatory accumulation of food refuse, but a feature lain down possibly to create a better drained surface.

This shell layer was subsequently covered by a fine-grained loamy deposit of local origin. This deposit was originally interpreted as an abandonment phase or a possible flooding event of rising water table levels. However, the absence of this layer in other areas of the site undermines this interpretation. The geoarchaeological analysis suggests that this layer was in fact an occupation surface rich in bone and fragmented shells, with high magnetic susceptibility and phosphate content which can be considered a habitation surface. This designation can be further supported by layers of ash and burnt limestone over the loamy layer on Mound D. On Mound C, it is possible that the earliest habitation started at the end of Phase 1 or early Phase 2, directly over the clayey layer of the bedrock, without the layer of shells underneath.

Phase 2

Phase 2 is characterized by the exploitation of mostly estuarine and river environments as represented by the *Anomalocardia brasiliana, Tagelus sp* and *Mytilopsis sallei*. Microlandscape use during this period becomes more complex and intense. The site experiences a growth, extending to reach Mound C. Midden layers with this type of mollusc species assemblage combination are present also in Mounds A and D. Mound B however seems to continue being used for habitation as a layer with Phase 2 characteristics was not reported for this mound. Surfaces with evidence of other activities are also identified surrounding the highest sections of the mounds, for example thick layers of what seems to be *terra preta*, the anthropogenic tropical soil associated with intensive, permanent human activity and occupation, are present near Mound B. Concentrations of burnt limestone and crushed shells mixed with the dark (possible *terra preta*) sediments are reported also for the central sections of Mound D at this time, suggesting the renewed use of this mound C and to the remains of Mound A.

Phase 3

Phase 3 is characterized by a dominant focus on river and estuarine environments, as suggested by the combination of neritids and *Anomalocardia brasiliana*. This is evident in mounds A and B, as well as some sections of Mound D in association with dark sediments and ash layers. This layer is absent in Mound C, but, as the top section of this mound has been truncated, it is possible additional layers have been lost. Habitation surfaces expand later throughout the site, as the entire surface of Mound D seems to have been covered by dark sediments and similar deposits continue around Mounds B, C and A. The final sections of this period are disturbed by erosion, exotic earthworm activity (i.e. introduced species), tilling, and post-Colonial occupation.

Reconsidering the hunter-gatherer paradigm

Returning to the reconsideration of the hunter-gatherer paradigm, there are two important aspects that I would like to address: mobility and sustainability.

Regarding mobility, the shell analysis from the site suggests that the home range area used for exploitation was restricted to the area immediately surrounding it. All the resources observed in the shell heaps are available in modern environments within a 5 km radius of the site, and would have been much closer in the ancient landscape. These measures seem to be consistent with the daily mobility range reported by Mans (this volume) for the Amazon Trio dynamics. Energy investment towards the exploitation of this home range would have been greatly reduced by the use of maritime transport technology. This home range size provides further evidence of permanent, sedentary settlement, with processing camps nearby where prey could have been processed before bringing them to the site. Similar patterns are suggested by the mollusc assemblage of Maruca, a site contemporaneous to Angostura but on the south of the island (Pantel 1994; Rodríguez 2004. See Figure 1). The lithic assemblage of Angostura, however, indicates people moved beyond their home range. The presence of exotic rock types suggests there are other ranges of mobility beyond the immediate daily home range.

Mobility can be measured on different scales. Microscale mobility, applies to daily subsistence activities, where people would have remained within the small scale space around the site, including the processing camps. Mesoscale mobility would be expected on an 'every-few-months to every-few-years' basis, reaching distant areas of the island itself and adjacent islands, and would account for the exploitation of materials and resources sourced away from the site either through search and collection or trade. Finally, the procurement of very special symbolic and culturally important items and networks beyond the mesoscale spatial range could be expected to occur as macroscale mobility of once every few years or once a decade or generation, and could reach very distant locations. The entire group would not be expected to move every time there is a mobility event, and the larger the scale of mobility, the fewer people expected to execute it. These multiple mobility ranges would account for continued contact and cultural exchange with the mainland even though there were permanent, potentially sedentary, settlements on the islands.

The second aspect is the sustainability of sedentism. Sedentism has two implications: the need for problem solving and task management, and the increased exploitation pressure on available natural resources in a restricted location. Efficient problem solving and task management requires the development of more complex social organization structures, which need to be re-thought within pre-Arawak contexts. The presence of primary and secondary burials within the mounds in Angostura suggests the existence of ancestral ties with the landscape and a sense of territoriality. Similar statements can be made for Maruca. Secondly, permanent exploitation of fixed resources applies increased pressure on the locally available resources. In Angostura, the presence of grinding and plant processing tools, used to extract maximum nutritional value from plants, suggests that measures were being taken to support a large population with limited plant resources. With regard to the protein component of the diet it is generally assumed that humans exploit resources until depletion. The archaeomalacological record of Angostura suggests that depletion of protein sources was avoided by diversifying the diet, and incorporating resources that otherwise would have been overlooked, as suggested by the gradual shift from the *Crassostrea rhizophorae* to *Anomalocardia brasiliana* to *Neritina* sp. This shift can be interpreted as an active and sustainable management of the resources and resilient adaptation to environmental change.

Angostura in history

Given the conditions of the site, we do not know for certain when and how Angostura was abandoned. Pre-Arawak settlements were initially established in ecotonal areas with good, easy access to a wide range of resources, which continued to maintain contact with maritime trade networks and routes. It is possible that, as the embayments and estuaries started to clog up with sediments continued occupation of the site was not profitable, and locations closer to the coast and within easier reach to the maritime trading routes were preferred, such as Maisabel (Siegel *et al.* 2005). Even though pre-Arawak layers have not been reported for this site, the presence of maize phytoliths in a mangrove core from a layer securely dated to approx. 2850 cal BP (Siegel *et al.* 2005:111) suggests the presence of people with domestic plants in the area later (but not much after) the latest date available from Angostura.

Maruca on the other hand, was inhabited for longer than Angostura, possibly because its location continued to provide easy access to the coast, even when the marshes and swamps around the site clogged with sediments. In contrast, Paso del Indio (Walker 2005), a site with pre-Arawak context inland from Maisabel, even though started not long after Angostura, the site was not abandoned, but instead changed over time. Exploration of the island might have created new opportunities, interests and priorities and, while maritime routes continued to be important as evidenced by new migrations of the early Arawak period, other processes were also being developed and need to be researched.

Concluding remarks

Long-existing preconceptions, in particular the "hunter-gatherer paradigm", have clouded our understanding of the earliest occupants of the Caribbean. Evidence of cultural contact, social complexity and permanent settlement require us to reconsider and re-conceptualize the characteristics of the human occupations of the Caribbean during the mid-Holocene and the implications of the earliest colonization of the archipelago. At the other end of the period, analysis of lithic reduction protocols are suggesting complex plural social interactions and influences blurring the traditional boundaries between "the Archaic", "the Saladoid" and "the Huecoid". The interaction between the "Arawak" (Ceramic Age) and the pre-Arawak groups needs also to be re-examined in detail, away from the "displaced or annihilated hunter-gatherer" concept.

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THE MOST BEAUTIFUL HOUSE IN THE WORLD The archaeology of aesthetics in eastern Hispaniola

Alice V.M. Samson

Indigenous aesthetics are retrievable in the archaeological record of the pre-Columbian houses of the Dominican Republic. This chapter presents evidence from thirty excavated houses spanning the ninth to sixteenth centuries from the coastal settlement of El Cabo. The excavations in El Cabo were part of the project "Houses for the Living and the Dead" funded by NWO (The Netherlands Organisation for Scientific Research). Here, natural wood, palm and bedrock materials were transformed into houses sharing similar architectural characteristics and life histories. The aesthetic choices of the inhabitants give insights into social dynamics, especially with respect to the intra-settlement ethos of harmony and community.

La estética indígena puede encontrarse en la arqueología de las viviendas precolombinas en la República Dominicana. En este capítulo se presenta evidencia de treinta casas excavadas del asentamiento costero de El Cabo, y datadas entre el siglo nueve y el inicio del siglo dieciséis. Las investigaciones arqueológicas en El Cabo forman parte de un programa a largo plazo, denominado "Vivir y morir en una comunidad Taína" financiado por el Fondo Holandés para Investigaciones Científicas (NWO). Aquí, los materiales naturales de la madera, palma y roca se transformaron en casas con similares características arquitectónicas e ciclos de vida. Las preferencias estéticas de los habitantes nos proporcionan información sobre la dinámica social, especialmente en lo referente a la ética de armonía y comunidad del asentamiento.

L'esthétique indigène est accessible dans l'archéologie de la maison précolombienne dans la République Dominicaine. Ce chapitre présente des données provenant de trente maisons du 9ème et 16ème siècles fouillées du site côtière de El Cabo. Les fouilles de El Cabo faisaient partie du projet "Maisons pour les vivants et les morts", financé par NWO (Organisation néerlandaise pour la recherche scientifique). Ici, les matériaux naturels comme le bois, le palmier et la roche ont été transformés en maisons partagant les mêmes caractéristiques architecturales et cycles de vie. Les choix esthétiques des habitants donnent un aperçu de la dynamique sociale, en particulier en ce qui concerne l'éthique de l'harmonie et de la communauté.

Introduction: Archaeology and aesthetics

It is argued that aesthetic intention, i.e. that which deliberately seeks to elicit a positive reaction to an object within a social setting, is retrievable in the archaeological record of El Cabo. Moreover this aesthetic intention gives insight into indigenous concepts of beauty and value. In the pre-Columbian site of El Cabo, in eastern Hispaniola, a cultural aesthetic of domestic beauty existed which was the manifestation of ideals of domestic harmony, stability and good social life.

Discussion of aesthetics in archaeology is usually shied away from in favour of the larger and supposedly more neutral preoccupation with style (Boast 1997; Wobst 1977; Wiessner 1983, 1990). This is partly due to the association between art and aesthetics and disapproval of attempts to evaluate past aesthetics. Literature on the anthropology of art warns against the interpretation of the aesthetic value of objects on the basis of our own cultural aesthetic judgments (Corbey *et al.* 2004; Morphy and Perkins 2006:14). For example, one aesthetic focus of traditional Nile farmers in southern Sudan is their cattle, especially the shine of the hide, the shape of their horns and their fatness (Coote 1992/1995 reprinted 2006). This might not intuitively appeal to our own taste, but must be understood in the context of that particular society. For anthropologists this poses two challenges; firstly to establish the quality of the aesthetic effect, and secondly, to place it in an interpretive context to establish its meaning (Gell 1998; Morphy and Perkins 2006). For archaeologists the quality and meaning might seem even more elusive as living informants are not available. In many cases however, the material and structural properties of the archaeological record are specially suited to gain access to past aesthetics.

So how can archaeologists evaluate the technological products and artefacts of a past culture on native, i.e. emic, aesthetic grounds? This is deemed easier for some classes of objects, or recognized art objects i.e. portable, crafted, prestigious exchange items, than for others. Houses, on the other hand, being bulky, fixed and lived-in, do not readily fit this category. However, in El Cabo scrupulous attention to the built environment and community participation in domestic *renewal*, i.e. cycles of house construction, habitation, abandonment, and re-construction, incorporating beautifying behaviours, constitutes a domestic aesthetic. In other words, the archaeological evidence strongly suggests that the domestic environment was made to appeal to the physical and emotional senses of the inhabitants.

An ethnographic analogy: Amazonian sociality and the beauty of the everyday

Caribbean archaeologists are accustomed to draw upon the ethnography of lowland South America, one of the main origin areas of the horticultural peoples of the Caribbean islands, in their interpretation of the ancient populations of the Antilles. In this paper, rather than do this for the purposes of interpretation of cosmology, socio-political organization, or subsistence, as is common practice, I explore the characteristics of indigenous Amazonian sociality on my image-forming of domestic life in pre-Columbian El Cabo. This should be seen as an experiment in qualitative juxtaposition between the pre-Columbian house and Amazonian aesthetics, rather than a formal analogy. Contributors to the edited volume *The anthropology of love and anger: The aesthetics of conviviality in Native Amazonia* (Overing and Passes eds. 2000) concur that Native Amazonian peoples generally pride themselves on their skills in congenial social interaction and their ability to be social, especially in the domestic realm. This includes a tendency to talk at great length about how to live well and happily in community with others, how to go about creating "good/beautiful" people who can live a tranquil, sociable life together, and the difficulties of achieving this task (paraphrasing closely Overing and Passes 2000:2). The authors continue; "*Their* [i.e. Native Amazonians, original italics] emphasis is upon achieving a comfortable affective life with those with whom they live, work, eat and raise children." The authors emphasize the intensity of indigenous sociality ("conviviality") which gives great importance to amiability, intimacy, peace and equality in social life. This is as true of the infamously portrayed Yanomami, as for many other Amazonian peoples whose aggression towards enemies is proportionate to their solidarity with and love for kinspeople and friends (Alès 2000:148).

One way Native peoples of Amazonia achieve this is by placing stress on "the beauty of the everyday" (Overing and Passes 2000:12), the ornamentation and elaboration of everyday items of material culture and the most common household objects such as containers, cooking utensils and tools such as axes. This extends to every aspect of life such as body ornamentation and posture, speech, harmony and order in the domestic space and skill in craft production (an outstanding example of this is Yecuana basket weaving [Guss 1989]). The way this is manifested differs, nevertheless, the language of aesthetics and the practice of beautifying behaviours is a social endeavour linked to the creation of an auspicious community environment (Hugh-Jones 2009:49; Overing and Passes 2000).

Pre-Columbian aesthetics

Pre-Columbian societies in the Greater Antilles had a highly developed aesthetic which centred on the accoutrements of daily life and which is apparent in many aspects of material culture, laden with symbolism and baroquely embellished. Carved and inlaid wooden sculpture, ceramic effigy vessels, and beadwork are just some examples (Bercht et al. 1997; García Arévalo 1977; Kerchache and Lachaume 1994; Oliver et al. 2008). This concern was certainly not just an aspect of elite material culture but very much part of the general domestic and personal sphere attested by the abundant decoration and appendages on among other things, pottery, and the frequency with which bodily adornments such as beads, shell plaques and stamps for decorating the body are recovered at settlement sites. This sense of the aesthetic was not confined to portable objects only, but was embedded in everyday experience, including the domain of the house. Early chroniclers remarked on the clean, ordered and well-appointed dwellings they encountered in Hispaniola, Cuba and the Bahamas. Houses, and specifically the better quality type called the *caney*, had patterned walls of woven, coloured bejucos (vines), and smelt of sweet plant materials (Fernández de Oviedo 1851:V/V 143). House contents included crafted products such as duhos (wooden stools) and hammocks, decorated domestic utensils for food preparation and serving, and storage vessels such as wooden plates and bowls, calabashes, baskets and pottery. Such items have also been recovered from archaeological contexts (Calvera et al. 1996; Conrad et al. 2001). Only occasionally were chroniclers able to describe the interior of houses (often the inhabitants fled or blocked doorways). Columbus for example mentions household items neatly laid out ("sus adereços muy compuestos", 1990:80-81) and mistakes a house in Cuba

for a temple due to the fact that it was hung with shells, and another filled with female statuettes (Columbus 1990:78-79; Navarrete 1922:88). There were no room partitions, but possibly drapes and screens. Items suspended from the roof beams included tools, domestic utensils, fishing equipment, and baskets or calabashes containing the bones and skulls of ancestors (Columbus 1990:135; Pané 1999). Hammocks for sleeping and resting were slung between the posts.

Houses formed the locus in which political, religious and economic activities converged such as sleeping, eating, craft production and food preparation (Las Casas 1992:II 334) as well as the reception of guests, healing, storage and consultation of *cemis* (objects invested with sacred power; Pané 1999:Chs xvi, xxi and xxii). In Hispaniola ancestor consultation, the *cohoba* ceremony (ritual fasting, purging and ingestion of hallucinogens) and rites involving *cemis* would take place in houses, usually those of prominent people in the village. Moreover, it is evident from indigenous mythology that houses were of symbolic and cultural importance and a necessary counterpart to the social persona. *Cemis* could order a house to be erected for them and houses feature in the transformed worlds of the dead and the *cohoba* ceremony (where they are upside down) (Pané 1999:Chs xix, xxiv, xii, xix). The house was also seen as the location of socialization (as seen in the narrative of Deminán and his brothers who build a house for a turtle [Pané 1999:Ch. xi]) and the context for managing kin tensions (seen in the episode in which Yaya banishes and kills his son [Pané 1999:Chs ix, x]).



Figure 1 Topographic map of Hispaniola (Dominican Republic and Haiti) and its location within the Caribbean region (inset). El Cabo archaeological site marked with a star. Map adapted from DEM, U.S. Geological Survey Department of the Interior/USGS.

The foregoing discussion indicates that houses were multifunctional spaces at the intersection of social life. The reference to the beauty of some houses, the ordered neatness of the furnishings and the highly crafted nature of household contents indicates that the house was a focus of attention, both inside and out, and an arena of display fitting to the multifaceted role it played. In the rest of this paper, we will examine how an archaeological examination of the house can enrich this view from the chronicles and how aesthetic values were deeply incorporated into the fabrics, structure and living experience of the house.



Figure 2 The El Cabo coastal promontory showing the track into the village and some village buildings (grey), and the excavated units (black, majority of smaller units are 2×2 m, the largest unit, 1000 m² is the main topic of this paper). Map M.L.P. Hoogland.

El Cabo archaeological site

The primary locus and scale of the archaeological research in El Cabo was the settlement. Research was therefore concerned with the domestic political economy, i.e. realm of communal living, or those who eat, garden, work, build houses together, and share the same dead and ancestors. It is against this background that archaeological evidence for a concern with house aesthetics and beautifying the house in El Cabo is discussed.

El Cabo is a Late Ceramic Age (AD 600 - ca.1504) settlement site on the east coast of the Dominican Republic (Figure 1). The site was first investigated by the Museo del Hombre Dominicano in the late 1970's when two, small test-pits were excavated (Ortega 1978). Around the turn of this millennium the Museo carried out an impact assessment ahead of mineral extraction in the region including El Cabo and deemed the site at risk, recommending fuller investigation (Olsen 2000:Ch.6). Between 2005 and 2008 archaeological research, including extensive excavation, took place in El Cabo under the project Houses for the Living and the Dead, funded by NWO (The Netherlands Organisation for Scientific Research) under principle investigators Dr Menno Hoogland and Professor Corinne Hofman. The project was a collaboration between the Caribbean Research Group, Faculty of Archaeology, Leiden University, and the Museo del Hombre Dominicano, Santo Domingo. The goal of this research was to investigate settlement and residence in a Taíno community to develop an archaeological perspective on the indigenous house and settlement dynamics (Hofman et al. 2006, 2008; Samson 2010; Samson and Hoogland 2007). These aims were pursued by a fieldwork strategy of extensive excavation which documented habitation features, domestic structures and settlement space.



Figure 3 Excavation in progress in the main unit. Note the white labels mark features cut into the bedrock.



Figure 4 Detail of feature layer with postholes cut into the bedrock.



Figure 5 Ceramic adorno (handle or lug) with zoomorphic decoration, typical of the Chicoid pottery excavated in the main unit.



Figure 6 Stone beads excavated from the main unit.

The occupation in the largest excavated area, or main unit, which concerns this current paper¹, dates from ca. AD 850 to 10-20 years after European contact and revealed over two thousand features in 1000m² (Samson 2010:134-146) (Figure 2). The overwhelming majority of these features were interpreted as postholes (Figures 3 and 4). The unique preservation of postholes, directly cut into the limestone bedrock, enabled identification of over fifty structures, thirty of which are interpreted as houses, in addition to a communication platform, storerooms for community regalia, fences, windbreaks and work huts (Samson 2010:151-244; Samson 2009). House structures, the dominant indigenous architectural form, are interpreted as significant and primary material and social units.

A small number of burials, mainly from midden areas, as well as a large assemblage of pottery, shell, bone, coral, and stone artefacts from the find layer of the main unit (Figures 5 and 6) attest to the daily and long-term place-making activities of the community.

The house in El Cabo

El Cabo in the ninth to sixteenth centuries was a town consisting of some half a dozen neighbouring clusters of houses arranged in linear fashion along the edge of a low coastal promontory. House clusters, consisting of three to five houses forming related household groups of thirty to forty people, were further divided into individual houses which were pe-



Figure 7 Perspective plan of a house structure (Structure 1) showing the diameter and relative depths of the posthole features.

¹ In addition to this main unit, an auger-testing programme, an intensive surface survey, topographic mapping, geophysical investigations and 31 smaller units were excavated across the site (Samson 2010:Ch.4).



Figure 8 Perspective plan of a house structure (Structure 2) showing the diameter and relative depths of the posthole features.

riodically rebuilt, or *renewed*, creating long-lived institutions. House members were therefore likely able to trace their ancestors back to common, house origins (Samson 2010). Their houses were circular structures which most commonly range from 6.5 to 10 m in diameter and consist of two post circles; an outer perimeter wall of closely-spaced, slender posts, and an inner, roof-bearing configuration of eight, large support posts, aligning on a westerly doorway (Figures 7 and 8). House structures (n=31) are consistently larger, more regular and elaborate than other structures (n=21) and are the locations of commemorative acts and closing rituals.

Constructing

When the decision was taken to build a house, the act of levelling the uneven limestone bedrock on the edge of the cliff and the placement and hewing of the postholes into the rock was a significant and meaningful activity. The foundations were made with great care and extreme regularity according to a plan which ensured strict symmetry. Generally speaking, vernacular house foundations, even when highly standardized, display irregularities. Variation is often due to such factors as the different capabilities or body dimensions of the builders or of construction materials. Imperfections not tolerated in steel and concrete buildings can be accommodated by the flexibility and yielding qualities of organic materials. Why therefore are the foundations of the structures in El Cabo executed with such scrupulous exactitude? Again, this is not simply a functional concern, but reifies the acts of manufacture, in which the process and not just the end result is significant, something seen more generally in building traditions in traditional societies (Pauketat and Alt 2005; Owoc 2005). A refusal to reuse old house foundations, preserved in the rock in almost the same spot, and the non-expedient preference for making new postholes underscores this point.

The concern for regularity continues in the selection and setting of the posts. Constructional elements varied in size according to their position within the house, not just according to function, but also from front to back, in which a monumentalized entrance was made to diminish to an increasingly lighter construction towards the back. In many house structures this over-arching concept incorporates another pattern of regular alternation between larger and smaller posts along the whole perimeter. These smaller patterns coalesce within the larger form. In other words, the houseplans show different levels of internal symmetry not strictly related to function. Posts themselves were made of wood of the sapodilla, or false mastic family (identified by Dr Lee Newsom, Pennsylvania State University). These are home-garden species with smelly, edible fruits and which produce very dense hardwood, ideal for construction (Newsom and Wing 2004). The density of the wood and the difficulty in working it was compensated by a straight grain, smooth finish and durability, evidence of the considered choices of the builders.

Inhabiting

The structures in El Cabo, although very regular and circular in plan, did not necessarily transmit this circularity in the living experience. As soon as the posts were put into the postholes, the house stopped being based on concentric principles, and became dominated by an axial layout with a low and dark back and a high, light and imposing front. The front is the most dominant feature of the house in El Cabo. In general entrance façades of house structures were monumentalized and marked with uprights often as massive as the roof-supports inside. These larger posts frequently run for a third of the perimeter forming an outer wall which is asymmetrically balanced towards the west, away from the sea, and makes the front, or the face of the building the most imposing aspect of the structure. All activities such as the arrival and departure of household members and guests took place through this entrance as it probably formed the only access point in the houses. Doorways themselves were quite small (on average 72 cm wide), which within the large faces would have further enhanced the imposing facade. Moreover, the monumentality of entrances provided shelter from the sea wind creating a still area outside the front of the house where people probably congregated and worked. It is not known whether the entrance façades of the houses were additionally decorated. However, if any part of the house was decorated, this would be the most likely spot. In the rare cases of house decoration in South America, it is usually the front which received such treatment.²

² This is the case with the front ends of Barasana (Colombia) and Tukano (Vaupés) *malocas* (Botelho Malhano 1997; Duly 1979; Hugh-Jones 1979; Hugh-Jones 1995). Occasionally interior walls are decorated (Wilbert 1981:Fig.22).


Figure 9 House plan (Structure 4) with postholes in white $(\times 3)$ indicating the location of closing deposits.

Abandoning

Similar to the care seen in house construction, abandonment was a formal process in which the house was dismantled, posts removed, and items of bodily adornment, ceramic *adornos* and other items were deposited into empty postholes, which were then re-filled. Significant posts were probably curated across successive house structures (Samson 2010:262-268).

Ceramic vessels and their unique identifiers, the *adornos*, can be seen as artefacts iconic of household identities (Oudhuis 2008; see Lopiparo 2007 for a similar discussion on ceramics and houses in Terminal Classic Honduras). Vessels, used in the storage, preparation and serving of food and drink are intimately bound up with the identity of the house and the domestic cycle of its inhabitants. Moreover, each household probably either produced its own pottery, or received vessels from other households in reciprocal flows which sustained social relationships (through exchange within or outside the community, see Spielmann 2002). Production, use and discard of such household confection is integral to household reproduction. It is therefore highly appropriate that *adornos* were considered fitting for deposition, as they would not only inscribe the house with the identity of its inhabitants, but refer to the quotidian activities of communal food preparation and sharing which occurred in and around the structure.

Beads and pendants were also selected to be deposited into key postholes within the house. Such items of bodily adornment are markers of the cultured and identified body. Their deposition into significant locations in the house indicates some important relationships: that like the body, the house should be culturally and personally inscribed (see Mills 2008 on the ritual dressing of the house in the American southwest), that the identities of the household were tied up with that of the house, and that body and house were subject

to similar aesthetic proscriptions. This suggests a society in which inhabitants and house, and body and house are related and reference each other.

Renewing

Lastly, after the former house was abandoned, another structure was built in the same place, displaced by a few centimetres or metres. The new house structure was almost exactly the same as the old structure, replicating it in size, form and built in what must have been an intensive communal effort seeing as the old house was not available for habitation because the new one overlapped its plot. House renewal was not governed by functional necessity (i.e. roof rotting, hurricanes), but based on cycles determined across the house group or whole community as suggested by radiocarbon dates and the spatial patterning of the archaeological data (Samson 2010:Ch. 6). In other words, there is evidence that renewal was a coordinated practice across houses. The fact that this process of renewal occurs two, three, four, and up to five times for some houses, forming "House Trajectories" (Samson 2010), indicates there was an explicit concern with the perpetuation of the house. Moreover, lack of innovation and longevity indicates the house was a stable and conservative institution.

Discussion

In summary, the archaeological evidence suggests that an aesthetic of domestic beauty existed in the pre-Columbian site of El Cabo which expressed itself through the structure of the house. This was identified by focussing attention on various aspects of the lifecycle of the house such as the coordinated effort at construction, abandonment and *renewal*, the exacting execution of house foundations, the monumentality of the house façade, careful selection of building materials, dressing of the abandoned house like the dressing of the human social body and a responsibility to replicate or renew the successful house for perpetuity.

Challengers may comment that the presentation of the data emphasizes a rose-tinted picture of domestic sociality which dismisses the role of conflict in social life. The position taken here however is that questions of time and scale, not just research paradigm, are crucial to the discussion and that conflict and consensus strategies must be temporally and contextually situated (Santos-Granero 2000:268-287). An archaeological focus on the internal dynamics of the settlement, over an extensive time-scale (700 years of habitation) at critical stages in the lifecycle of the house (especially construction, abandonment and renewal) reveals strategies aimed at promoting community values of order, beauty and continuity through particular aesthetic behaviour. This strategy may have masked considerable competition, tension and division in real domestic relations. Nevertheless, identifying such strategies is the first step in analyzing pre-Columbian intra-settlement dynamics.

Moreover, it is argued that this chapter contributes a counterweight to the historic injustice in Caribbean archaeology, also apparent in Amazonian anthropology (Santos-Granero 2000; see also Viveiros de Castro 1996), in which conflict has been emphasized, to the exclusion of contract, with important consequences for the construction and essentializing of *the* native character. In the archaeology of the pre-Columbian Caribbean, there is little substantial evidence supporting conflict, yet warfare, coercion, raiding for marriage partners, predation (cannibalism) and personal aggrandizement are assumed impor-

tant catalysts or motors of social life (Keegan and Machlachlan 1989; Oliver 2009; Siegel 2004, 2010), whereas the domestic economy, community and household, and heterarchical power dynamics are relatively undertheorized (but see Boomert 2000: ch.11; Curet and Stringer 2010; Mol 2007; Oliver 2009: Veloz Maggiolo 1984).

If we turn our attention again to Native Amazonia, as discussed by Santos-Granero, the creation of the right conditions for successful social life does not just exist in an ideal realm, as an "unattainable utopia", rather its setting is the local community, village and co-residential group, and it finds its fullest expression in the growing settlement in which commonly held ideals are manifest (Santos-Granero 2000:283). These principles of domestic sociality within the community have implications for morality (self-control, prohibition of negative emotions/behaviour, intense sociality), cosmology (represented in mythologies), daily life (communal work and socializing) and aesthetics (maintaining a beautiful, ordered environment) (Overing and Passes 2000). Consequently, there is an aesthetics to Amazonian morality, because maintaining an ordered environment is a moral responsibility, and a disordered environment leads to unhappiness, and negative consequences (Overing and Passes 2000:4 and in the same volume Belaunde 2000; Kidd 2000). Despite the fact that the specific model of house-life which developed in El Cabo was locally and historically specific, nevertheless ethnographic analogies which highlight shared dispositions can inspire archaeological interpretation.

If we juxtapose this ethnographic situation with the qualitative attributes, form and living experience of the house in pre-Columbian El Cabo it suggests that there may have been an equivalence between indigenous domestic aesthetics and prescribed social norms. The house emerges as a joint enterprise from the collective community values of order, beauty and continuity. In other words, domestic aesthetics in El Cabo contributed to the creation of a tranquil and harmonious environment for proper social life.

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Plus d'une Langue (no more language / more than a language)

Archaeology, history and ethnography in the Guiana highlands

Renzo S. Duin

Six decades after the publication of *Tropical Forest Tribes*, Amazonia appears more complex than assumed thus far, more heterogeneous, more dynamic, and more socio-politically complex with regional elements of organization. This study demonstrates an integrated regionality in Wayana socio-political organization, based on in-depth ethnographic fieldwork conducted from 1996 to 2004 in over twenty Wayana villages and abandoned places of the upper Maroni basin (in Suriname and French Guiana). In due process, this paper critically evaluates past archaeological and anthropological studies of the region, particularly as to why the posited regional integrated organization has not been recognized hitherto.

Seis décadas después de la publicación del *Tropical Forest Tribes*, Amazonia parece ser más complejo que lo fue presumido antes, más heterogéneo, más dinámico, más complejo sociopolíticamente con elementos regionales de organización. Este estudio demuestra una regionalidad integrada en el organización sociopolítica Wayana, fundada en trabajo de campo etnográfico conducido de 1996 hasta 2004 en más de veinte pueblos Wayana y lugares abandonados de la cuenca superior Maroni (Suriname y Guayana francés). Entretanto, este tratado críticamente evalúa los estudios arqueológicos y antropológicos anteriores, particularmente en lo que se refiere a explicar porque la organización regional intégrale todavía no ha sido reconocida.

Soixante ans après la publication de Tropical Forest Tribes, l'Amazonie apparait plus hétérogène, plus dynamique et socio-politiquement plus complexe qu'on ne le pensait jusque là, laissant paraître des éléments régionaux d'organisation. Fondée sur des recherches ethnographiques de terrain approfondies, menées de 1996 à 2004 dans plus de vingt villages Wayanas et sites abandonnés du bassin du Haut Maroni (au Suriname et en Guyane française), cette étude met en évidence une régionalité intégrée dans l'organisation socio-politique des Wayanas. Parallèlement, ce traité examine d'un œil critique les études ethnographiques et archéologiques antérieures de cette région cherchant en particulier à comprendre pourquoi le postulat d'une organisation régionale n'a pas été reconnue jusqu'à présent.



Figure 1 Wayana situated in the frontier zone of Suriname, French Guiana, and Brazil.

Beyond Tropical Forest Cultures and Stone Age Indians

This study is situated in the current debate on socio-political complexity in the neo-tropics. I will specifically focus on the Guiana Highlands, the watershed between the Guiana Shield and the Amazon Basin (Figure 1). Amazonia appears more complex than assumed thus far (Heckenberger and Neves 2009; Silverman and Isbell 2008). The Guiana Highlands are archaeologically almost virgin territory (Abonnenc 1952; Duin 2006) and the ethnography of this region remains deeply rooted in what Eduardo Viveiros de Castro (1996) called the "standard model" of tropical forest cultures. Historically, however, complex and centralized societies have been recognized in the Guianas (Dreyfus 1983/1984; Grenand 1971; Rivière 1984; Gallois 1986; Whitehead 1988, 1994, 1998, 1999). Recent multi-disciplinary studies reveal that contemporary indigenous Guiana communities appear more heterogeneous than previously assumed, more dynamic, and more socio-politically complex with regional

elements of organization (Duin 2009; cf. Gallois 2005). When acknowledging a deep history of the indigenous peoples of Guiana, and no longer relying on site-based approaches only, a different picture emerges.

Preconceived ideas and problems of translation are at the heart of the current research in the Guiana Highlands. Therefore I refer in the title of this study to Jacques Derrida's deconstructive formula of the "*plus d'un*" and the reflection upon the singular and/or plural. There is a tradition of classifying archaeological complexes in the Caribbean and the Guianas following the language based dichotomy of Arawakan or Cariban. Then again, the pitfall of linking potsherds to languages demonstrates the power of Derrida's "*plus d'un*" as the archaeological record is "no more" language and "more than a" language. Communities are singular and/or plural. Communities are more fluid than language groups or material cultures. Time and again, ethnographic data is superimposed on archaeological findings without critical evaluation. Aim of the present work is to provide a meeting ground to facilitate multivocality in postcolonial transdisciplinary research (bridging between archaeological, historical, ethnographic, and indigenous voices) of socio-political organization in the past in the largely unknown Guiana Highlands. Now is the time for a peopling of the archaeological record and deep-time ethnography.

The Handbook of South American Indians (Steward 1948-1950) culminated and mediated the standard model of Tropical Forest Cultures as the culture types of South American Indians were defined and catalogued. Complex societies in South America were the Andean irrigation civilizations (essentially the Inca) as well as the theocratic and militaristic chiefdoms of the Greater Antilles (Taíno) and the 'Circum-Caribbean' (see also Steward and Faron 1959). The greater part of South America (mainly Amazonia) was lacking the typical "culture core" characteristics of chiefdoms, and therefore, by default, labeled "Tropical Forest Tribes" (Steward 1948; upgraded to "Tropical Forest Cultures" in Steward and Faron 1959) with here and there bands of nomadic hunter/gatherers. It was in the border zone of Brazil, Suriname, and French Guiana (in the Tumuc-Humac region; Figure 1), that the 1937 Dutch boundary expedition encountered bands of nomadic hunter/gatherers (van Lynden 1939:853; Meuldijk 1939:873-876; see also Ahlbrinck 1956; de Goeje 1943a; Geijskes 1970). Thirty years later a second "first contact" was made with these so-called "Stone Age Indians" which excited scientists, adventurers, and missionaries (Carneiro 1969; Schoen 1969). Such encounters supported the hypothesis that Amazonia was nothing more than a "counterfeit paradise" (Meggers 1971, 1996) unsuitable to sustain high civilizations.

Grounded in the neo-evolutionary episteme that simple societies developed into complex societies, Evans and Meggers (1960) applied, without critical evaluation, their ethnographic observations among the Waiwai in southern British Guiana to interpret their archaeological findings in the region. We have to credit them for these early ethno-archaeological expeditions in Amazonia, and it was the spirit of the time to conduct "rescue ethnography" on these disappearing "primitive" communities. They assumed that indigenous life had not changed and that these small autonomous and ephemeral villages were located in a pristine rainforest setting. These traditional settlements consisting of a single roundhouse housing the entire community were considered the unit of analysis. Following the then current definition of "Tropical Forest Tribes", the village was an autonomous unit and could thus be studied in isolation. Much has changed the past sixty years in Amazonian archaeology and ethnography. For Amazonia in general, there is a growing number of archaeologists unearthing large manmade structures (e.g., Erickson 2008; Heckenberger 1996, 2005, 2008; Heckenberger *et al.* 1999, 2001, 2003; Lima *et al.* 2006; Roosevelt 1987, 1991, 1999; Rostain 1994, 2008; Versteeg 2008). Their findings evidence pre-contact socio-political supravillage organizations, indicating that social complexity and large populations were not ruled out by environmental factors. Whilst aspects such as cosmologies demonstrate remarkable continuity, archaeological findings signify important changes of indigenous life in the past.

Roundhouses and villages

Roundhouses are archetypal in Guiana and seem to prevail (Roe 1987). A center for public gathering and ritual ceremonies surrounded by private dwelling compartments is demonstrated in case-studies among the Yekuana (Guss 1989; Arvello-Jiménez 1971, 1977), Waiwai (Fock 1963; Howard 2001; Siegel 1990; Yde 1965), and Trio (Bos 1973; Rivière 1995) (all Cariban-speaking peoples in the interior of Guiana). These studies furthermore acknowledge the influence of missionaries from the 1950s onward (for the case of Western influences on the Wayana see Boven 2006). Due to missionary intervention and other global influences, the "traditional" communal roundhouse model "exploded" into a settlement patterning wherein dwelling compartments of the communal roundhouse became private dwellings surrounding a community roundhouse. This community roundhouse was a reduced version of the communal roundhouse that once housed the entire community (Figure 2). This model of a post-1950s Guiana village with a community roundhouse in its center is congruent with the literature on the Wayana, exemplified by the village of Janamale (Darbois 1956; Mazière and Darbois 1953, 1959). Based on the photos of Dominique Darbois, and the personal histories of the son and daughter of the late Janamale, a plan view of the village of Janamale was reconstructed. The result was similar to the widespread post-1950s Guiana village, namely a public roundhouse to receive guests surrounded by private dwellings housing local inhabitants. Several Wayana villages follow this typical model, even though they are bestowed with modern influences such as corru-



Figure 2 Sketches of village plan views with a communal roundhouse (left) and a community roundhouse surrounded by private dwellings (right).

gated iron roofs, rectangular houses on stilts, a French school, and a dispensary. Elsewhere (Duin 2009), I have nevertheless demonstrated how the villages with community round-houses are unique rather than typical Wayana settlements.

At first, I took for granted that the Wayana community roundhouse (named *tukusipan*) was the only "traditional" structure. Then again, that this roundhouse withstood the modern influences of globalization is rather remarkable. These roundhouses, rather than being a mere backdrop against which village life takes place, play a central role in the complex socio-political organization of the Wayana. Female specialists produce bottomless vessels to protect the roof where it is penetrated by the central pole. These vessels are bottomless as they are meant to be penetrated by the central pole of the community roundhouse. Male specialists produce the distinctive wooden disk (maluwana) onto which historical men-killing monsters are painted. The shape of the roundhouse is in reference to a dome-shaped inselberg at the watershed between French Guiana and Brazil. Wayana oral history informs that it was at this mountain that the historical hero Kailawa, founder of the Wayana confederation, went to become immortal (Duin 2005:292). These roundhouses and the maluwana above all, are exemplary of how Wayana manage their history, today and in the past. Not insignificant is that only a paramount chief holds the power to request people to gather and manufacture the 40.000-plus palm fronds needed to roof this domed structure. Note that roofing of a *tukusipan* is not a basic necessity as these are public buildings rather than a dwelling that houses the entire community.

Beyond the house, village, and ethnic boundaries

Before expanding the analysis beyond the boundaries of the settlement, a few assumptions have to be established. First we have to acknowledge that traditional ethnic groupings were based on linguistic groupings such as Wayana, Trio [Tiliyo], Waiwai, Apalai, Emerillon [Teko] and Wayápi (the latter two are Tupi-speaking peoples, whereas the others are Cariban-speaking peoples). Secondly, we have to acknowledge the politically imposed boundaries of Guyana (former British Guiana), Suriname (former Dutch Guiana), French Guiana or *Guyane*, and Brazil. Contested zones remain. We also have to be aware that prior to 1900, French Guiana was larger than today. Thirdly, Anglophone researchers mainly studied the indigenous people of British Guiana, Dutch researchers focused on Suriname, French researches remained on French territories, while Brazilians and Germans conducted research in Brazil. Studies on the Wayana and Apalai, for example, were written in Dutch, French, English, German, and Portuguese, which does not facilitate literature research. Furthermore, as modern political boundaries cut through the Wayana region (Figure 1), these studies offer only part of a larger whole. Wayana and Guiana can thus be perceived as singular and/or plural (sensu Derrida 1986), as over time boundaries change and (new) identities emerge out of interaction.

Several villages have been mapped and plotted on the map. Traditionally, settlements have been the unit of analysis in Guiana, albeit intervillage relationships were recognized (Rivière 1984). Ethnic units were defined yet the location of indigenous peoples "appear to be as definite as anything can be in this ethnographic chaos" (Rivière 1969:21). In order to make some sense of this "apparent ethnographic chaos" the data has to be perceived from a more dynamic perspective. It is about historically situated (individual + society), rather than freezing (individual) + (society) in time. Rather than working on different scales, a true multi-scalar approach focuses on the relations between the various scales, as well as

on the relations between the units. In this case: the relations between the settlements, that is, the relations between the dots on the map. In other words, we have to focus on the dynamic social landscape laden with history.

There is one historical reference of more complex societies in the Guiana Highlands, namely from Claude Tony (1835, 1843). Based on this source, Pierre Grenand (1971) and Dominique Tilkin Gallois (1986, 2005) acknowledged socio-political difference between centralized confederations (*confederações*) of the past, opposed to the autonomous atomistic units (*grupos atomizados*) in the present. Although Peter Rivière (1984:83) referred to Tony's account, it was not further explored why this complex socio-political organization in 1769 in the Wayana heartland was no longer present. Or, as I argue, the complex socio-political organization was not recognized because the conventional model of autonomous villages reigns supreme in Guiana. Most case-studies serving as basis for overarching studies (such as Rivière 1984; Steward 1948; Gallois 2005) were site-based, and a site-based approach will not allow for an understanding of regionally integrated socio-political organization such as described by Tony in 1769 and recognized during my in-depth ethnographic research conducted since 1996 among the Wayana.

Let me zoom in on the frontier zone between Suriname, French Guiana, and Brazil (Figure 3), in order to shed some light in this apparent "ethnographic chaos" situated in history. Peter Rivière praised Protásio Frikel (1957:541-562, 1960:2) for his "conscientious and methodological attempt to order and classify the tribes of the whole region [i.e., Eastern Guiana]" (Rivière 1969:16), beyond a mere listing of real and imagined peoples (*cf.* de Goeje 1941, 1943b). When mapping out this apparent chaotically complex history of Trio subgroups (Rivière 1969:17-26; see also Bos 1998; Chapuis 2006; Frikel 1957:541-562, 1960:2), an image emerges that spatially distinguishes "friendly" Trio subgroups (light grey) from the so-called "wild" Trio subgroups. The "wild" subgroups (dark grey) correspond with a spatially rather restrict area in the mythical Tumuc-Humac range where nomadic hunter/gatherers were encountered, such as the "Stone Age" Akuriyo referred to earlier. By drawing the map of Trio subgroups and freezing them in time and space (fading boundaries and dotted lines are to make borders less strict), because we have to focus on interrelationships between these peoples.

It was in this frontier zone that in 1769 Claude Tony (1835, 1843) mentioned the Roucouyens. More than a century later, Jules Crevaux stated that "the Indians of the upper-Maroni, Jari and Paru, who are known in French Guiana under the name Roucouyenne, name themselves Ouayanas [= Wayana]" (Crevaux 1882:17; my translation). Historically, the Kukuiyana were situated in the region visited by Tony. Kukuiyana were named after the *kukui* (glowworm; *Lampyris noctiluca*, Elateridae) and contemporary Wayana say that the Kukuiyana are short of stature. Their northern neighbours were the Okomëyana. Although classified as a friendly people by Protásio Frikel (1957:545), contemporary Wayana say that the Okomëyana are assumed to have disappeared when the Wayana migrated from the south. When discussing the Trio subgroups with Wayana, they told me that, actually, Janamale (the Wayana paramount chief from the mid-twentieth century mentioned earlier) was a Kukuiyana. I thus had to rethink conventional linguistic categories as Tïliyo



Figure 3 A number of ethnic groups mapped in the frontier zone of Suriname, French Guiana, and Brazil.

(Trio) and Wayana. Some Trio subgroups assumed extinct, specifically the Okomëyana and Kukuiyana, now appeared at the heart of Wayana society. Ethnicity is a fluid concept and I argue that "the Wayana" did not migrate *en bloc* from Brazil to Suriname and French Guiana, as generally assumed. Wayana ethnogenesis, I posit, occurred when Wajanahle and Upului (from south of the watershed) encountered Kukuiyana and Okomëyana (north of the watershed) and established common grounds under the leadership of Kailawa; the Wayana confederation (consisting of heterarchical continuous social units) was born in the Guiana Highlands.

Wayana narratives on interrelationships are embodied by Tulupere (Duin 2009:151-159). The patterned reptilian skin of Tulupere was divided between Wayana and Apalai and served as a template for their basketry motifs (van Velthem 1976, 1995, 1998, 2001), and that is why Wayana and Apalai basketry motifs look alike. This event is said to have occurred at creek Achiki, the old frontier between Apalai and Wayana/Upului (Schoepf 1972:54). Killing this monster united Wayana and Apalai. As posited above, Wayana had made alliance with Trio subgroups (Okomeyana and Kukuiyana in particular), thus the killing of the water-monster Tulupere is metaphoric for the bridging of the old frontier between Trio subgroups and the Apalai (Figure 3). Basketry motifs are a mnemonic device to recall this watershed moment. Another unique sighting of Tulupere (this time its skin was entirely black), occurred at the Aletani, and well at the latitude of the frontier between Okomëyana and Kukuiyana (respectively a "friendly" and a "wild" Trio subgroup as discussed above). These were not innate friendly or wild people, other than these labels were given in relation to the main Trio subgroups, Pijanakoto above all. The historical hero Kailawa is said to have killed a Tulupere, but it was only after he had killed and entombed the monstrous caterpillar Kuluwajak in the Tumuc-Humac mountains (Duin 2005:292), that the Wayana confederation was established. Interrelationships exist in overcoming boundaries.

Reflection

Remarkable is that the stories of contact with the so-called "Stone Age Indians" mentioned in the beginning of this essay, took place in the very same region of the mythical Tumuc-Humac mountains where the Wayana confederation was born after the historical hero Kailawa had killed and entombed the monstrous caterpillar Kuluwajak in the Tumuc-Humac mountains, after he had established a path across the watershed, and after Kailawa had climbed the mountain resembling a domed roundhouse (Duin 2009: 415-422). Wayana bridged boundaries in the frontier zone between Suriname, French Guiana, and Brazil. This landscape where the Wayana confederation materialized, deeply saturated with history, was silenced by the search for Stone Age Indians. This landscape, a sacred landscape saturated with Wayana social memory, is today classified as "pristine" rainforest. The indigenous people have thus been written out of history.

Results of knowledge production are directly related to research strategies. When conducting research at site-based level, one will not acknowledge integrated regional structures. When data is collected in easily accessible places, e.g., along the coast, main rivers, main roads, and near missionary stations, no data is collected in harsh and difficult to access terrain. Therefore the Guiana Highlands remain almost virgin territory archaeologically and ethnohistorically. We have barely scratched the surface of Wayana sociality, the cultural history of the region, and socio-political organization in Guiana ... beyond the boundaries of a single village.

This deep-time ethnographic study crossing political boundaries and the boundaries of established disciplines is not only of importance to the Guiana Highlands. Caribbean archaeology is grounded in a comparable situation of a division of islands between colonial forces (British, Dutch, French, among others). Modern political boundaries did not exist for indigenous people in the past. Secondly the ramification of traditional units of analysis where one settlement represents one community does not allow for an understanding of regionality. Identities emerge in the interrelationships of communities. The connotation of "wild" versus "friendly" people, such as among Trio subgroups, may aid an understanding of these terms applied to indigenous people in the Caribbean, such as the classic distinction between "wild" Carib and "friendly" Arawak. These terms of reference are relational and subjective rather than objective labels. A multi-disciplinary approach focusing on interrelationships is needed for multi-scalar research questions.

My research among the Wayana would not have been possible without Ronnie Tïkaime, grandson of Janamale. Other Wayana, who had worked with anthropologists, told me that Ronnie did not know anything about Wayana history. We thus had found a common research agenda. To conclude in an emblematic Wayana manner: This I know. There is much more to tell, but that will be very long indeed. Well, it is like this. (*Tuwale lëken. Kohlenma lep, lome kuhpime tëtihe malalë. Ma, huwalëken*).

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ETHNOARCHAEOLOGY OF THE AMAZONIAN HOUSE Pre-Columbian and Jivaro continuity in Ecuador

Stéphen Rostain

The Upano valley, in upper Ecuadorian Amazonia, is characterized by numerous pre-Columbian artificial earth mounds. Built and subsequently abandoned by communities of the Upano culture between 700 BC and AD 400, some of these man-made mounds were re-occupied by groups of the Huapula culture between AD 800 and 1200. Archaeological excavations of one mound produced a well-preserved domestic level, permitting a spatial analysis of activities. Ethnoarchaeological studies have been conducted in the pre-Columbian Huapula house and in current day Jivaro houses. The spatial organization of one family unit could be understood. The reconstruction of activity areas in the Huapula house has similar characteristics and spatial organization as the modern Jivaros domestic units. This study thus concludes that cultural continuity exists between the Huapula communities and the present-day Jivaros in the region.

El valle del Upano, en la alta Amazonía ecuatoriana, se caracteriza por la presencia de numerosos montículos artificiales de tierra precolombinos, edificados y luego abandonados por comunidades de cultura Upano entre 700 AC y 400 DC y vueltos a ocupar, algunos de ellos, por grupos de cultura Huapula entre 800 y 1200 DC. La excavación horizontal de un montículo reveló un piso habitacional muy bien conservado permitiendo así, realizar el análisis espacial de las actividades practicadas. Se llevó también a cabo, un estudio etnoarqueológico en la habitación precolombina descubierta en la cima de un montículo, excavada en el sitio de Huapula, a fin de comprender la organización espacial de una unidad familiar Huapula. La reconstrucción de las áreas de actividad en la casa Huapula presenta características y una organización comparables con aquella de los Jíbaros modernos. Finalmente, se llegó a la conclusión de que las comunidades Huapula fueron los antepasados de los Jíbaros en la región.

La vallée de l'Upano, en haute Amazonie équatorienne, est caractérisée par la présence de nombreux monticules artificiels de terre précolombiens, édifiés puis abandonnés par des communautés de culture Upano entre 700 av. J.-C. et 400 apr. J.-C.. Certains d'entre eux furent réoccupés par des groupes de culture Huapula entre 800 et 1200 apr. J.-C. La fouille horizontale d'un tertre a mis au jour un sol domestique très bien conservé, permettant une analyse spatiale des activités pratiquées. Une étude ethnoarchéologique a également été menée dans l'habitation Huapula découverte au sommet d'un monticule et fouillée dans le site de Huapula. L'organisation spatiale d'une unité familiale Huapula a été interprétée. La reconstruction des aires d'activités de la maison Huapula présente des caractéristiques et une organisation comparables a celles des Jivaros modernes. Cette étude conclut que les communautés Huapula furent les ancêtres des Jivaros dans la région.

Introduction

In both Amazonia and the Caribbean, it is common for archaeologists to base their interpretations on ethnographic comparisons. However, modern indigenous material culture, settlements, and spatial organization, are often very different from the pre-Columbian situation. The introduction of iron artefacts (especially axes) shortly after the European contact period, completely changed the indigenous toolkit and as a result Amerindian activities. The more recent introduction of plastic containers will inevitably lead to the progressive abandonment of traditional ceramic vessels. This large discrepency between the pre-Columbian and modern context makes a one-to-one comparison of material culture difficult if not impossible. More similarities can be expected in the settlement organization, spatial lay-out and social distribution within the village.

An ethnoarchaeological approach allows for a better interpretation of the archaeological evidence and, perhaps, for a reconstruction of the continuity of some regional cultural features. Using ethnoarchaeological methodology in a small Palikur village in French Guiana about 20 years ago (Figure 1), I have evaluated how inferential reasoning used by archaeologists can lead to misunderstandings and faulty interpretations (Rostain in prep.). In other cases, ethnoarchaeology in the Amazon region has been used to demonstrate the formation of the archaeological context and the processes leading to features encountered during excavation (Siegel and Roe 1986). My experience in the Palikur villages of French Guiana teaches me that ethnoarchaeology is often the best way to solve particular archaeological problems and to provide an answer to questions raised by excavations.

The potential cultural continuity between the contemporary and pre-Columbian indigenous peoples of Amazonia allows for a comparative study. Ten years ago, I had the opportunity to use ethnoarchaeology in order to interpret archaeological data in the upper Amazonian region of Ecuador. Large-scale excavations have been conducted during a French-Ecuadorian program in pre-Columbian sites of the Upano valley, at the foot of the



Figure 1 Roof of an abandoned Indigenous house of the Maillard Savannah village in French Guiana. This Palikur settlement was studied during an ethnoarchaeological research in 1990. The Huapula floor presented in this paper seems to been protected by a rapid burying comparable to this roof which has fallen on the ground (photo by S. Rostain).

Andes, in southern Ecuador (Rostain 1999). In this region, Upano groups built numerous artificial mounds between ca. 500 BC and AD 400/600 (Rostain 2008). An eruption of the nearby Sangay volcano led to the abandonment of the settlements. Some centuries later, new communities arrived in the region and settled on the existing mounds. Excavation of the top of a mound at the Huapula/Sangay site revealed a very well-preserved anthro-



Figure 2 Map of the Upano valley locating pre-Columbian sites with artificial mounds (drawing by S. Rostain).

posol showing many cultural features and remains. Comparison with modern indigenous houses showed strong similarities between the archaeological floor plans and those of the contemporary Jivaro in the area. Jivaro communities are known to have been present in the Andean foothills for a long time, and this investigation has led to a more precise understanding of the connection to their pre-Columbian ancestors.

The Upano valley in Ecuadorian Amazonia

The studied archaeological sites are located in a specific landscape between the Andes and the Amazonian area in the south of Ecuador (Figure 2). This region is mainly characterized by High Amazonian rainforest, yet some mountainous features are also present. The Upano valley takes an unusual course because it runs parallel to the Andes and not perpendicular to it like most of the other rivers in the area. In fact, at ca. 1200 m amsl the Upano runs directly north-south because it is surrounded on both sides by cordilleras: the Andes in the west and the Vieja Cordillera de Cutucú (2305 m) in the east. The Upano riverbed is 0.5 to 2 km wide, bordered by high and steep cliffs between 70 to 100 m high that form two or three successive terraces (Figure 3). Archaeological sites are found between the small hills on the top of these cliffs. The steep cliffs along the river result from remarkable telluric actions. Located on the powerful and active seismic fault of the Sub-Andes (Bès de Berc *et al.* 2004, Legrand *et al.* 2004), the Upano basin forms a chaotic landscape subject to violent transformations. The seismic risk is high in the Upano valley and constitutes a permanent threat for its inhabitants.

The Upano valley is dominated by the erratic Sangay volcano reaching an altitude of 5230 m and measuring 10-12 km in diameter at its base. It is located 35 km northwest of the Huapula site and represents one of the most active volcanoes in the world. Ash clouds, flows of lava and mud, and pyroclastic emissions characterize its permanent eruptive activity (von Hillebrandt 1991). At the beginning of the twentieth century, the sound of its explosions could be heard at more than 600 km away. The eruptions of the Sangay affect the entire Upper Upano valley and influence the way of life of its inhabitants because they



Figure 3 The Upano valley (photo by S. Rostain).

can destroy everything in the surrounding region. The vegetation consists of a very humid Piedmont forest, but the valley has been progressively deforested by generations of colonists who have immigrated from the Andes, by exploiting wood and sowing *gramalote* grass (*Axonopus scoparius*) for cows. The result is a landscape of extensive pastures alternating with isolated patches of forest. During pre-Columbian times, forest must have covered the entire region.

This fertile valley has a long habitation history. From ca. 700 BC onwards, successive groups have occupied the terraces of the Upano River. Archaeological stratigraphies revealed during excavations and radiocarbon dating crossed with typological study of the pottery demonstrate a continuous cultural sequence with four successive phases (Rostain 2008):

The first communities of the Sangay culture arrived around 700 BC in the Upano valley but they did not build artificial mounds. Few remains have been found because it was apparently not a dense occupation and the quality of the ceramics is poor. The ceramic decoration is very simple: consisting of parallel incised lines, undulated ribs, and knobs.

Between 500 and 200 BC, Upano groups built the first artificial mounds along the river terraces (Figure 4), taking advantage of the natural terrain wherever possible. Upano pottery is well made and has many decoration types, but most common is red-banded incision: straight or curved incised lines that delimit red areas in order to create elaborate geometrical motifs. Other common decorations include incision, painting and negative painting. The most popular form is a flat bowl, often with a pedestal. Upano people exchanged their pottery, and probably other products from the rainforest, with Andean communities. The time and labor involved in building the mound complexes, the apparent hierarchy of sites, and the long-distance exchanges suggest a stratified organization of the Upano society.



Figure 4 The large complex of artificial mounds of Domono along the Upano River (photo by S. Rostain).

At some sites, the Upano phase was replaced by the Kilamope phase. The pottery is similar to the Upano variant but new decoration techniques and very elaborated motifs appear: such as string impression, incision, punctation, negative painting, etc. This mixture of Upano decoration with exogenous decoration could result from the integration of a new style in the Upano valley. Some techniques and motifs are very similar to Pastaza pottery, which is contemporary (Saulieu and Rampón Zardo 2006).

Around AD 400-600, an eruption of the Sangay volcano covered the upper Upano valley with a thick layer of ashes and caused the destruction of settlements (Rostain 2000). The Upano people abandoned their villages, apparently moving to the south as far as the Ucayali River in Peru.

Between AD 800 and 1200, small Huapula groups settled on the existing artificial mounds, but they were clearly less numerous than their predecessors. The pottery is coarser showing corrugated decoration and white-and-red painting. Excavation of large areas revealed a well preserved domestic floor with hearths, pits, postholes, seeds and domestic tools. Spatial analysis of the features and the distribution of artefacts permits the reconstruction of various activities and the domestic organization.

One of these pre-Columbian communities built habitation sites regrouping mounds complexes, which sometimes form extended settlements. Huapula – formerly called "Sangay" (Porras 1987)-, the largest site, extends approximately 2400 m along the left bank of the Upper Upano, with an average width of 300 m: covering more than 70 hectares. This site is made up of thirty mound complexes connected by a web of wide ditches (Figure 5). Due to its importance, the main excavations have been conducted in Huapula.



Figure 5 Map of the Huapula/Sangay site with the detail of the Complex XI (drawing by S. Rostain).



Figure 6 Central mound of the Complex XI of Huapula/Sangay during the excavation (photo by S. Rostain).

Complex XI is located on the high bank of the Huapula river, 600 m southeast of the Huapula site central complexes with large mounds. It covers an area of 70 by 50 m along the Huapula River, which is a small and low watercourse (Figure 5). This complex is distributed according to a recurrent spatial pattern: a central open space enclosed by peripheral mounds. Complex XI has two plazas separated by a large central platform (the "Central *Tola*") surrounded by oval or rectangular artificial mounds with flat or convex tops and cut natural contours forming three pseudo-mounds (Figure 7). The complex comprizes of seven mounds, two plazas and a dug pathway. Located on the natural mountain slope, the central platform reaches a height of 3.5 m while the flat top covers circa 130 m² (16 by 8 m). The central platform and the north plaza have been investigated by area excavation (Figure 6). A dug pathway, with a slope of 8° to 16° runs from the foot of the central platform to the Huapula River. This pathway is deeper where the natural slope becomes steeper and lower down it becomes gentle, facilitating the access to the water. There is a midden area on the northern edge of the complex, just at the top of the river ravine.

The mounds, rectangular or oval, are 3-10 m wide at the top and 10-50 m long, the height varying between 2 and 10 m. Some of them are entirely man-made, whilst others are modified existing slopes. The mounds are distributed according to a specific pattern. Most frequently, one complex consists of four mounds around a central plaza. In other cases, six mounds demarcate two plazas divided by a central mound (Complex XI). Drainages and excavated pathways cross the complexes. Pathways reach a river or connect, sometimes distant, sites.

Archaeological approach to the Huapula house

Many aspects of the Huapula house can be compared to contemporary Jivaro houses. An elevated location of the house is an important aspect for these communities. In Amazonia, drainage of the residential space is a top priority. Generally, gullies are dug around the houses to drain water and avoid a muddy floor. For this reason, high spots are often preferred places to build houses. The Huapula people settled on the top of the artificial mounds built by their predecessors of the Upano culture. Features of a Huapula house have been found on top of the central platform of Complex XI at the Huapula site (Figure 7). Modern Achuar of the Pastaza Basin also choose high locations at the edge of streams to build their houses, which generally stretch parallel to the river (Descola 1986:154). Traditionally, there are no villages or concentrations of houses but each family lives isolated. In the case of Complex XI, it was necessary to reduce the steep slope up to the small Huapula River. The inhabitants had to dig the cliff in order to reduce the inclination and to shape a gentler pathway down to the water. In a similar way, the Achuar secure river access from their houses by creating a plank road (Descola 1986:139). A garbage dump was also located on the edge of the cliff in Complex XI.

Many characteristics of the Huapula house have been revealed by the choice of a specially adapted excavation methodology. Up to the end of the twentieth century, archaeological fieldwork was limited to restricted test-pits in Ecuadorian Amazonia and, more generally, in the entire tropical forest area of South America. During our program in the Upano valley (1996-2001), a different methodology was used in order to get a more complete picture of past activities. Area excavations of the upper archaeological levels of mounds and plazas have shown many settlement features. The study of these features and the artefact



Figure 7 Domestic floor in the Eastern part of the central platform of the Complex XI of Huapula/ Sangay (drawing by S. Rostain).

distributions provided a picture of the use of domestic space and of the former occupation of the site. In Complex XI the entire top of the central platform, i.e. 90m², has been leveled archaeologically. The most common features were 49 postholes. They appear as dark spots surrouned by lighter soil and have straight walls with convex bottoms. Today, to drive in a post, the Jivaro use a blunt stick made of *chonta (Bactris gasipaes)* in order to dig the hole, then remove the earth by hand and that from the lower part of the pit with a chopped trunk of bamboo (*Guadua angustifolia*), which takes the sediment as pliers (Bianchi 1982). The precise house plan could not be reconstructed but its general shape was recognizable. It was settled on a maximal area of 80 m² and occupied almost the entire level surface of the mound which reaches circa 130 m² (Figure 7). This size is comparable to the majority of modern Jivaro houses.

Five $^{14}\mathrm{C}$ dates have been obtained from charcoal found in the hearth of the domestic Huapula floor:

- 1210 ± 80 y. BP i.e. cal AD 692 892.¹ (Beta-100537)
- 1070 ±70 y. BP i.e. cal AD 892 1023. (Beta-100538)
- 940 ± 60 y. BP i.e. cal AD 1031 1155. (Beta-100308)
- 850 ± 60 y. BP i.e. cal AD 1055 1259. (Beta-106087)
- 770 ± 60 y. BP i.e. cal AD 1211 1285. (Beta-100539)

These dates cover a range of five centuries. However, it is obvious that the house was not inhabited continually for 500 years. Most of the features are connected suggesting they correspond to a synchronic occupation. It is most probable that the house was occupied for a shorter span of time within this range.

Four rounded pits with round or oval plans have been found inside the Huapula house. Their diameters range from 40 to 80 cm. Two of them were empty and the third one contained a large ceramic jar. This vessel was instable because of a rounded base, so it was necessary to support it by partially burying the vessel in a pit. Today, the Jivaro and Quichua dig circular holes into the house floor to hold large brewing jars with rounded bases. The last pit, located at the eastern side of the house, not far from the edge of the mound, because it had a particular filling. It contained a large jar showing a restricted neck which was carefully cut just along its maximal diameter. Not one sherd of the bottom of this vessel was found in its immediate surroundings. The vessel had been placed above the pit so as to be used as a lid that closed the hole. In this way, a storage space was created that could easily be closed with a piece of wood.

Seven simple hearths were found to be distributed inside the house. They had diameters between 25 and 45 cm. They represent structures for cooking directly on the house floor without special equipment or requiring any digging. They were made of a thick and irregular layer of hard clay with a red colour. We made experimental hearths at the site that showed that the clayish yellow soil became red when fired. After two years, these experimental hearths presented an aspect comparable to those found during the excavation. In the center of the house, three hearths were located very close to each other forming a large and single cooking area of approximately 4 m². It forms an extended surface of compact soil, hard and reddish, with numerous particles of charcoal and burnt seeds, interpreted as resulting from the dispersion of the various hearths components. Similar phenomena can be seen today in Jivaro houses:

¹ Calibrated 1 sigma; Calib Radiocarbon Calibration Program rev. 4.3 © 1986-2005 M. Stuiver & P.J. Reimer.

"... in the immediate surroundings of hearths (...) important quantities of residual materials have been compacted in the accumulation of the trampled ashes that connect individual hearths. This phenomenon was obviously the consequence of the high frequency of use during the daily preparation of food when waste is continuously incorporated in the trample deposits of soft ash around hearths" (Zeidler 1983:181)².

Two other hearths were found grouped together more to the north, but also in the center of the house. The two latter hearths were located at the two ends of the house, respectively 4 m east and west from the major central group. Like today in the Jivaro house, various hearths are distributed in the Huapula house. It is probable that the two large central sets had a culinary function. One big grinding stone covered one of the three joined hearths. This is interpreted as the result of reorganization of the kitchen utilization. The two hearths at the extremities of the house probably had the function of lighting and heating (this was necessary because the site is 1000 amsl).

Seven big, unmodified stones were found placed near the central hearths. They likely served as supports for vessels during cooking. Today, the Jivaros generally use three stones to support a container above the fire or they put three trunks radially around the hearth. Various stone tools were found in the kitchen. Two large grinding stones were found in the center of the house around the three central hearths. They are made of basalt and were carefully manufactured and polished in the shape of a trough. They were disposed parallel to each other, at a distance of less than 1 m, face-to-face with their discharging sides in op-



Figure 8 The two grinding stones (metates) in the center of the kitchen of Huapula culture (photo by S. Rostain).

² All the citations have been translated by the author.



Figure 9 Schematic map of the kitchen features in the Complex XI (drawing by S. Rostain).



Figure 10 The corrugaded vessels of the Huapula house were used for chicha preparation. In the foreground, the smallest measures 24,5 cm high and the body diameter is 28 cm. The largest, at left behind, measures 48 cm high and 49,4 cm diameter (photo by R. Jones).

posite positions (Figure 8). So, the two women were in front of each other when they were grinding and close to the hearths heat. The two associated circular grinding tools (*manos*) were encountered close to the passive grinding slabs. Three other rectangular and flat *manos* have been found in the same area but they were too large to be used inside the grinding slabs. It is probable that they worked on other passive tools that have not been preserved, perhaps made of wood. One of these rectangular *manos* could secondarily be used as a polishing stone to manufacture needles or points. A small triangular slab which was finely polished by use served as a sharpener. In spite of a large range of available rocks, the stone assemblage of the Huapula site is poor and not very diverse. Apparently, other raw materials, like wood or bone, were preferred when it came to the manufacture of tools.

Huapula pottery is coarse and thick. Most of the vessels still have remains of soot on their bases, indicating that they were used to cook on open fires. Fragments of nine complete vessels - eight of them found in the kitchen - have been reconstructed. They include five big globular jars with restricted necks decorated with corrugated motives. Because of their instability due to the rounded base, they were kept vertical in a pit or were supported by rocks. One of these jars was cut and used as a lid to cover a storage pit. Two small, simple bowls without decoration were found together. Finally, a small jar with a vertical neck and a rounded bowl used as a lid were encountered which are better made than the other vessels and are decorated with white-on-red painted parallel bands.

The kitchen was located at the center covering an area of circa 15 m² which represents 1/6th of the total surface of the house (Figure 9). It consists of two groups of central hearths, supporting stones, two grinding stones and their *manos*, stone tools, pottery vessels and food remains. Four large jars, with the smallest one partially buried, were grouped just north of the central hearths (Figure 10). Two bowls were found close to these vessels. Sherds of the same container were not scattered on more than ca. 10 m² which is a very low rate of dispersal for a vessel at an archaeological site in Amazonia. Another characteristic of the pottery is that the base of each vessel was covered with soot, even the white-on-red painted jars and lid. There is a thick layer of soot on the big jars and a thinner one on the bowls and the decorated small jar. This implies that all of the vessels were used to cook on the hearth. This area was dedicated to the storage of food, especially of *chicha*, a thick and nourishing maize beer.

During the excavation, many burnt seeds have been collected from the kitchen area in the center of the house. A total of 87 burnt seeds have been found, of which 21 intact specimens and 43 fragments could be identified at the genus level, while the 23 remaining seeds remained unidentified (Leonard 1997; Gómez de la Peña 1998). Zea mays is the most commonly found species. Crushed grains of maize were found sticking inside a jar proving that *chicha* beer probably fermented in it. Other plants *-guaba* (*Inga edulis*), cherry (*Prunus*), blackberry (*Rubus*) and *granadilla* (*Passiflora*)- which can be eaten or used as a medicine. This sample is interesting because it was the first time that such a large variety of useful plants were found in a primary archaeological context in Amazonia. Archaeobotanical analyses led to the identification of 18 morpho-species representing five families (Mimosaceae, Passifloraceae, Phytolaccaceae, Poaceae, Rosaceae) and various mushroom types. Prior to the Huapula excavation, few botanical remains of similar preservation had been collected in primary archaeological contexts in Amazonia (Roosevelt 1980). For this reason, the numerous burnt seeds collected in the central platform are very interesting because of their diversity and their presence in a culinary area. Cultivated or wild, these plants were gath-
ered and taken to the settlement by its former inhabitants. While most of them were eaten, some also had a possible use as pharmacopoeia.

Sweet and bitter manioc (Manihot sp.) produce very few discernable remains in the archaeological register. Consequently, it is possible that this plant was also cultivated and consumed in addition to maize, which was the main staple. Maize can be cooked in various ways, but it seems that the Huapula people preferred to consume it as chicha. After separation from the cob, women ground the grains on the grinding stones. The obtained flour was mixed with water, with the possibility to vary the taste by the addition of different fruits. The fermentation agent was obtained with saliva by masticating the flour. This was spit into the liquid, which was let to settle at least one night or cooked on one hearth. It has been proven that *chicha* was prepared in the large globular jars found in the kitchen. Food remains stuck against the inner wall of one the jars presented typical micro-striations found on the surface of maize grains. So, it is obvious that maize constituted part of the food that was prepared in this vessel. The thick soot layer on the base of the pottery vessels shows that food was cooked in them. Today, many indigenous societies consume chicha which can even replace lunch because it is very nourishing. It is prepared in big brewing vessels similar to those from the Huapula house. The drink is offered in gourds or pottery bowls and very high quantities are produced and consumed during communal parties.

The early historic chronicles provide some indications of plant use by indigenous societies in Ecuadorian Amazonia (Renard-Casevitz *et al.* 1986; Rumazo González 1982). For instance, in 1542, during the making of a boat on the bank of the Coca River, Gonzalo Pizarro traded "*maize, yucca and guabas*" in the neighbouring indigenous villages (Carvajal (1542) 1992). Today, the guava fruit is still highly appreciated and consumed often. However, it is never more than a simple supplement to the ordinary diet. The pulp is eaten fresh or prepared and the big seed can be roasted. Guava juice is sometimes used as a dye. The bark, buds and leaves of the plant are used medicinally to reduce rheumatism inflammation, to treat liver complaints, to facilitate bowels, to cure mouth dermatosis and to soothe pain from ant stings. The Witoto grate the root and mix it with water in order to favour the birth of a boy.

Other edible plants found in the Huapula house include blackberries (*Rubus*), cherries (*Prunus*) and granadillas (*Passiflora*). Most fruits of the Rosaceae family are eaten in Amazonia, but Passiflora fruits are valued as well. For instance, in 1691, Pedro Ordóñez de Cevallos tried to establish peace with the Quijos and reported about granadilla: "*it is absolutely the best fruit in the world and eating it a smell of musk comes to the nose and a better taste than our pomegranates*" (cited by Estrella 1998:175). These plants also served as pharmacopoeia. *Prunus* is used in a variety of ways: as anti-inflammatory, antiseptic, astringent, purgative, diuretic, laxative and tonic. *Phytolacca* cures skin affections, disinfects and heals wounds, and eliminates dandruff. In a similar way, polyporus mushroom remains found in the house can cure dermatosis. Because *Prunus* wood is rot proof, it is used to build houses and to manufacture tools. Finally, two pottery spindle whorls have been found at the western end of the house, not far from a hearth not used for cooking. They are evidence of the cultivation and use of cotton (Gossypium barbadense), still amply used by peoples of Amazonia to manufacture clothes and hammocks.

Ethnoarchaeological approach to the Jivaro house

Ethnoarchaeological study of contemporary Jivaro houses aids the interpretations of pre-Columbian features found during the central platform excavation. Due to the good preservation of the archaeological context at the Huapula site, it has been possible to reconstruct the floor plan and the distribution of ancient activities in the houses. It was interesting to compare these data with the modern situation. However, few spatial analyses have been conducted in modern Amazonian houses. Most studies of residential areas are oriented towards the general village lay-out rather than the interior distribution of activities in a single house (Cauiby Novaes et al. 1983). A review of present Amazonian house plans shows that a great variety of house types exist throughout the region, from very simple shelters to the larger malocas (Carsten and Hugh-Jones 1995; Hugh-Jones 1985). The catalogue of the various indigenous residential patterns shows that the pre-Columbian Huapula house is especially similar to the modern Jivaro house. For this reason, the Shuar houses of the Upano valley were studied during the archaeological program. Besides, a study conducted by James Zeidler (1983) in an Achuar house of the Pastaza valley, Morona-Santiago province, proved to be particularly useful. Many similarities appeared to exist between the Huapula and Jivaro houses.

At present, the Achuar tribe, which is of Jivaroan linguistic affiliation, occupies the Pastaza valley, east of the Upano River, between 200 and 500 m amsl. The habitational Achuar pattern is characterized by an isolated house that constitutes the basic village unit. Occasionaly two or three houses are found to have been grouped together. The floor plan of the house is elliptic. It has no exterior wall, except during conflict situations when it is protected by a high palisade. The roof is made of woven palm leaves. Generally, houses measure 13-15 m in length, 8-10 m in width and 5-7 m in heigth (Bianchi 1982). It can be exceptionally large, containing as many as 20 persons and measuring 23 by 12 m (Descola 1986:141). Uxorilocal households tend to reside in one house, inhabited by 5 to 20 persons: that is the head of the family, his wives and children (Descola 1986; Zeidler 1983). Achuar and Shuar houses are organized according to sexual dichotomy (Harner 1995). While couples sleep together during the night in beds distributed in the house, the inner space is divided into two exclusive areas during the day. One sector, representing more or less half of the house, is reserved for women (ekent), while the other one is for men (tankamash). Kitchen and vessels are located in the female area where the wife has complete authority. In the male space, benches are available to receive visitors, to drink *chicha*, to eat and to manufacture tools. Each adult has a special place to perform activities and each woman has a personal area with her hearth and commodities (Zeidler 1983). Hearths are important features for the occupants: women use them to cook and prepare pharmacopeia whilst men need hearths to process medicinal and hallucinogenic plants as well as to make poison for hunting darts. Some labour and activities are only performed in specific places (Figure 11). For instance, maize is ground in a single area. Chicha is preserved away from hearths and consumed in the central space. Each woman stores one or more jars (muits) filled with *chicha* in a particular place, along with some bowls to offer it. So, each woman is identified by her large visible brewing vessels in the center of the house which are symptomatic of her status level in the family and the society. "Prestigious women who hold large gatherings in their houses make a lot of beer, and the number of beer jars in a woman's house is a statistical indicator of her status" (Bowser 2004:22). The space dedicated to drink chicha is used by both males and females. Two typically male activities are conducted in the pe-



Figure 11 Domestic activities in the Jivaro house at Pumpuentza (from Zeidler, 1983: fig. 5). 16 persons lived in this building of $18,2 \times 10 \text{ m}$.



Figure 12 Domestic activities in the Huapula house of the Complex XI (drawing by S. Rostain).

riphery of the house: sharpening of *machetes* and the manufacture of blowpipes. Beds are platforms (*peak*) distributed along the wall of the house with a personal hearth at the foot of each.

Parallelisms between the Huapula and Jivaro houses

The reconstruction of activity areas in the Huapula house provides characteristics and a domestic organization comparable to those of the Achuar house (Figure 12). Located on top of an elevated area, it has a surface of approximately 80 m². The central kitchen was composed of hearths with stone supports, grinding stones and associated *manos*, large pottery jars and bowls. Only one family inhabited this house but the presence of two grinding sets suggests that two women lived there. Such a characteristic corresponds to a polygamic structure of society. Various cultivated and wild plants were used: maize was the main staple, consumed primarily as chicha. Guabas, cherries, blackberries and granadillas were eaten. Some of these plants could also have served as pharmacopoeia, especially the species Inga, Prunus and Phytolacca. Women spun cotton string in the western part of the house. Finally, the domestic remains found in the Huapula house of Complex XI comprize of seven hearths, seven supports of stone, four pits for vessels, two *metates* and the accompanying two manos, three large manos, cutting stone tools, five large brewing jars, two bowls, one small jar and its lid, a few other vessels, 87 burnt seeds, all the result of cooking activities. Furthermore, items including a hammer stone, a sharpener, a polishing stone and two spindle whorls indicate craft activities were taking place. Two hearths intended for heating were located at the two extremities of the house.

Maize grinding and cooking was done in the center of the house. The presence of two grinding stones (metates) and the two associated hand tools (manos) near the central hearths, as well as the two spindle whorls suggests that two women lived in the house. Today, each Achuar wife owns her personal tools: "the female 'tool kit' is duplicated in each activity area and consistently located around immobile features, as the central hearth, the bed, etc" (Zeidler 1983:172). In this case, the presence of double tools most likely indicates a mother and daughter living in the same household. Large brewing jars and the associated pottery bowls were kept in the eastern part of the kitchen. Women collected the chicha in bowls from this storage area in order to serve men and visitors. In modern Achuar houses, such big jars are grouped in the central area of the female sector as well. Moreover, shape, paste, size and corrugated decoration of the Huapula and actual Jivaro jars are similar. The persistence of vessel shape and a specific type of decoration during more than one millennium in the Morona-Santiago province of Ecuador is remarkable. However, this situation has also been encountered in other parts of Ecuadorian Amazonia (Guffroy 2006). Like today, different activities were conducted in specific areas: sharpening of cutting tools, polishing of wood, spinning of cotton string with pottery spindle whorls. Many archaeological data point to the existence of a common spatial pattern in the Huapula and the Achuar houses. The preeminent feature is the division of the inner space according to the gender division and the existence of areas dedicated to specific tasks.

Conclusions

Large-scale excavations at the Huapula site offered insight into a prehistoric settlement location. Connections have been established between the remains and features found in the same anthroposol, dated between ca. AD 800 and 1200. This particular archaeological surface represents the last occupation of the place and its traces are very well preserved. The excavation revealed the techniques of house building, the mound function and the chronology of the occupation. Moreover, it was possible to recognize the plan of one particular house and to interpret the ancient activities that took part in it. The spatial organization of one Huapula family unit could be understood.

An overview of the modern indigenous settlements in Amazonia shows that the Huapula house is comparable to that of the Jivaro. These two populations settled in the same area at different times, but such an identical location does not prove any cultural continuity between them. It is more interesting to study the Jivaro house which shows features similar to those excavated in the Huapula house. No other house was found in the surrounding area. The Huapula house covers an area of circa 80 m² with a rectangular layout and rounded ends. These dimensions suggest that is was inhabited by a single family. Most of the tools



Figure 13 "A schematic depiction of the spatial organization of women's and men's visiting areas in Achuar and Quichua houses in Conambo" (redrawn from Bowser and Patton, 2004: fig. 6).

and artefacts found could be attributed to female activities. Most of the basic tools, such as grinding stones and spindle whorls, were found in pairs. This suggests the presence of two female occupants in the house, each with her own basic implements (Figure 13). A similar polygamic organization and isolated dwelling sites are also typical of Jivaro society.

Location, size, features and remains of the Huapula house are closely comparable to those of modern Jivaro settlements, located in the same Upano valley and the nearby Pastaza Basin. Moreover, the ceramic vessels show stylistic similarities with Jivaro pottery. The activities carried out in the neighbourhood are similar in both cases. The definition of the precise inner spaces for men and women with particular use, sociability and rights, seems to be a priority in the Huapula as well as the Jivaro houses. Besides this gender division, areas with a specific function are delimited by the arrangement of furniture and features. The "domestic spaces are public places, too, that the boundary between public, political life and private, domestic life is often indistinguishable, that intimate, social, and public interactions occur in almost every home, and that women's and men's domestic and political lives are distinct yet inseparably intertwined" (Bowser and Patton 2004:179). The many similarities of the pre-Columbian and contemporary houses suggest that Huapula society may represent the first appearance of Jivaro culture in the Upano valley. If so, it is possible to push back the arrival of the Jivaro in the region by more than 500 years.

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CONTEXTUALIZATION OF AMAZONIA ARTEFACTS Indigenous cosmologies and the Nature/Culture divide

Sonia Duin

This study demonstrates how the ethnography of indigenous religions provides an approach to bridge the nature/culture dichotomy. In-depth ethnographic studies are crucial for the contextualization of Amazonian Indigenous peoples' relation to nature. The Amazonian Collection at the Florida Museum of Natural History of the University of Florida was confiscated following legal precedents of the CITES convention. Overlooked in this international legislation is the complexity involved in the social and spiritual values in the cultural context of some endangered species, and rather imposes an artificial divide between nature and culture. Contextualization of objects may possibly have implications for conceptualization of certain so-called "eco-facts" of the archaeological record.

Este estudio demuestra como la etnografía de las religiones indígenas proporciona un enfoque para unificar la dicotomía de la naturaleza/cultura. Estos estudios etnográficos profundos son cruciales para la contextualización de la relación entre los indígenas Amazónicos y la naturaleza. La Colección Amazónica del Museo de Historia Natural de la Universidad de Florida fue confiscado siguiendo los precedentes legales de la convención CITES. Ignorado en esta legislación internacional es la complejidad de los valores sociales y espirituales del contexto cultural de algunos de los especies en peligro de extinción, y ha arrojado un división artificial entre la naturaleza y la cultura. La contextualización de objetos podría tener implicaciones para la contextualización de ciertos "eco-factos" supuestos del registro arqueológico.

Cette étude montre comment l'ethnographie des religions indigènes permet une approche qui comble la dichotomie entre nature et culture. Des études ethnographiques approfondies sont cruciales pour contextualiser la relation qu'entretiennent les peuples indigènes avec la nature. La collection amazonienne au Museum d'Histoire Naturelle de Floride de l'Université de Floride a été saisie à la suite de précédents juridiques émanents de la convention CITES. La complexité des valeurs sociales et spirituelles que représentent certaines espèces menacées dans un contexte culturel est négligée par cette législation internationale qui préfère imposer une division artificielle entre nature et culture. Par ailleurs, la contextualisation des objets ethnographiques pourrait peut-être avoir des implications pour la conceptualisation de certains prétendus « écofacts » attestés par l'archéologie.

Introduction

[In South America, birds are] sacred beings, transformations of the divine Sun and other deified phenomena of nature, as well as allies of the shaman, whom they assist in his role as mediator between the human and nonhuman realms. Thus, in South America, birds and the use of their plumage are inextricably bound up in the ideology and techniques of shamanism (Furst 1991:93).

Science is certainty; research is uncertainty. Science is supposed to be cold, straight and detached; research is warm, involving and risky. Science puts an end to the vagaries of human dispute; research creates controversies. Science produces objectivity by escaping as much as possible from the shackles of ideology, passions and emotions; research feeds on all those to render objects of inquiry familiar (Latour 1998:208-209 in Nowotny *et al.* 2001:2).

This study is a critical evaluation and contextualization of the ethnographic objects present in the Amazonian Collection from the Florida Museum of Natural History (FLMNH) at the University of Florida (UF). The theme that guides this study is Indigenous Amazonian perspectives and practices, represented by the *payé's* (shaman's) point of view, in contrast to the Nature/Culture divide present in western scientific knowledge production, i.e., natural science. These are two ontologically distinct perceptions on nature. Alternative realities become apparent in ethnography as from an indigenous perspective; Nature and Culture are interwoven and constantly emerging. In contrast, the natural science standard classification, or taxonomy, as embedded in western scientific knowledge, imposes a divide between "nature" and "culture".



Figure 1 Bororo shaman's turtle rattle with feather adorned carapace (A) and undecorated plastron (B). Head and legs molded in beeswax. Collections of the Anthropology Division of the Florida Museum of Natural History, FLMNH Temp. No. 2216. (Photo's by Duin 2007).

The critical evaluation and contextualization of the Amazonian Collection contributes to the discussion of ethnographical investigation in the context of archeology. Ethnographical and ethno-historical accounts have been applied to attest to the evidence of shamanism and further contextualization of the use of shaman's objects in the archaeological past as, for example, the Taíno shaman (*behique*) (Roe 1997). Roe (1997) draws on Amazonian ethnographies (e.g., Roe 1982) to interpret archaeological finds and the importance of animal iconography. In addition to animal iconography, animal body parts are used in a shaman's objects (Figure 1). Due to archaeological methods and techniques employed (particularly zooarchaeology), some of these objects can possibly be overlooked as objects of a shaman (i.e., cultural objects), if zooarcheological research is mainly situated in the context of food consumption. A multidisciplinary collaboration among zooarchaeologist, archaeologist, historian and anthropologists is necessary to overcome the nature/culture dichotomy.

Revisiting the Nature/Culture Dichotomy

The natural sciences, or what Nowotny *et al.* (2001) called a "mode-1 knowledge production," are situated in what Bruno Latour (1993) called "The First Great Divide" (Figure 2). The First Great Divide is internal partitioning Nature from Culture. The Second Great Divide causes disconnection between "Us" and "Them" or the "West versus the Rest." The established disciplines prefer their ontology of mode-1 knowledge production above indigenous knowledge productions. As demonstrated by ethnographies in various parts of Amazonia (e.g., Århem 1993; Descola 1986; Lima 1996; Viveiros de Castro 1998) the Nature/Culture divide assumed by natural sciences is not present among indigenous peoples.

Nowotny addressed the issue of disconnect between the "West" versus "the rest" as one-way communication. This communication flows from Science (west) to society (the rest), with little attention given to the ways in which society communicates with Science (Nowotny *et al.* 2001). Most scientific disciplines aim for replicable results and definitive answers, e.g., defining the taxonomy of species (Lévi-Strauss 1962), or the "classification of plants and animals is one aspect of the social objectification of nature" (Descola and Pálsson 1996:85). Nowotny *et al.* (2001) elaborated upon the mode-2 knowledge production or interdisciplinary research, multivocal, generated in the context of application, and often resulting in new questions. Anthropology is such an interdisciplinary mode that in-



Figure 2 The Nature/Culture Divide.

cludes specialists following both modes of knowledge production. Mode-2 knowledge production is especially well suited to anthropology because it allows for a non-western voice, and is therefore socially accountable.

Instead of an essentialist metaphysic where Nature is opposed to Culture, the pajé worldview, or "shaman's perspective," allows for a more dynamic approach where there is no clear distinction between Nature and Culture. Amerindian Perspectivism (Viveiros de Castro 1992, 1996; see also Lima 1996) is an example of an anthropological approach to understanding the complex relationship between nature and culture. In this approach, Eduardo Viveiros de Castro states that humanity is the common condition of both humans and animals, elaborating on Philippe Descola's idea that the "common predicate as nature's beings is not [hu]man as species but humankind as condition" (Descola and Pálsson 1996:93; Descola 1986:120). The term Amerindian perspectivism is based on the central idea of the characterization of indigenous cosmologies. It is the notion that the world of native cultures in the Americas is inhabited by many species of beings endowed with consciousness and culture. This idea is held on the premises that the exterior physicality of every species is a type of clothing (a cloak), hiding a human outward appearance. Normally the common condition of humanity is only visible through the eyes of the same species, or to certain transspecific beings such as the shaman. What distinguishes Amerindian cosmologies is a development sui generis of the idea that each species is endowed with a particular singular point of view.

Amerindian perspectivism, as outlined above, has its foundation in mythology; a universal thought that in mythical time humans and non-humans coexist (in the present time, animals are ex-humans). The partition of nature and culture, first outlined in La Pensée Sauvage (Levi-Strauss 1962) and further developed in Claude Levi-Strauss's Mythologiques (commencing with The Raw and the Cooked) where myths on relations between humans and non-humans in Amerindian societies concluded in a dichotomy between nature and culture. Some 25 years after its publication the nature/culture discourse reemerged, rather advocating that the nature/culture dichotomy is inexistent for Amerindians (Århem 1993; Descola and Pálsson 1996; Lima 1996; Viveiros de Castro 1996). Modern cultural relativism deems one Nature with several cultures. When considering ethnographies of Amerindians, it is apparent that all beings see the world at the same manner; what changes is the world that they see. Viveiros de Castro stated that perspectivism is not relativism but multinaturalism, he proposed that in Amerindian thought there exist only one culture with multiple natures. Accordingly, perspectivism is multinaturalism because perspective is not a representation, as representation is property of the spirit, but perspective is in the body. For Lévi-Strauss, structural relations between binary opposition were situated in the mind, not in the body.

In this Nature/Culture discourse, Philippe Descola focused on the relationship between humans and non-humans. He proposed that, among Amazonian indigenous people, the differences between humans and non-humans are of 'degree', not of Nature. Initially he proposed animism to explain these relationships, as inspired by the sociological theory of totemism of Radcliffe-Brown, and he constructed a hybrid of the theories of Lévi-Strauss and Radcliffe-Brown which he coined "animism." Later, Descola retracted from this theoretical sociocentric position and defined his "new animism" as an 'object' 'body' that has similar interiority and different physicality. Among indigenous people humans and nonhumans have similar interiority; they all have souls, despite of their different physicality. Animism prominent among Amazonian indigenous groups is a continuity of souls and a discontinuity of bodies, where people endow plants, animals and other elements of their physical environment with subjectivity and establish with these entities all types of personal relations. In this model, because of its common subjectivity, animals and spirits are said to possess social characteristics. Descola (1996, 2009) proposed that humanity is the common condition and that there are three modes of objectifying nature: totemism, animism and naturalism. Accordingly, one single mode of relations between humans and non-humans should not be the default in understanding all human relations in the world. Descola was able to debunk the universality of the naturalists as a default, and bring to the foreground what others scholars could not, which was a world free of the false unification of a naturalist mode of thought.

The dichotomy between Nature and Culture is thus not as clear-cut as implicit by the natural scientists. Recently Turner (2009) and Santos-Granero (2006) called for a renewed anthropology of the senses in Amazonian studies claiming that this is what is lacking in the Amerindian perspectivism. A recent contribution to Amerindian perspectivism was provided by Overing (2006) in the form of a corporeal perspectivism of the senses (Tipiti, Volume 4, Number 1-2, 2006, compiled by George Mentore and Fernando Santos-Granero). Accordingly, these embodied Amerindian Modes of Knowledge broaden the senses of mainly visual oriented perspectivism ("point of view" [Viveiros de Castro 1986] with emphasis on the visual) (compare with Rivière 1994). Not only humans and animals "see" other beings as different, these differences are embodied in the senses. Meanwhile Amazonianists scholars continue their quest for a common ground, where all these different facets of intersubjectivity can be discussed integrally.

This discussion has implications for archaeology. Archaeology relies upon the natural sciences in its methods and techniques. For its interpretation, however, it often draws on anthropological models, and can thus serve as catalyst for bridging both modes of knowledge production. Multidisciplinary research, including zooarchaeology and ethnoarcheology, among others, can be a tool to understand the divide between nature/culture. The formation of a meeting place for mode-1 and mode-2 knowledge production in the context of application is suitable for investigative research to arrive at an archaeological context.

Amazonian Collection at the Florida Museum of Natural History

The Amazonian Collection from the Florida Museum of Natural History (FLMNH) at the University of Florida (UF) was confiscated following the guiding principle of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES). The collection was confiscated by the United States Fish and Wildlife Service (USFWS) in violation of the following laws and legislation: (1) the Convention on International Trade in Endangered Species (CITES), (2) the Lacey Act, (3) the Migratory Bird Treaty (4) the US Endangered Species Act, and (5) US Customs and Border Protection. The Amazonian Collection was donated to the Board of Trustees of the University of Florida. The collection was deposited under the care of the Florida Museum of Natural History in March of

2005 by USFWS. The FLMNH is the repository¹ institute of the Collection. Under the guidelines of the Transfer Order Surplus Personal Property of USFWS, the conditions of the donation are as follows; no sale, barter, or trade of items, the purpose of the donation is to educate the public about the illegal trade in wildlife products and during museum exhibitions overtly indicate that the objects were exported out of Brazil illegally. The CITES preamble², intended to protect and preserve wild fauna and flora, was developed by natural scientists using guidelines of established disciplines such as biology and zoology. Within natural sciences it has been a tradition of labeling and taxonomy classification. Consequently the core of CITES is its appendices with taxonomic lists of species to be protected. This form of generating knowledge is what Helga Nowotny and colleagues (2001) called mode-1 knowledge production.

In fall 2005, the author, per Dr. Heckenberger's request, identified the cultural group of numerous objects in the Amazonian Collection, among others from the Satere-Mawe (indigenous people from the Central Amazon). These objects included several hundred gourd bowls, wooden spoons, rings, necklaces, and bamboo tubes, identified as tourists' trade items (see Duin 2009). In the summer of 2007 the author began documenting the remaining unidentified objects (over 500 objects) of which most are unique pieces of featherwork. Over 2500 objects have been registered and catalogued. The documentation included identifying, photographing, database registration and cataloguing. A selection of 18 objects from the Amazonian Collection representing the great variety of featherwork found throughout Amazonia, illustrated in the Map of the Florida Museum Amazonian Collection (Duin and Duin 2007)³. This collection of indigenous Brazilian ethnographic artifacts contains objects adorned with feathers and other parts of endangered animal species, such as bone, teeth, claws, and feathers. To demonstrate the complexity of the Amazonian Collection, the author curated the exhibition titled "Voicing Indigenous Artefacts," displayed at the Samuel P. Harn Museum of Art in Gainesville, Florida (July to September 2009). Nine spectacular featherwork objects were selected from the Amazonian Collection, amongst which a shaman's shell turtle rattle (Figure 1).

Ethnographic contextualization of shaman's objects present at the Amazonian Collection

For this paper I will focus on the objects of the shaman present in the Amazonian Collection, raw material, use, and symbolism, and the archaeological signatures of, or the lack of, these objects. In South America the "shaman" is called *pajé* (Tupi) or *piyai* (Carib). During first encounters it was said that Amazonian people "are so outside of reason that they adore the Devil by means of his ministers, called *pagé*" (Andrè Thevet [1557] in Narby and Huxley 2004:13). "They (the native peoples of Brazil) believe in a thing...like a pumpkin (i.e., maraca rattle). Each male has his own [*maracá*]. Some whom they call Paygi [*pajé*] and

¹ A repository agreement is an agreement under which a facility such as a museum or archaeological center provides professional, systematic and accountable curatorial services on a long-term basis to another entity (such as a state government, or the Federal government) for collections that the museum does not own (In AAM Accreditation Program – Application: Instructions, Guidelines and Glossary. 2005:5).

^{2 &}quot;Recognizing that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come; Conscious of the ever-growing value of wild fauna and flora from aesthetic, scientific, cultural, recreational and economic points of view" (CITES Preamble in Wijnstekers 2003:483).

³ Available at http://plaza.ufl.edu/duin/ publications/PublicationsonWayana/HARN_2009_Poster.jpg.



Figure 3 Close-up of shaman's cigarettes. Collections of the Anthropology Division of the Florida Museum of Natural History, FLMNH Temp. No. 2224 (Photo by Duin 2007).



Figure 4 Araweté rattle named aray. Collections of the Anthropology Division of the Florida Museum of Natural History, FLMNH Temp. No. 2444 (Photo by Duin 2007).

these are looked up to [in the same manner] as we revere soothsayers. These $[paj\acute{e}]$ people travel through the land once a year, visiting all the huts. They pretend that a spirit from a foreign, far-off place... if [only] they [the $paj\acute{e}$] ask the spirit to do so, this power would be granted" (Staden [1557] in: Whitehead 2008:124-125; additions in square brackets by Whitehead 2008; emphasis and addition in brackets by author). Next to the maraca, the cigarette is also one of the main tools of the shaman to interact with the otherworld (e.g., Reichel-Dolmatoff 1975:81; Viveiros de Castro 1986:531-37). "Tobacco is omnipresent in the life of the Araweté people ... The cigarettes are 30 centimeters long, made from the leaves that are dried by fire and rolled in leaves of *tauari*, it is the ultimate social excellence ... but just few men are 'the eaters of smoke' – the shaman" (Viveiros de Castro 1986:531;

my translation) (see Figure 3).⁴ It is beyond the scope of this paper to discus in detail the historical documents and ethnographic studies related to shamanism, other than I will focus on the tools used by the shaman.

There is a wide variety of shamans rattles in Amazonia and some exemplars are present at the Amazonian Collection, such as the Bororo shaman's rattle (Figure 1). In 1724, Lafitau described and illustrated a wide variety of rattles, including a rattle in the shape of a turtle similar to the Bororo shaman's rattle present at the Amazonian Collection. This rattle is made of a tortoise shell adorned with blue and yellow feathers, set off with red feathers. The attached head and legs are shaped from beeswax. Another example of a shaman's rattle in the Amazonian Collection is the rattle of the Araweté shaman called aray (Figure 4). This rattle is made from woven arumá (Ischnosiphon sp.) in the shape of an inverted cone. The cone is covered with flocks of wild cotton, except the base which is left exposed. Fragments of shells are found inside the cone. These shell fragments produce a high-pitched sound when the rattle is shaken. For the Araweté shaman, after smoking his cigarette, this rattle is the most essential instrument. The rattle can however be used by non-shamans for small cures, as almost all Araweté male adults are a little bit of a shaman. According to ethnographical accounts, and absent in Figure 4, are four red tail feathers of Ara macaw inserted between the cone and the cotton. The aray is considered an instrument par excellence of transformation. Similar to tobacco, the aray is an instrument of knowledge that enlightens the shaman. According to Viveiros de Castro (1986:537), the Araweté's rat-



Figure 5 Bororo shaman jaguar necklace. Collections of the Anthropology Division of the Florida Museum of Natural History, FLMNH Temp. No. 2171 (Photo by Duin 2007).

^{4 &}quot;O tabaco é onipresente na vida Araweté. Os charutos de 30 centimentros, feitos de folhas secas ao fogo e enroladas em casca de *tauari*, são uma coisa social por excelencia..., apenas algums homens são "comedores de fumo" – xamã" (Viveiros de Castro, 1986:531).

tle corresponds to the Tupinambá *maraca* described by Staden. Although perishable materials as basketry and cotton most likely will be absent in the archaeological record, a turtle carapace and pieces of shell may be recovered archaeologically. But this is not to imply that all turtle shell and shell fragments are part of shaman's objects.

An animal that has a special place in the shaman's world is the jaguar. The Jaguar is considered the alter ego of the shaman. The Tukano term for payé [ye'e or yai] is the very same name for the jaguar in Tukano (Reichel-Dolmatoff, 1975:101). The shaman (payé) embodying the Jaguar is twofold: a) by means of jaguar skin body painting the body of the shaman becomes a jaguar skin, b) the shaman can wear Jaguar body parts, for example jaguar teeth incorporated in a necklace (Figure 5), thus appropriating the jaguar body parts as the shaman's own. The fluidity between nature and culture is thus perhaps most noticeable in the case of the Jaguar/Shaman.

The shaman's objects discussed above, except the cigarettes, are adorned with feathers. Generally it is assumed that these feathers originate from wild birds. I will therefore further explore the relationship between the shaman—and indigenous Amazonian people—and the world of birds. For example, in South American cosmology, the harpy eagle has a special place (Roe 1982:257-258), not only is this largest of American eagles, it is considered the shaman's alter ego in the sky (Furst 1991). The relation between animals and birds in particular, such as described for Amazonia, is also acknowledged in the Caribbean: "If sentient trees demonstrated will and knowledge, so much more so did animals, birds, and insects...the shaman called upon to reside in his body. These creatures were the wild animals of the Taíno island world, mythic substitutes for mainland analogues [animals]. To attract spirits, Taíno shaman frequently beautified himself with feather adornments and face painting, as do contemporary shamans in the Amazon" (Roe 1997:138). However, based on ethnographic and ethnohistorical accounts the concept of "wild" birds is more situated in a western point of view, than an indigenous Amazonian perspective.

The domestication of birds

Many indigenous populations, past and present, breed pet birds for the sole intention of obtaining feathers for the purpose of making feathered adornments, such as described in this paper. This practice is documented in historical accounts, and can be considered an essential component of Amazonian culture. In one of the earliest ethnographic accounts of Amazonia, Hans Staden (1928, 2008 [1557]) described the close relationship of the Amazonian Indians (specifically the Tupi speaking Tupinamba) with colourful birds and other animals. Illustrations in Staden's accounts and those of his sixteenth century contemporaries (Jean de Léry 1578; André Thevet 1557; Theodor de Bry 1592) depict lavish feathered costumes. Staden noted that the Tupinamba treasured the feathers of birds, in that "he that has many feathers is rich" (Staden 1928:147 [1557]). During his captivity, Staden observed the importance of gathering feathers from mature nesting birds because they are more colourful:

"I was captured in an island in which water-birds nest, the birds are called Uwara, and they have red feathers. The savages asked me whether their enemies the Tuppin Ikins had been there that year to take birds during the nesting season. I told them the Tuppin Ikins had been there, but they proposed to visit the island to see for themselves if this was so, for they value the feathers of these birds exceedingly since all their adornment depends upon them. It is a peculiarity of these birds that when they are young the feathers are a whitish-grey. They then become dark grey and so they fly for about a year, after which the feathers turn red, as red as paint" (Staden 1928:64-65 [1557]).

Breeding pet birds among indigenous people is not only attributed to the past, also contemporary ethnographers have documented the importance of birds for their feather use application. While Eduardo Viveiros de Castro (1986) was conducting ethnographic research among the Tupi speaking Arawete, he described the following: "Toucans, macaws, harpy eagles, smaller hawks, curassows, oropendolas, and two types of cotingas are sought for their feathers to make arrows and adornments. Scarlet and caninde macaws and parrots are captured alive and raised in the village as pets (temima) (in 1982, the village had 54 tame macaws). The harpy eagle, if captured alive, is kept in a cage" (Viveiros de Castro 1986:154; my translation).⁵ And while conducting ethnographic research among the Ge speaking Xikrin, for the contextualization of Museum Goeldi's Xikrin ethnographic collection, Domingues-Lopes noted: "I observed that the Xikrin breed birds such as Ara macaw, parakeet, and parrot to remove the feathers. In preparation for the feathers adornments, in July 2000 I could observe, two women plucking feathers and down of Ara macaw and, in February 2001, I observed mother and son plucking feathers. They removed the feathers very gently, from under the head and the wings of the bird" (Domingues-Lopes 2004:289; my translation).⁶ Numerous examples of ethnographic accounts attest that Tupi speaking group such as the Arawete (Viveiros de Castro 1986:154), the Ge speaking group such as the Xikrin (Domingues-Lopes 2004:289), and Carib speaking groups such as Wai-Wai (Reina and Pressman 1991:115), are still recently keeping birds as pets. About five centuries after Hans Staden's account, pet birds are until today considered the most prized possessions, for example, the pet birds of the Tupi are always the most beautiful colourful birds (Viveiros de Castro 1986:664). Ethnographical and historical accounts are critical depiction of aspects of the social life of indigenous people.

Concluding Remarks: Beyond the Nature/Culture Dichotomy

The Amazonian Collection at the Florida Museum of Natural History, as is central in this study, was confiscated following legal precedents in the Convention on International Trade in Endangered Species (CITES). CITES, as an international body, was created in order to prohibit the illegal trade of endangered species. Overlooked in the CITES legislation is the complexity involved in the social and spiritual values in the cultural context of some endangered species, a context that relates to the Amazonian indigenous people. Absent from CITES, for example, should be provisions referring to the use of animal parts for the construction of artefacts in the context of indigenous rituals and shaman's practices. Indigenous people's worldview is notably absent from the geopolitical discourse, partly due to fallacy.

^{5 &}quot;Os tucanos, araras, a harpia e gaviões menores, o mutum, o japu e dois tipos de contigideos "anambes" são procurdos pelas penas, para flexas e adornos. As araras vermelha e caninde, e os papagaios, são capturados vivos, e criados como xerimbabos (temima) na aldeia. (Em 1982, a aldeia Arawete tinha 54 araras criadas soltas). A harpia (kanoho) se capturada viva, e mantida em gaiola" (Viveiros de Castro 1986:154).

^{6 &}quot;Observei que os Xikrin criam aves como arara, periquito, e papagaio para retirar as penas. Quando da preparacao de adornos plumarios, pude observer em Julho de 2000, duas mulheres arrancando penas e penugens de arara e, em outro momento em fevereiro de 2001, mae e filho realizavam tal tarefa. Arrancavan, habilmente, as penas e penugens que ficavam abaixo da cabeca e das asas" (Domingues Lopes 2004:289).

During the legal precedence of the Amazonian Collection, USFWS assigned a monetary value to the seized objects, but for the indigenous people the value of feathers is beyond simply monetary; the value is situated in social reproduction. Among indigenous Amazonian societies, the shaman plays a central role in the social reproduction, and some of their key tools, of which some similar objects are present in the Amazonian Collection, are adorned with feathers. Instead of "elements of endangered species" the objects in the Natural History Museum Collection are elements of indigenous culture. Amidst objects from the Collection, several are shaman's objects that, when found in archaeological context, would likely be described as faunal remains, e.g., turtle shell, animal teeth, and shells (inside the shaman's rattle). The common meeting ground needs to address these traditional rights rather than focusing on economics alone (Posey 1996), or the western standpoint as the nature/culture divide as embedded in biodiversity conservation. The distinction between nature and culture is thus not as clear-cut in Amazonian cosmologies. Boundaries between nature and culture become obsolete, and to fully understand these Amazonian indigenous objects we have to overcome the nature/culture divide.

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Epilogue

Scale, hybridity, and perspective in the Caribbean and beyond

Michael J. Heckenberger

Leiden in the Caribbean IV joined European and Latin American specialists to consider relations across the Caribbean Basin – the circum-Caribbean – from prehistory to the present. As an outsider, an Amazon specialist from the USA, it was an apt place to consider the northern borderlands of Greater Amazonia, building on my brief field experience in Tobago (2005-2006), Suriname (2005), and Guyana (2009) and, more importantly, interactions with various colleagues who specialize in the area. My primary work focuses on archaeology and indigenous history in the Brazilian Amazon, particularly working with a the Kuikuro (Upper Xingu) Amerindian community in the southern peripheries of Amazonia. The Kuikuro speak a Carib language, their neighbours other languages, including Arawak, in this pluri-ethnic regional society of peer communities. Living for over two years in a pole and thatch house, located at the edge of a large circular plaza, eating manioc and fish, the dietary staples, in locally-made ceramic pots, watching numerous ritual performances, and just being there in the midst of "traditional" everyday life, provides an interesting vantage point to consider the peoples who live in and around the Caribbean Sea.

Hofman and Hoogland's (this volume) introductory overview highlights interaction and the need to develop analytical models and interpretive strategies to understand multiscalar perspectives on sociality and exchange, within and between discrete regions – geographic and socio-cultural islands – that, in turn, were embedded in broad regional systems of interaction across the lowland tropics. This recognizes the interplay of external and internal factors in highly variable socio-cultural systems, including complex questions of cultural pluralism, hybridity, and the long-term dynamics of coupled human-natural systems. It also underscores the different perspectives that researchers bring to bear or, in other words, how past and present socialities are given voice.

The Circum-Caribbean

The concept of a 'Circum-Caribbean Area' gained wide usage after the publication of the six volume *Handbook of South American Indians* (Steward 1946-1950). At the time of initial European intrusions, the region, including Central America, Colombia, Venezuela, and the Antilles, was dominated by small- to medium-sized polities that mid-twentieth century anthropologists came to call "chiefdoms." The term, a translation of the Arawak [Taíno] word *cazicazgo*, first applied to polities at the southern margins of the tropical low-lands (Oberg 1955), was immediately adapted to Steward's geographic cum evolutionary scheme for all of South America: marginal bands, tropical forest tribes, Circum-Caribbean

chiefdoms, and Andean states (Steward and Faron 1959). It was later later exported from Amazonia to Polynesia, where it gained wide currency, and then to a host of world areas to refer to pre-state or non-state complex societies.

The HSAI distinguished the 'Circum-Caribbean Area' from the tropical forests of Amazonia, including the northern coastal settings east of the Orinoco, which were noted for egalitarian, politically autonomous, small, and mobile or semi-sedentary communities, the "one size fits all" tropical forest villages. Steward and Faron (1959:291) suggested that "the general structure of the tropical-forest culture differed from that of the Circum-Caribbean area and the Andes not only in its far greater simplicity [...] but in the special ways in which social, religious, and political patterns were affected by cultural-ecological adaptations," notably environmental limitations (bad soils and low protein). While early authors noted that some populations were more densely concentrated in river and coastal areas, the tropical forest peoples "lacked most of the technological and sociopolitical complexities characteristic of the central Andean empire and the Circum-Caribbean chiefdoms." Mainland tropical forest peoples "lacked a sense of history and took no interest in genealogies" and, in fact, "there is no group whose oral history extended back more than a hundred years." Specifically, they "lacked temples, priesthoods, and ethical systems," confirming the conclusion of initial European eye-witnesses of the coastal Tupi: sem fe, sem lei, sem rei (see Steward and Faron 1959:8-9, 287-291).

The traditional view was challenged from the outset: agriculture could be intensified by landscape modification and use and management of wetlands and aquatic resources, allowing the development of remarkable systems of social ranking, monumentality, and regional integration (see summaries in Silverman and Isbell 2008). Specifically, recent archaeology in Amazonia suggests that the types of small to medium-sized complex societies - chiefdoms - that dominated the Circum-Caribbean, were also present in various parts of the humid forests of the mainland, notably from western Venezuela to the Lower Amazon, along the Amazon River, and in the southern transitional forests of Amazonia in Brazil and Bolivia. Many areas had semi-intensive systems of arboriculture and root crop cultivation in highly domesticated landscapes and included animals, such as turtles, ducks, manatees, which were managed as livestock, whether or not they underwent the geno- or phenotypic changes typical of cows, pigs, and other ungulates (true through the Americas, where camelids were the only fully domesticated ungulates).

Recent research complicates Steward's ecological cum evolutionary division of South America. Indeed, it is quite possible that, in 1491, the average Amazonian, and Caribbean, indigenous person was a member of a settled, agricultural regional polity, some kind of early urban and non-urban, non-state and state society, rather than the "one size fits all" tropical forest tribe. Current perspectives emphasize varied pathways to social complexity, including the complex articulation of heterarchical and hierarchical features, poles of socio-political power, within regional polities and broad systems of interaction. Furthermore, this integrated socio-political landscape has very deep roots: a "formative" that is evident, most obviously in the Arawak diaspora.

The Arawak diaspora

Throughout the Caribbean, most islands, and all of the larger ones, are dominated by tropical forest similar to mainland South America. The indigenous peoples who dominated these areas shared obvious cultural patterns with Amazonia, notably in technology and eco-

nomics. Moreover, recorded languages associated with the region are dominated by two of the primary language families of the tropical lowlands of the continent: Arawak and Carib. Rouse's (1992) cultural historical schema emphasized the migration of South American populations into the Caribbean, based on shared techno-economic systems, notably heralded by ceramics. Recognition of Amazonian migrations into the Caribbean is still widely accepted, but the Leiden conference underscored dynamic change in human-ecological and sociopolitical systems, including early pre-Arawak agricultural societies and broad systems of interaction that extended across the Caribbean Basin.

Gilij (1780-84) first recognized broad linguistic relations of Arawak speakers in northern South America. Karl von den Steinen (1894) documented linguistic relations with the southern Amazon Pareci and Xinguano, what he called "Nu-Arawak." After working for several years (1990-1993) with the Xinguano people, I was introduced to the Portuguese translation of Max Schmidt's (1917) study "Die Aruaken," the first study to consider in detail shared cultural features within the family. Based on primary fieldwork, Schmidt was well acquainted with the Xinguano peoples and other groups within a broad region of related Arawak peoples, which he glossed as Pareci after the cultural group with which he was most familiar (who live in the Upper Tapajós River headwaters immediately west of the Xingú) (Schmidt 1914). Even cursory examination of regional ethnology documents the clear cultural relatedness of Arawak speaking groups across southern Amazonia. Schmidt emphasized three important features of Arawak societies: settled agricultural and river/coastal adaptations, socio-political hierarchies, notably an elite rank, and regionally integrated societies. The Comparative Arawakan Histories conference in Panama in 2000 emphasized these and other aspects of Arawak societies, which were somewhat unique to these groups in lowland ethnology (Hill and Santos Granero 2002).

Gertrude Dole (1961/62) noted similarities between Upper Xingu and Orinoco archaeological ceramics. More broadly across the lowlands, Donald Lathrap (1970) and Irving Rouse (1992) noted the affinities between the Saladoid-Barrancoid series defined on the Lower Orinoco and the Saladoid of the Caribbean and what Lathrap called the Amazonian Barrancoid or Incised-Modeled tradition in the Upper Amazon. The early proponents of an archaeological culture that corresponded to the Arawak speaking peoples focused on obvious ceramic similarities and their relation to agricultural technologies (Lathrap 1970). The urge to move has been generally linked to either the increased potential of developed agricultural systems or the emergence of status rivalry within ranked societies, although no doubt both played important roles in the diaspora. Both are related to demographic factors, but the former promotes the idea that growth resulted in a need to expand into new areas, and posits a wave of advance migration (Lathrap 1970), whereas the latter sees competition over scarce prestige resources as critical, which, although linked to the size of kingroups and communities, is not due to population pressure related to agricultural resources (Heckenberger 2002). In reality, variation in the features and mechanisms of population movement were important.

Roosevelt (1997:173), an outspoken critic of correlations between ceramic styles and language groups, nonetheless suggests that members of the Saladoid-Barrancoid series "seem linked by common origins [rather] than by contemporary communication" and "spatio-temporal patterning of the series is consonant with a slow migration," or in other words a "sloping tradition." Between ca. 2500 and 2000 BP, early Arawak speaking groups had spread throughout most of the area dominated by them in historic times. The primary ex-

pansion, of people and ideas, was fairly rapid between ca. 2.500 to 2000 BP, but, if one accepts a longer chronology on the middle Orinoco, this may extend deeper in time. Zucchi (2002) suggests a very deep history, extending well over three millennia for Arawak speakers in the broad area of Northwest Amazonia, from the Negro to the Middle Orinoco.

Roosevelt (1997:173) goes on to say, however, that the correlation of these ceramics with Arawak speakers has "weak empirical grounds" since the style had "gone out of use at the time of conquest, and no group documented as speaking an Arawakan language has ever been shown to be using a style of the series." In fact, contemporary Xinguano ceramists are Arawak and, like their ancestors before them for over a millennium in the region, still make ceramics that are best ascribed to the series, making its historical slope even more remarkable. Additionally, widespread material culture features, such as rubber balls, varied masks and musical instruments, related to ritualized activities within and between communities, and even something as mundane as the twist of cordage and slant of weaving elements show a correlation between Arawak speakers and certain portable material culture (Petersen *et al.* 2001).

The Arawak speaking peoples who colonized the Caribbean and came to dominate many areas were not the earliest occupants of many islands, as is suggested by the presence of pre-Saladoid ceramics, agriculture, and settled communities. By the mid-Holocene, some Caribbean populations apparently lived in fairly sedentary communities with agricultural crops, including manioc, the super-crop of the humid Amazonian lowlands, by the fifth millennium BP (see Pagán Jiménez, this volume; Rivera-Collazo, this volume). Along the Berbice in Guyana, historically dominated by Lokono peoples – the original "Provincia de los Aruacas," early settled communities (ca. 5.000 BP) were present, as was true for several other parts of the mainland in the mid-Holocene (Whitehead *et al.* 2011; Oliver 2008). These groups likely exploited a range of cultivated plants, some domesticated several millennia earlier. In the middle Berbice, the Arawak presence can be suggested ca. 2000 BP or earlier based on changes in ceramics and agricultural technologies (raised fields).

Rouse overemphasized the Arawak, as the original agricultural colonists and dominant cultural group throughout prehistory. Culture history was more complex than simple wave-of-advance movements or uniform ecological or demographic imperatives. Various movements of peoples and ideas and cultural interaction can be delineated, including complex patterns of migration. Earlier cultural groups, including agriculturalists, had occupied the region for millennia, by the second millennium AD Carib speakers colonized the Lesser Antilles, and interactions across the circum-Caribbean created the conditions for a remarkably plural socio-cultural landscape. Nonetheless, the dominant influence during the last three millennia came from South America, first the Arawak and later the Carib. This makes comparisons with the Arawak and Carib speaking peoples of Amazonia particularly fruitful, with the caveat that each major sub-region and micro-regional social systems was also unique. However, we should sharpen analogies to look not only at broadly related groups but at the specific histories of indigenous peoples that are recorded ethnographically.

The Southern borderlands

In historic times, Arawak speaking peoples represented the most widespread language family in the Americas, in many cases associated with novel forms of semi-intensive landscape domestication, and socio-political complexity, occasionally arguably representative variants of pre-modern urban polities. However, in Amazonia the socio-historic panorama is quite complex since several language families dispersed across broad areas by the first millennium AD. The largest, the Arawak and Tupi-Garani families, are associated with agriculturalists who had apparently spread across much of the tropical lowlands by 2000 BP. The wide-spread dispersal of the Carib and Gê language families may have similar time depth. In Amazonia, however, upland societies associated with these other families lack the settled, agricultural economies and local and regional social hierarchies of the Arawak.

Throughout Amazonia, as well as the Caribbean Basin, cultural pluralism was an important element of regional interaction, including the ethnogenesis of pluri-ethnic social formations. Both phylogenetic and reticulate features are critical. In each case, it is language, first and foremost, which provides the basis for historical reconstruction of distributions and comparisons between groups. Examples of linguistic hybridity abound, including regional trade languages, such as along the Amazon, Llanos de Mojos, and other areas, creolization, and gender diglossia, for instance related to the Carib colonization of the southern Caribbean in late pre-Columbian times (Boomert, this volume). In the Caribbean, pluri-ethnic social formations were typical of many islands and inter-island systems throughout much of prehistory. Interaction was also framed in an idiom of ritual, including the iconographic writing suggested by Amazonian Polychrome ceramics, the vast sacred landscapes of the NW Amazon, or the regional participation in chiefly rites of passage in the Upper Xingu. Also critically important are features of technology, economics, socio-political organization, and built environment, notably landscape modifications and ritual space, which, while not isomorphic with language do show significant correlation across language families.

In southern Amazonia, upland areas were dominated by Tupi-Guarani and Gê speakers, whereas Arawak speaking groups were densely settled in the bottomlands of the major southern tributaries of the Amazon. What links these areas is not just language, nor simply a certain techno-economy or socio-political form, but a *habitus* or a technology of the body that is inscribed across bodies, or communities of practice, of diverse sizes and shapes, dwellings, settlements, and even whole landscapes. While genes, language, and technologies, including body language, material culture, and built environment, do not change in lock-step, they are also not autonomous. The content is words *and* gestures, including the construction of social bodies and domestication of nature that includes, variably, a whole host of material things, related forms of technology, ceramics, perishable artefacts, village forms, architectural features, including circular plazas and developed built environments.

I was interested less in artefacts than living arrangements, notably a feature shared by Arawak speaking peoples in the Caribbean and southern Amazon over the past two millennia: plaza villages. Indeed, while I was living in a plaza village, Dave Watters and Jim Petersen were working on the Saladoid ring village at Trants on Monserrat, which looked like a smaller archaeological version (Heckenberger and Petersen 1999). Despite arguments that empty central areas in some sites (Anse à la Gourde) reflect temporally discrete household areas, there is mounting evidence that circular plaza settlement organization was present throughout Saladoid times, including at such sites as Trants (Monserrat), Maisabel (Puerto Rico), and Golden Grove (Tobago), and extended to contact in some areas, such as at En Bas Saline (Haiti), although being transformed into rectangular courts or *bateys* in parts of the Greater Antilles and non-plaza occupations, likely associated with Carib speakers in many parts of the Lesser Antilles. Many people live in such communities in the southern Amazon, such as Tupian peoples (Mundurucu, Tapirapé) and Gê, but comparison with the Caribbean draws our attention to the fact that in forested Amazonia they are a common feature of Arawak groups. Circular plaza villages are relatively rare in the region, but recognized in the Caribbean, Orinoco, lower Negro, and in southern Amazonia, all areas dominated by Arawak speakers historically. In southern Amazonia, the southern endpoint of the diaspora, they are nearly ubiquitous among Arawak speakers (and notably other culturally related groups). Circular plaza villages represent a significant variation of lowland settlement patterns, which entails specialized movements of the body, structured partitioning of space, and ideologies of social differences, as well as a "blueprint" of settlement form, and, as discussed below, regional orientations, which contrasts with less rigidly defined settlements patterns, irregular, linear (along rivers), and agglutinated forms more typical of the region.

Plazas have certain critical things to say about social differences, notably gender, age, kingroup, affinity, associations, and rank. What stood out about the southern Arawak plazas was their relationship to masks, musical instruments, especially flutes, and other performative technologies, including the presence of elite rituals, notably chiefly mortuary feasts. Plazas were tied to genealogies and ancestors, provided through the bodies of certain persons, including young, middle and old chiefs themselves, but also deceased chiefs, seen in the Upper Xingú to animate wooden bodies, idols. This, of course, was the basis of Steward's temple-idol-priest complex, although the Xinguanos would call their weighty personages chiefs rather than priests.

The closest cultural relatives are the Pareci and related groups (Salumá and Enawene Nawe) share minute details not only of techno-economy, e.g., unique manioc graters and other processing tools, hammocks, and houses, but also of their plaza ritual complex, among other architecture, such as fishing and wetland constructions (weirs). Indeed, Schmidt included Xinguanos and diverse Pareci groups as one "nation." Murdock (1953), in his critique of Steward's quadra-partitite culture areas of South America, likewise recognized the southern Amazon region as a discrete culture area, the "Xingu." One of the earliest reports on the "Pareci nation, which reads almost like an ethnographic account of Xinguano peoples, notes:

These people exist in such vast quantities, that it is not possible to count their settlements or villages, [and] many times in one day's march one passes ten or twelve villages, and in each one of them there are ten to thirty houses, and in these houses there are some that are thirty to forty paces across [...] even their roads they make very straight and wide [...] (Pires de Campos 1862[1720]:443-444).

Colonial expansion decimated both groups demographically, so the description of their dense population and settlements, no doubt typical for the Upper Xingú at the time, as well, did not fit with twentieth century patterns, when only a few villages were left. Given what we now know about the pre-Columbian networks of settlements in the Upper Xingu (Heckenberger *et al.* 2008) there is little doubt that even by the early 1700s massive depopulation had already decimated regional populations. This system of culturally and socio-politically related territorial polities, each internally organized by a fractal logic of social and spatial relations, shows the potential complexity of this pattern, not to mention its large size, with polities in the thousands, each with territories of hundreds of square kilometres, within a region of likely 30,000 km² and tens of thousands of persons. Classic urbanism requires singular centers, unique from their rural countryside of small towns and

villages, which were both structurally and economically heterogeneous. The Xingu multicentric polities, with cores defined by exemplary centers and four major walled, residential satellites, are reminiscent of what Howard (1902) called "Garden Cities," where urban and rural formed a complicated mosaic and large centers basically larger, more elaborate versions of smaller ones. The garden cities of southern Amazonia, like those I would argue of the northern areas, force us to consider alternative forms of urbanism, including a new definitional characteristic that seems more relevant than size of singular centers – cities – or functional heterogeneity within them: regional planning and integration.

Scale, perspective and voice

Late pre-Columbian Caribbean and Amazonian polities fit well within the universe of small- to medium sized complex societies across the Americas. Likewise, classic urban centers emerged later and were generally smaller in the Americas than on the mid-northern latitudes of the Old World, and populations more diffusely distributed. Mann (1986) suggests that such regional and often hierarchical polities - chiefdoms, petty kingdoms, or "micro-states" - were the most widespread type of society worldwide in 1492, which seems reasonable for the lowlands, as well. Centers seem to have concentrated socio-political and symbolic resources, through an idiom of ritual performance, and wealth or food surplus, or, more precisely, the latter were created and instantiated for political and ritual ends. Notably, plaza orientations are a common feature of Native American complex societies, more commonly theocracies or "theater states" than economically centralized states. Caribbean peoples, proper, like those of the Amazon, were latecomers to the scene of plaza polities, which appeared earlier in the Intermediate Area, Mesoamerica, and the Southeastern USA. Perhaps the late development of regional polities in the lowlands, or in the tropical diaspora, generally, led to the tendency to ramify, rather than stratify: to extend in convoluted horizontal systems of difference and diffuse settlement patterns, rather than to crystallize in developed vertical social and spatial hierarchies and capitals.

It is reasonable to say that virtually all plural complex societies included Arawak languages or cultural features. Elite ideologies, genealogy, and status rivalry were critical factors in the dynamics of these small- to medium-sized complex societies, based on what can be said about historic period Arawak speaking peoples (Hill and Santos Granero 2002). These social factors were of critical importance in the mechanisms that prompted dispersal of related societies. Ancestrality, tied to a rich material culture connected with rituals of social difference, e.g., masking rituals for spirit beings, flutes and club-houses, gender antagonism, and chiefly life crisis rites, as well as their unique views on "partible" ancestry, rank endogamy, polygyny, and faction building, contrast in southern Amazonia with strategies of "predatory societies," including the Tupi, Gê, and, as Viveiros de Castro (1992) notes, the "equally metamorphic Carib."

In other words, Arawak groups were generally organized into regional polities or "complex societies," not autonomous villages considered typical of tropical forest tribes. Similar to the tropical diasporas of comparable scope and age, such as eastern Bantu in Africa and Oceanic Austronesian, the early Arawak diaspora appears related to the spread of peoples with an economy based on root-crop horticulture and arboriculture, notably palms, and the exploitation of aquatic resources. These tropical diaspora also shared a socio-political organization, which Vansina (1990) described as house-chiefdoms. Regardless of what we call them, these internally hierarchical groups integrate multiple settlements and are often enmeshed in broadly heterarchical peer polities or in some cases more centralized polities, but focused on the centralization of political-ritual resources and other symbolic capital in "theater states." In Amazonia, at least, alliance, accommodation, and acculturation, as Schmidt (1917) noted, included Arawak and non-Arawak languages in plural regional societies.

For my part, I have been predisposed against a monolithic view of the Caribbean – as an Arawak enclave – ever since reading Alegría's (1983) insightful suggestion of Mesoamerican influence in the Greater Antilles, as indicated by the unique structure of the ball courts (batey) in the region, against the backdrop of a feature widely found among Arawak speaking peoples of lowland South America, the rubber ball game (see also Wilson 2007 on early pre-ceramic contacts with Mesoamerica). Bill Keegan's suggestion of genealogical priority of the matri-line through avunculocal residence suggests intriguing possibilities of interaction with the Southeast, mutating the more typical cognatic and uxorilocal patterns of lowland South America. Rodríguez Ramos (this volume) aptly points to the linkages between the Caribbean and Intermediate area, such as the jade trade of Central America, which itself shows clear linkages both with Mesoamerica (were-jaguars) and the central and northern Andes (condors and camelids), and, as he revealed, the "bird-woman" motif from Puerto Rico and its obvious similarities to Tairona art. Such hybridity was forcefully brought home by material culture studies (such as described by Rodríguez Ramos, Knippenberg, and Ostapkowicz, this volume), genetic and bone chemistry studies (Laffoon and de Vos, this volume; Valcárcel Rojas *et al.*, this volume), and Oliver's (presentation at the symposium) case of multi-ethnic identities in the Greater Antilles. In early historic times, this was graphically shown in burials on Cuba, where a Mesoamerican woman, an African individual, a *mestizo* and Amerindians were buried together, as described by Valcárcel Rojas et al. (this volume).

Interaction was critical in economic relations, regional socio-political systems, cultural sharing and ideology, today supported by a battery of studies on bone chemistry, genetics, paleoethnobotany, and material culture. This highlights that human agency, including strategic social relationships, cultural choice, and political negotiation, as well as dynamic relations between humans and their natural environmental, was critical in long-term developmental trajectories. Social strategy and negotiation, such as described by Samson (this volume), show how convivial domestic relations are reflected in housing elements. Other parts of larger social bodies and persons, the agency of artefacts, spaces, and intangible "body parts," are not only indicative of social relations, but as in José Oliver's recent book on *cemis* (Oliver 2009), constitutive of them. Gillespie's (2008) discussion of encompassing personhood within noble houses among the Maya (or the Inka's mummy) resonates with, as Steward put it, "hierarchies of deities and men" associated with the Antillean Arawak. However, the social life of things is highly variable, through time and space, and elements of Viveiros de Castro's (1996) three socio-symbolic "economies" can also be seen as strategic features within societies or large social groupings (regions).

The lowland world system, anchored to the major states and small empires of nuclear America, boasted some remarkably complex societies, regimes of power that were contingent social, cultural, and political strategies and negotiations across time and space. Most complex societies were plural and engaged in broad political economies that articulated diverse ideologies, regimes of dwelling and practice, and philosophies of social interaction. One thing is certain, broad systems of interaction across the circum-Caribbean existed for several millennia. The Caribbean coasts are, in fact, a gateway to most of the macro-culture areas of the Americas, the Southeast, Mesoamerica, Amazonia, the Intermediate Area, and the northern Andes. Not surprisingly, diversity, pluralism, and hybridity characterize deep history across the Caribbean.

Many papers emphasize scale: the long-term dynamics of environmental systems and how these are molded by human factors, interactions across continents and seas, and the scalar features of social, cultural, and political relations across the Americas. Scale is almost ubiquitous in Western scholarship. It is a basic characteristic of human social systems, which are composed of bodies that extend from the inner worlds of individual human beings to strategies of social relationships, to kingroups and houses, communities and settlements, regions, and supra-regional flows and scapes, and even the vast scales of climate, oceanography, and island geography. This draws attention to the vagaries and gaps in the archaeological record that effect what can be seen: visibility. Ethnohistory and ethnographic studies provide significant insights to long-term reconstructions, but come with their own sources of authorial and historical bias (see, e.g. contributions to this volume by Chatrie, Grunberg, Keehnen, Mol, Roulet, Roux, and Zutter).

First, perhaps, we might pose the question, summarized by Manson (2008): "does scale exist? This is to say, do "natural" or immanent scales exist in the universe or are they a reflection of human, socio-cultural, and historical perceptions? In the final analysis, scale is perspective dependent, a question of visibility, and scales from sub-local to global, short to long, micro-macro are all legitimate points of entry and bespeak different relations, networks, and organizations. What is critical is not the idea that things are multi-scalar, and multi-sited, which is accepted by virtually all today, but what features, relations, or change in cultural groups is revealed at one or another scale and how do we articulate analyses across scales. Many critical arguments perpetuate the modernist belief that we will expose a "true" past, or correct solution, from a particular perspective. Instead, we might adopt a perspectivist view, recognizing that "truth" is always flawed, a work in progress, and dialogue between viewpoints, often framed as "interdisciplinary," provides the most powerful tool to build upon the knowledge of the past while at the same time exposing some of its biases and flaws. As Carlin (presentation at the symposium) puts it, we are dealing with "nested identities" and there can be no meta-narrative solution to the problem: what are needed are deeply contextualized studies that elucidate the actual practices and "lived worlds" of Native American peoples.

The Leiden conference and the idea of the circum-Caribbean, once again piqued my interest in large socio-historical bodies, what De Josselin de Jong called ethnological areas, and vast geo-political arenas. Laying in a hammock in the Kuikuro Amerindian village early in 1993, I began reading *The Mediterranean*, and often thought about what the history of lowland South America might look like if Braudel, rather than Julian Steward, had selected the Caribbean, rather than the sixteenth century Mediterranean, as the geographic point of departure for broad regional synthesis? It would no doubt reveal features, such as social contacts and the rise and fall of fortunes, within regional spheres of interaction or even, at least over the past millennium or so, native world systems, which built up over several millennia: shipping routes, elite interaction, broad but variable ideologies (mentalités), economic trends, and disease, and all against the backdrop of local everyday lives.

In conclusion, I can only echo what my colleague Bill Keegan said in his epilogue to the earlier volume by Leiden and affiliated scholars, *Crossing the Borders* (2008): they "have developed the most sustained and integrated program of technological innovation and application in the West Indies to date." This volume clearly shows that their theoretical insights parallel their methodological contributions. But, I learned an awful lot about how complex things were in the Caribbean, how historically contingent and diverse and how sophisticated intellectual dialogue about these issues has become far more nuanced. Leiden is poised to become a major center in that brand of interdisciplinary studies that focuses on humans, in every respect, or, what, as a US-trained specialist, I would simply call anthropology, a hybrid of humanity and science, past and present, small and large, really there's a place at the table for every perspective.

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Communities in contact

Communities in Contact represents the outcome of the Fourth International Leiden in the Caribbean symposium entitled *From Prehistory to Ethnography in the circum-Caribbean.* The contributions included in this volume cover a wide range of topics from a variety of disciplines – archaeology, bioarchaeology, ethnohistory, and ethnography – revolving around the themes of mobility and exchange, culture contact, and settlement and community. The application of innovative approaches and the multi-dimensional character of these essays have provided exiting new perspectives on the indigenous communities of the circum-Caribbean and Amazonian regions throughout prehistory until the present.



