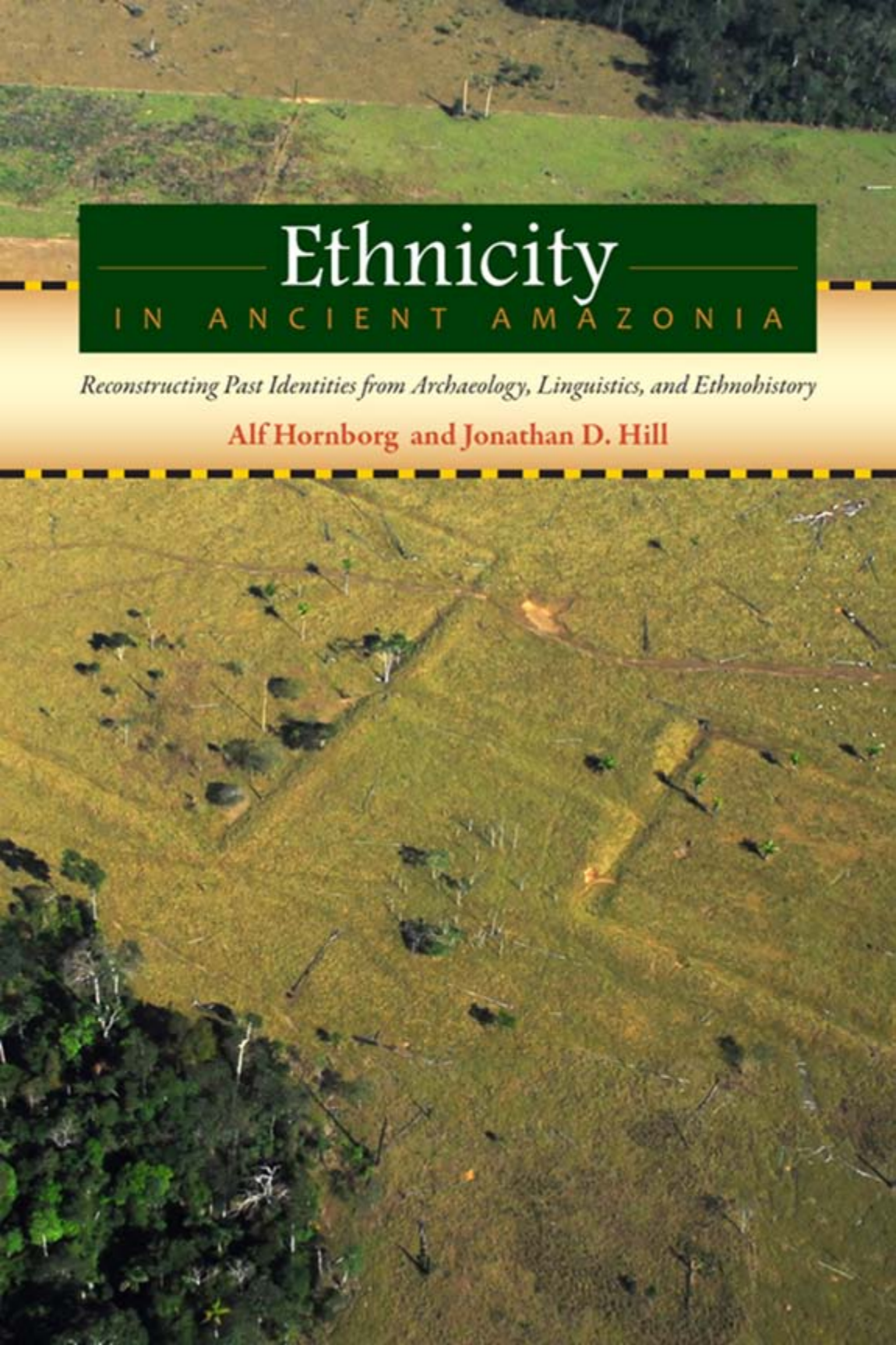
Ethnicity
IN ANCIENT AMAZONIA
Reconstructing Past Identities from Archaeology, Linguistics, and Ethnohistory
Alf Hornborg and Jonathan D. Hill

CHAPTER TWO

Archaeological Cultures and Past Identities in the Pre-colonial Central Amazon

Eduardo Góes Neves

INTRODUCTION

Archaeologists are well aware that a simple association between patterns in the archaeological record and ethnographic or ethnohistorical patterns is highly problematic. The ethnographic literature on lowland South America is full of examples of multilinguistic regional systems where different language groups share, for instance, the use of the same pottery, occupy villages with similar spatial layout, and even produce and consume the same basic foodstuffs. Such examples show that there is no simple correlation between the dynamic functioning of social systems and the static dimension of the archaeological record. In the particular case of Amazonia and northern South America the ethnographic and ethnohistorical literature is full of evidence that in the sixteenth century AD, and in some areas up until the present, local indigenous groups were regionally integrated in multiethnic networks including specialized production and exchange of goods, mobilization for warfare, and a periodic condensation into hierarchical, chiefdom-like social formations. These social formations were multilinguistic, with a patterning in material culture generated by

FIGURE 2.1. *View of typical floodplain setting. A floodplain (*várzea*) lake with the Solimões River in the background seen from a high bluff in the central Amazon. Floodplain settings, especially along white-water rivers, provide myriad food resources that sustained sedentary life in the first millennium AD in the central Amazon. (Photo by Eduardo Neves)*

exchange networks, although they sometimes developed lingua francas or pidgins. It is likely that many of the Amazonian social formations in the 500 years that preceded the European conquest had this general structural pattern (Neves 2008).

Since at least the 1960s, there have been many case studies demonstrating that there is no universal correlation between language and material culture. Such studies have indeed generated some of the major theoretical changes experienced by Anglo-American archaeology in the period, for example, the development of the processual and post-processual approaches. Cautionary examples are very common and not restricted to lowland South America alone. Because of this, starting in the 1960s, many archaeologists distanced themselves from the ambition to establish reconstructions of ethnic boundaries in the past based on the archaeological record. The underlying premise in such avoidance is the notion that cultural behavior varies under a much finer resolution than what can be visible from the normally coarser dimensions of the archaeological record.

In lowland South America, the association between patterns of language distribution and the expansion of ethnic groups in the past was initially proposed, almost 100 years ago, by Max Schmidt. Erland Nordenskiöld, in his brief but insightful synthesis of Amazonian archaeology, took that correlation further, proposing an association between early Arawak expansions and the wide distribution of Incised-modeled ceramics decorated with bird heads, found in distant places such as Trinidad, the Antilles, the lower Amazon, and the delta of the Paraná River (Nordenskiöld 1930). For Nordenskiöld, this wide distribution reflected the fact that, in lowland South America, the three major river basins—Orinoco, Amazon, and Paraná—are all geographically integrated.

Donald Lathrap's "cardiac model" (1970, 1977) and the hypotheses generated by it (Brochado 1984; Oliver 1989) constitute one of the most creative sets of hypotheses proposed for lowland South American archaeology since World War II. Building on earlier ideas proposed by Max Schmidt, Erland Nordenskiöld, Julio C. Tello, and Carl Sauer, Lathrap's model derived its theoretical power from a balanced combination of insights from cultural geography, cultural anthropology, linguistics, and archaeology. At a time when archaeology was being overwhelmed by processualism, the cardiac model, through its recycling of some cherished principles of

the culture historical approach such as the correlation of languages and ceramic complexes, provided archaeologists working in the lowlands with a hypothetical way of tracing the expansion of languages and ethnic groups in the past. More than that, it offered archaeology as a powerful tool for understanding the long-term history of indigenous peoples of the lowlands. Lathrap elegantly formulated a series of hypotheses proposing an association between patterns of distribution of languages from the Arawak and Tupí-Guaraní families and agricultural expansions in the past. Together with his former graduate students José Brochado and José Oliver, Lathrap proposed that the central Amazon was an early center of population dispersal affecting the whole South American continent (Lathrap 1970, 1977; Brochado 1984; Oliver 1989). For these authors such dispersals were the result of processes of population growth and agricultural colonization of the fertile floodplains of the Amazon basin, leading eventually to the occupation of other alluvial and non-alluvial settings further away in South America. Perhaps the greatest merit of this "cardiac hypothesis" was that it proposed an actual mechanism for diffusion. In this case, diffusionism was not employed as an obscure explanatory device but as something to be explained. The expansion of people, languages, and ceramic styles was seen as the result of population growth in well-adapted agricultural groups colonizing contiguous areas in alluvial settings. Lathrap's brand of diffusionism was in many ways similar to the demic diffusion hypothesis proposed by Ammerman and Cavalli-Sforza to explain the distributions of languages and genetic frequencies in the European Neolithic (Ammermann and Cavalli-Sforza 1984).

A brief restatement of Lathrap's hypothesis can be summarized as follows. An area located in the central Amazon, between the mouth of the Negro and Madeira Rivers, was the center of long-term and continuous occupations going back to the early Holocene. The archaeological record of these occupations is characterized by the production of early polychrome ceramics with dates going back to ca. 6000 years BP (Lathrap and Oliver 1987). Even earlier ceramics, related to the Barrancoid series at the mouth of the Orinoco, but with earlier dates (Rouse 1985), were to be found in this core area. Such early ceramic complexes would represent the occupation of speakers of proto-Tupí and proto-Arawak languages. The successful adaptation of these early groups to floodplain settings would have led to their demographic expansion through demic diffusion to the adjacent floodplains of the upper and lower Amazon, as well as up the Río Negro and the Madeira. This process would eventually have brought speakers of Tupí-Guaraní and Arawak languages to areas very distant from the central Amazon, including the Caribbean islands, the Atlantic shore of what is now Brazil, the Andean foothills, and the Chaco.

Lathrap's work focused on the dispersal of peoples that spoke languages from the Tupí-Guaraní, Arawak, and Pano linguistic families. For him, such population and language dispersals would have been correlated with the expansion of ceramics of the Polychrome tradition in the case of Tupí-Guaraní speakers, of Barrancoid or

Incised-rim ceramics in the case of Arawak speakers, and of the Cumancaya tradition in the case of the Panoans.

However, work done in the central Amazon after the publication of Lathrap's original hypothesis showed that the archaeological record did not match his expectations (Heckenberger 1998; Neves 2008). One might thus expect that the search for indications of ethnic or linguistic expansions in the archaeological record of lowland South America would be in vain. On one hand, the ethnographic literature confirms the clear methodological problems of such attempts. On the other hand, efforts in that direction, such as Lathrap's, were not matched by the archaeological record.

Do these problems suggest that one should abandon the search for such correlations? I will argue in this chapter that correlations of this kind can and need to be done if one is willing to integrate archaeology and cultural anthropology in understanding the long-term history of occupation of lowland South America. To do so, one needs to turn to the archaeological literature to examine how this methodological problem is being dealt with in other contexts across the world. Such examination can give us powerful conceptual tools with which to readdress that same old question. The good news is that lowland South American archaeology has been going through considerable advances in the last ten or fifteen years. Such advances have been freeing the discipline from an exclusive reliance on the traditional, ceramic-based typological approach as the major source of information about the past. Today we have much more data on other dimensions of variation in the archaeological record, such as site size and shape, settlement patterns, regional chronologies, and so forth. Such data, employed with new methodological tools, show that there are indeed consistent ways in which, for instance, changes in ceramic style and technology covaried in regional sequences with changes in settlement layout or settlement patterns. Such differences can be interpreted as the material imprint of different ethnic groups or regional systems in the past.

THE FARMING-LANGUAGE DISPERSAL HYPOTHESIS IN LOWLAND SOUTH AMERICA

If the search for past ethnic boundaries in the archaeological record were a methodological dead end, it should at this point have been altogether abandoned by the discipline. However, this is far from the truth. In different parts of the world, but notably in Europe and the Pacific, archaeologists have been postulating hypotheses that correlate population expansion in the past with current patterns of distribution of archaeological sites, contemporary languages, and human population genetics (Kirch 2000; Renfrew 2000; Bellwood and Renfrew 2002; Anthony 2007). One particular manifestation of this perspective is the "farming-language dispersal hypothesis." This hypothesis proposes that the distribution of some of the

most widespread language families reflects demographic dispersals resulting from the adoption of farming by different populations of the world. For example, the dispersal of the Lapita complex of objects, including stamp-decorated ceramics, in Melanesia and western Polynesia is postulated to correlate with the early expansion of Austronesian speakers in the area. In the same way, the expansion of linear band ceramics in western Europe would correlate with the expansion of farmers speaking ancient Indo-European languages ultimately deriving from Anatolia, and so forth with Bantu languages in sub-Saharan Africa and Arawakan languages (correlated with the spread of Saladoid ceramics) in the insular Caribbean. These cases demonstrate that the farming-language dispersal hypothesis (FLDH) remains a powerful paradigm in archaeology today, recycling some of the cherished themes of cultural-historical archaeology that were almost abandoned by the discipline, such as the use of diffusionism as an explanatory device and the correlation between the distributions of languages and artifacts (Bellwood and Renfrew 2002).

For several reasons, the archaeology of lowland South America could provide a good testing ground for FLDH. Such an attempt, however, has never been made. Among the reasons to do so is the fact that the area has one of the widest distributions of linguistic families in the world. For instance, while most contemporary European languages belong to a single language family, the Indo-European, there are in lowland South America at least four large families with continental-scale distributions—Arawak, Tupí-Guaraní, Carib, and Gê—together with several other families with extensive regional distributions, such as Pano and Tukanoan, and several isolated languages with no established connection to other languages or language families in the area (see Maps 1.1, 10.1, 10.3, and 10.4). Another reason to test the strength of FLDH in lowland South America is that there have never been large state-like social formations in the area. It is known that such social formations can have a skewing effect on the distribution of languages on a continental scale, such as happened with Quechua in Andean South America and Latin in Europe. So, whichever were the means for language dispersal in lowland South America, the development of the state was not one of them.

To test the FLDH a series of assumptions has to be made. First, one needs to be willing to accept that there is, to some measure, a positive correlation between language variability and variability in the archaeological record. In other words, since languages cannot be excavated and since there were no writing systems known in pre-colonial Amazonia, the variability in the archaeological record can be used as a proxy for language variability in the past. Such an assumption, however, although necessary to address the questions raised here, is extremely complex.

How, then, can archaeologists working in the lowland South American tropics, where ceramic artifacts and their distribution patterns are the primary archaeological record, establish a long-term history of indigenous peoples before the arrival of the Europeans? First they need to look for other dimensions of variability beyond

the study of pottery alone. In the words of Anthony (2007:131), who has studied the question of early Indo-European expansion, "what makes an archaeological culture interesting, and meaningful, is the co-occurrence of many similar customs, crafts, and dwelling styles across a region, including, in addition to ceramics, grave types, house types, settlement types (the arrangement of houses in the typical settlement), tool types, and ritual symbols." Such an approach mirrors in many ways Gordon Childe's early definition of archaeological culture, proposed almost sixty years ago.

Archaeologists must, moreover, aim to identify the historical contexts where correlations between languages and variability in the archaeological record can be stronger. This is an important point because it frees one from the rigid opposition between those who accept and those who do not accept the possibility of establishing such correlations. In other words, the question becomes not so much whether this can or cannot be done but rather one of defining the contexts in which it can be done.

Which contexts could these be? First, there are the cases of rapid colonization of previously empty areas (Renfrew 2000). This was, for instance, what happened in western Polynesia, where an association between the Lapita complex, identified by patterns in the archaeological record including rock-stamped pottery, and a branch of the Austronesian language family was established (Kirch 2000). Other potential contexts for such correlation could be the initial decades or centuries of occupation of a previously settled area by external populations arriving with a new technology or a different political, religious, or ideological system (Renfrew 2000). This is what happened in the insular Caribbean when the early Arawak-speaking colonizers brought with them Saladoid pottery and settled in ring-shaped villages dating back to ca. 500 BC (Rouse 1992; Petersen 1996). This was also the case in the colonization of the Atlantic shore of eastern and southern Brazil by the Tupinambá and Guaraní Indians, who spoke languages of the Tupí-Guaraní family and are associated with sites yielding a distinctive pottery with polychrome decoration. The Tupinambá, who arrived in the area around the beginning of the Christian era or even earlier, completely replaced the shell-mound builders who had lived there for millennia. In both these New World cases, the replacement can be explained by the fact that the newcomers brought with them a different technology. In the particular context of the Tupinambá, the colonizers also brought a political system based on warfare, captive-taking, and cannibalism that was clearly associated with the expansion of these groups (Gaspar et al. 2008; Noelli 2008).

Turning back to the Amazon, would it, in light of the previous discussion, be possible to identify a historical context where a stronger correlation between ancient languages and patterns in the archaeological record could be established? The answer is probably positive. In much of the Amazon, such a context developed around the beginning of the Christian era. This was the time when a true cultural explosion occurred in the area, marked by the replacement in some areas of long-established lifestyles going back to the early Holocene by a different, general pattern

of economic and social organization that prevailed until the arrival of the Europeans and in some cases until today. In accordance with FLDH, these changes may have been initiated by the expansion of agricultural-based societies over areas previously occupied by societies with economies based on a wide range of resources, including the cultivation of domesticated plants but also fishing, foraging, and agroforestry.

Agricultural-based societies, in this reasoning, are those groups who rely on agriculture to provide for most of their foodstuffs. I am here following the principle that plant domestication and agriculture are distinct processes: although the former was a prerequisite for the latter, there is no universal rule that establishes that plant domestication will inevitably and eventually lead to the emergence of agriculture (Rindos 1984). Accordingly, there are recurrent cases in Amazonia of typical hunter-gatherers, such as the Nukak, who have domesticated plants as part of their food base (Politis 1996), or of groups, mostly Tupí-Guaraní speakers, who alternate over time between being agriculturalists and hunter-gatherers (Fausto 2001). Instead of merely being answers to the pressures exerted by current national occupations of the area, this was probably a recurrent pattern in pre-colonial Amazonia, as will be shown below.

However, contrary to what was the case in Europe, Polynesia, or sub-Saharan Africa, we do not find in tropical lowland South America a prevalence of a single language expansion over wide expanses. Rather, there is a mosaic-like pattern with several language families and many small families or isolated languages distributed on a continental scale. This is probably explained by a number of factors. First, there is the widespread absence of domestic animals as sources of food or work in the lowlands. It is known that the presence of domestic animals in productive systems can provide an abundant and predictable supply of protein and fat, obviating the need for access to wild resources (Harris 2002:33). Such changes, in turn, provide the conditions for population growth, leading eventually to demographic expansion. Productive systems based on the exploitation of wild animals, even where they are abundant, such as the case of the alluvial settings of the Amazon, normally bind hunter-gatherers to their territories and do not lead to large-scale population dispersals (Harris 2002:32). In the Amazon, animals were not domesticated because they were so abundant, mostly along alluvial settings. In other words, there has been little selective pressure for animal domestication, given the wide availability of fish and aquatic mammals. In terrestrial settings, on the other hand, there are few potentially "domesticable" animals: most terrestrial mammals are solitary and nocturnal; indeed, a lot of the biomass in the rainforest does not live on the ground but in the canopy. The strongest candidate for a domesticated land mammal is the peccary, which lives in packs. Its behavior, however, is too unpredictable and aggressive to allow for domestication.

Another factor that may account for the great linguistic diversity in the tropical lowlands of South America is that no single agricultural system developed into

predominance there in pre-colonial times (Denevan 2001). If this observation is correct, it is possible that the strong reliance on manioc cultivation, which defines the tropical forest culture pattern, may have been a historical consequence of the onset of European colonization (Denevan 2001; Perry 2005). This is not to deny that manioc was an important crop in pre-colonial agricultural or agroforestry systems of the Amazon, but rather to observe that it was but a component of more diversified systems. Interestingly enough, however, there is so far little, if any, direct evidence of pre-colonial manioc cultivation in the Amazon. The study of chipped stones from griddles of the upper Orinoco area of Venezuela has merely shown that these artifacts were used for the grating and processing of a number of roots and tubers, including *Dioscorea* (Perry 2005). In the central Amazon, despite good conditions of preservation, so far no evidence of manioc cultivation has been found from a record of 2,000 years of human occupation. Moreover, in areas such as Marajó Island, at the mouth of the Amazon, no evidence whatsoever of agriculture has been found so far, despite the presence of artificial earth mounds and elaborated pottery (Roosevelt 1991; Schaan 2008).

Such observations, when put together, suggest that although plant domestication may have been very ancient in the tropical lowlands, the advent of predominantly agricultural-based economies was much more recent. The data also show that even in these latter cases it was likely that agriculture was primarily an opportunistic activity based on intense and sophisticated management (with stone axes and fire) of gardens and forest in different stages of ecological succession, rather than the pattern of extensive cultivation (using metal axes and chain saws) of large manioc gardens known today (Denevan 2001).

Summing up the argument, lowland South America has a remarkable linguistic diversity. There is no single linguistic family that dominates the area at a large scale in the same way as Indo-European in Europe or Bantu in sub-Saharan Africa. Such diversity probably resulted from a conjunction of the opportunistic and variable nature of the agroforestry systems that developed in the area, without the prevalence of one system over the other, and the fact that no social formation associated with a particular language was strong enough to politically expand on a large scale. The result is the pattern of great linguistic and cultural diversity seen in the Amazon today. The expectation is that such diversity would be mirrored in the archaeological record by distinct archaeological cultures. This was indeed the case in the central Amazon, as will be shown here.

THE ARCHAEOLOGICAL RECORD OF THE CENTRAL AMAZON

Regional surveys and excavations in a research area comprising ca. 900 km^2 located at the confluence of the Negro and Solimões (Amazon) Rivers have identified more than 100 sites and the stratigraphic excavation and mapping of 12 of these

(Heckenberger, Petersen, and Neves 1999; Petersen, Neves, and Heckenberger 2001; Neves et al. 2003, 2004; Lima, Neves, and Petersen 2006; Neves and Petersen 2006). As mentioned above, Lathrap, Rouse, Brochado, and Oliver proposed that this was a region of long, cumulative, and continuous human occupation from the early Holocene onward, culminating in large population aggregates by the early sixteenth century AD (Lathrap 1970; Oliver 2001). However, no consistent archaeological testing of this hypothesis was undertaken, despite previous preliminary work having been done there (Hilbert 1968; Simões 1974; Simões and Kalkmann 1987).

The identified sites are open-air and covered by garden plots, pasture, fallows of different sizes, or high forest. Most of the sites are quite large and multicomponential. The superimposition of different strata with different ceramic complexes, together with several dozen radiocarbon dates, allowed for the establishment of a chronology that spans ca. 2,000 years, from ca. 500 BC to AD 1500. Some of the sites were cross-dated based on the ceramic remains identified. Early Holocene pre-ceramic occupations were also found in the area, but they will not be discussed here.

A summarized and schematic cultural chronology of the central Amazon is presented in Table 2.1.

The earliest dates found so far for ceramic production in the area go back to the fourth century BC. Data on site size and composition indicate that the process of population growth in the central Amazon was not continuous: although there is a noticeable trend toward increase in site size and density during the second half of the first millennium AD, this trend is abruptly interrupted around the twelfth century AD, when most of the area became occupied with sites with ceramics from the Polychrome tradition.

In the central Amazon, from the seventh to the thirteenth centuries AD, there is an association between ring-shaped sites and ceramics belonging to the

TABLE 2.1. Summarized cultural chronology of the central Amazon, including ceramic and contextual data.

Local phase	*Tradition*	*Age*	*Site shape*	*Site size and density*
Açutuba	Incised-modeled	400 BC–AD 400	Unidentified	Small, shallow, without visible soil changes
Manacapurú	Incised-modeled	AD 500–900	Ring	Large, deep, associated with *terras pretas*
Paredão	?	AD 700–1200	Ring or horseshoe	Large, deep, associated with *terras pretas*
Guarita	Polychrome	AD 900–1500	Linear	Small, shallow, sometimes associated with *terras pretas*

FIGURE 2.2. *Composite view of artificial mound associated with occupation of the Paredão phase, Laguinho site. (Photo by Eduardo Neves)*

Manacapurú and Paredão phases (Donatti 2003; Moraes 2006). Ring villages in South America are normally associated with the Gê-speaking peoples from the central Brazilian plateau (Wüst and Barreto 1999) or with the first Arawak speakers in the Caribbean (Petersen 1996; Heckenberger 2005), but they were not previously known along the Amazon floodplain (Myers 1973). These villages were occupied over long periods of time, sometimes for centuries, and are archaeologically associated with the construction of small artificial mounds, deep anthropogenic *terra preta* soils, dense ceramic deposits, ample organic remains, and cemeteries with direct or urn burials. Based on this evidence, it is proposed that those ring villages were associated with the establishment of a regional system of interaction in the central Amazon, inferred, for instance, from the evidence of trade of Manacapurú ware in contemporary Paredão sites and vice versa (Donatti 2003; Moraes 2006). This hypothesis is strengthened by the fact that Paredão and Manacapurú occupations were contemporary, but that there is no sign of conflict between them. A contemporary ethnographic parallel to such a regional system may be the upper Xingú area of the southern Amazon.

In the beginning of the second millennium AD, significant changes are clearly visible in the archaeological record of the central Amazon. These changes include the replacement of sites of the Incised-modeled and other local traditions by sites of the Polychrome tradition, and also by the rapid expansion of the Polychrome tradition over a vast area, from the lower Amazon almost to the Andean piedmont in Colombia, Ecuador, and Peru. Contrary to the predictions of the cardiac model, such replacement was not a local process of change within the central Amazon. Rather, it was associated with the local establishment there of groups that originated elsewhere in Amazonia. The construction of defensive structures in at least two Paredão phase sites, one of them dating to the eleventh century, shows that this process of replacement may not have been a peaceful one (Neves 2009).

FIGURE 2.3. *View of Manacapurú funerary urns ready to be removed in boxes from excavation. Also noticeable are two circular pits in the foreground. These features are full of faunal, plant, and ceramic remains, from the Hatahara site. (Photo by Val Moraes)*

The cultural chronology of the central Amazon largely converges with what is known about other regional chronologies in the Amazon basin. From the beginning of the Christian era, a widespread and conspicuous pattern of population growth, site aggregation, and anthropogenic landscape changes can be traced throughout the area (Petersen, Neves, and Heckenberger 2001; Neves and Petersen 2006). These changes are matched by the sudden appearance, at different times and places, of large sites with deep stratified ceramic deposits associated with anthropogenic dark soils (Petersen, Neves, and Heckenberger 2001; Kern et al. 2003; Neves et al. 2003, 2004); artificial earthworks (Pärssinen, Schaan, and Ranzi 2009); raised fields and causeways (Denevan 1966; Erickson 2000); large villages surrounded by moats and connected by road networks (Heckenberger et al. 2003; Heckenberger 2005); artificial residential and funerary mounds associated with elaborate pottery (Meggers and Evans 1957; Roosevelt 1991, 1996; Schaan 2001b, 2004); quasi-urban settlement systems also associated with elaborated pottery, polished stone statuettes, and long-ranging trade networks (Roosevelt 1999; Gomes 2002; Nimuendajú 2004); and the construction of circular megalithic structures (Nimuendajú 2004; Cabral and Saldanha 2008). These changes visible in the archaeological record from the beginning of the first millennium AD onward cannot be connected to any single ceramic tradition or cultural group. Indeed, during most of the first millennium AD

FIGURE 2.4. *Group of circular pits of the Paredão phase exposed prior to excavation, Laguinho site. Dozens of features like this have been mapped and excavated at this site. Their presence is interpreted as an indicator of sedentary occupations there. (Photo by Eduardo Neves)*

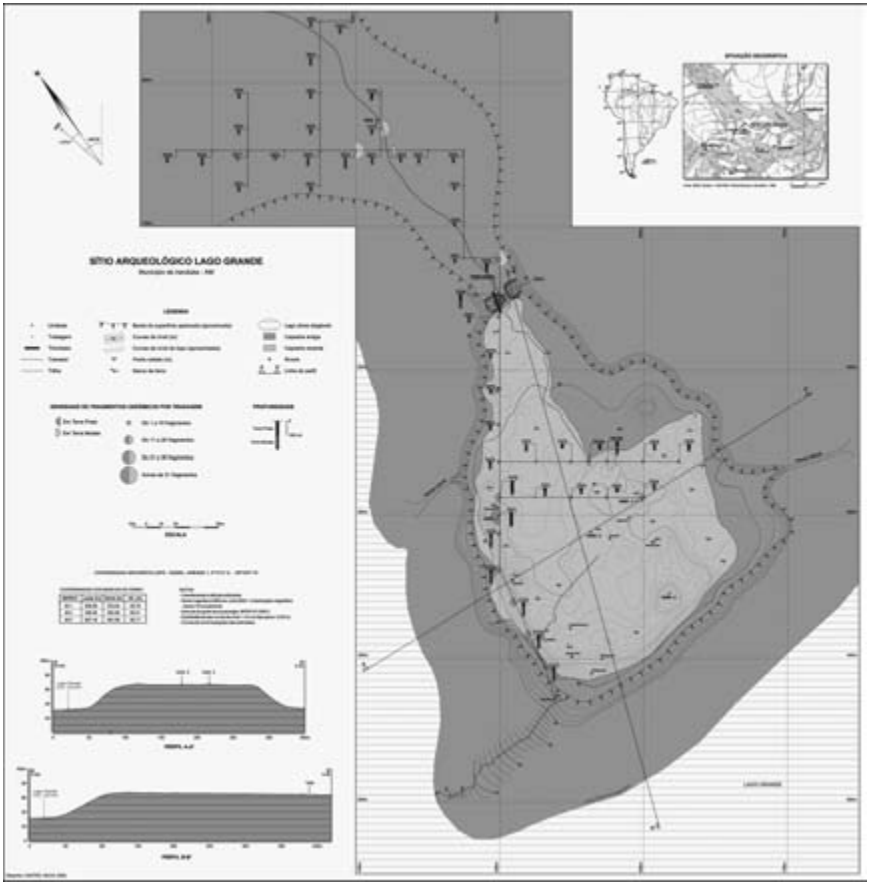

FIGURE 2.5. *Plan of Lago Grande site. Lago Grande is a typical ring village of the Paredão phase occupied from the seventh to the eleventh centuries AD. Houses are associated with mounds placed around a central plaza. Toward the end of occupation, in the eleventh century AD, a moat was built on the isthmus connecting the peninsula to the mainland. Soon afterward the site was abandoned only to be briefly reoccupied by a small Guarita phase village. (Drawing by Marcos Castro)*

the ceramic remains throughout Amazonia suggest a marked cultural diversity reflected in the simultaneous development of several distinct phases or traditions in different places. The image of cultural diversity expressed in Curt Nimuendajú's ethnohistorical map underscores this impression. If correct, this means that the birth of the "ethnographic present" in lowland South America may date to 2,000 years ago. This assertion does not mean to imply that indigenous societies have not changed in all this time: the archaeological record of the central Amazon is full of

evidence of change all the way to the sixteenth century AD. However, the available data show that the first of the agricultural-based lifestyles that were subsequently formalized into the "tropical forest" pattern date from this period. Indigenous Amazonian societies in the mid-Holocene were likely more mobile and reliant on economies dependent on fishing and foraging, even though plant domestication started in the early Holocene (Neves 2006).

INCISED-MODELED AND POLYCHROME CERAMICS AND THEIR RELATION TO ARAWAK AND TUPÍ SPEAKERS

Barrancoid sites in the lower Orinoco are consistently older than Incised-modeled sites along the Amazon floodplain (Hilbert 1968; Barse 2000; Boomert 2000; Gassón 2002; Lima, Neves, and Petersen 2006), but the similarities between Barrancoid and Incised-modeled ceramics are strong enough not to be overlooked (Evans and Meggers 1968; Hilbert 1968; Boomert 2000). Perhaps the best way to account for this is, on one hand, to accept Lathrap's hypothesis about a connection between Barrancoid and Incised-modeled ceramics, while rejecting his historical hypothesis about a central Amazonian origin, and, on the other hand, to accept Meggers's (1997) hypothesis that early Amazonian and lower Orinocan complexes derive from an initial center of production in northern Colombia. Heckenberger (2002) presents a model correlating the expansion of Arawak speakers with the expansion of ring villages, sedentary lifestyles, and Incised-modeled ceramics. The archaeological record of the second half of the first millennium AD in the central Amazon features some of these traits, allowing for the hypothesis that this area was occupied by an Arawak-based regional system. Pushing this hypothesis further, it can be proposed that an earlier center for Arawak expansion was located in what is today northern Colombia. At any rate, it is safe to affirm that the central Amazon was not the place of early Arawak dispersal, although during the first millennium it was most likely occupied by Arawak speakers.

The ethnic and political processes underlying the Polychrome expansion are not clear but have been a focus of research since the 1950s. Initially it was proposed that it had an Andean or circum-Caribbean origin (Meggers and Evans 1957; Evans and Meggers 1968). As better chronologies became available the hypothesis of an external origin was abandoned and a central Amazonian origin was proposed (Lathrap 1970; Brochado 1984; Lathrap and Oliver 1987; Oliver 1989). Nor is the hypothesis of a central Amazonian origin for the Polychrome tradition supported by the available chronologies (Hilbert 1968; Heckenberger, Neves, and Petersen 1998). Along the main channel of the Amazon, the earlier Polychrome sites are related to the Marajoara phase, with dates going back to the fifth century AD (Meggers and Danon 1988:248; Roosevelt 1991:313–314; Schaan 2001a:157), but it is only after AD 750 that dates are more frequent and display a smaller standard

deviation (Boomert 2004:259). In the upper Madeira basin, near the current border between Bolivia and Brazil, Polychrome occupations related to the Jatuarana and Jamari phases have been reported, with dates going back to ca. 700 BC (Miller et al. 1992:41–44, 55). These data show that the production of Polychrome ware started earlier in the upper Madeira basin than at Marajó Island, at the mouth of the Amazon.

By the twelfth and thirteenth centuries AD, most of the floodplains of the Amazon/Solimões and their tributaries were occupied by villages of different size where Polychrome ware was produced. The available data show a clear pattern in the dates: oldest in the upper Madeira, fairly old on Marajó Island, and consistently more recent as one moves upstream from the lower to the upper Amazon (Evans and Meggers 1968; Hilbert 1968; Simões 1974; Herrera, Bray, and McEwan 1980–1981; Brochado and Lathrap 1982; Meggers and Evans 1983; Simões and Kalkmann 1987; Simões and Lopes 1987; Heckenberger, Neves, and Petersen 1998; Schaan 2001a, 2004; Neves and Petersen 2006). Can the Polychrome expansion along the floodplain of the Amazon be correlated with Tupí-Guaraní speakers as proposed by Lathrap, Brochado, and Oliver? There is no single answer. It is likely that by the late 1400s, Amazonian social formations were multiethnic (Whitehead 1994; Hornborg 2005), but it may very well be that the early Polychrome expansion in the central Amazon was associated with a Tupí-Guaraní-related expansion toward the upper Amazon. The foundations for this hypothesis are, first, the fast pace of the Polychrome expansion toward the upper Amazon, similar to the pattern found in the Tupinambá expansion along the Atlantic coast; second, the apparent association of that expansion with warfare, which is also verified among Tupinambá groups on the coast; third, the fact that most Polychrome sites are shallow and not very large, indicating a brief occupation span, which again resonates with Tupinambá archaeology; fourth, the fact that the upper Amazon was occupied in the sixteenth century AD by speakers of Tupí-Guaraní languages, such as the Omagua; and, finally, the fact that the earliest known Polychrome ceramics are found in the upper Madeira, which is also the putative center for the Tupí expansion.[1]

The acceptance of a southwestern, upper Madeira basin origin for the Polychrome tradition may also help us understand an unresolved puzzle of Amazonian archaeology: the fact that there are no signs of Polychrome sites on the lower Tapajós, the Nhamundá, or the Trombetas Rivers, an area where most of the known sites have ceramics that belong to the Incised-punctated tradition (Kondurí and Tapajós). The inception of the Incised-punctated tradition dates from the end of the first millennium AD (Gomes 2002:131), later than the earliest Polychrome sites elsewhere in the Amazon (Roosevelt 1999). The closest similarities with the Incised-punctated tradition are found in the ceramics of the Arauquinoid series of the middle Orinoco (Zucchi 1985; Navarrete 1999:41), coastal Suriname and coastal French Guyana (Rostain 1994:84; Rostain and Versteeg 2004:239), and in

deposits dating from AD 400 to 1400 (Zucchi 1985). In the Guianese coastal plain, the dates are a little late, starting around AD 600 and going to AD 1600 (Rostain and Versteeg 2004). The Santarém area, the middle Orinoco, and the coastal plain of Suriname and French Guyana lie roughly at the same radial distance from the Guyana plateau, a region predominantly occupied by Carib-speaking groups today, suggesting that both the Arauquinoid series and the Incised-punctated tradition are local manifestations, from the late first millennium AD onward, of a radial Carib expansion toward the Guyanese coast, the middle Orinoco, and the lower Amazon (Brochado and Lathrap 1982; Zucchi 1985).

Summing up this argument, it is likely that by ca. AD 1000 there were some regions in the Amazon that had good matches between patterns of language distribution and patterns in the archaeological record: (1) the association between Panoan speakers and sites with Cumancaya ceramics on the Ucayali River, (2) the association of Tupí-Guaraní speakers and the wave of expansion of the Polychrome tradition from the central Amazon to upper Amazon, (3) the association of Carib speakers and sites with Kondurí and Tapajó ceramics in the Santarém area, and (4) the association between sites with Incised-modeled ceramics with Arawak occupations in places such as the upper Xingú and earlier in the central Amazon. Such strong matches likely disappeared over time, as demographic expansions coalesced and local population densities increased, giving place to the development in situ of multiethnic and multilinguistic regional systems.

CONCLUSIONS

The data from the central Amazon presented here help us understand the general history of Amazonia during the 1,500 years that preceded the beginning of European colonization. They show that conspicuous differences in ceramic technology and decoration are matched by other dimensions of variability in the archaeological record, including general site layout, length of occupation, and structures such as cemeteries and artificial mounds. These differences are here taken to indicate a record of the establishment of different ethnic groups or multiethnic regional systems. Thus, Manacapurú- and Paredão-related occupations featuring ring villages or ring-shaped structures, deep anthropogenic *terra preta* soils, and artificial residential mounds that were inhabited from the seventh to the twelfth centuries AD are interpreted as the manifestation of an Arawak-based regional system not unlike others described in the literature. The sudden changes in the archaeological record of the area, associated with the replacement of Paredão by Guarita and with modifications in settlement patterns, are interpreted as indicating the arrival in the area of another ethnic group with origins in southwestern Amazonia, the upper Madeira basin. The descendants of these newcomers were the people who settled along the Solimões floodplains just prior to the arrival of the Europeans in the sixteenth century AD.

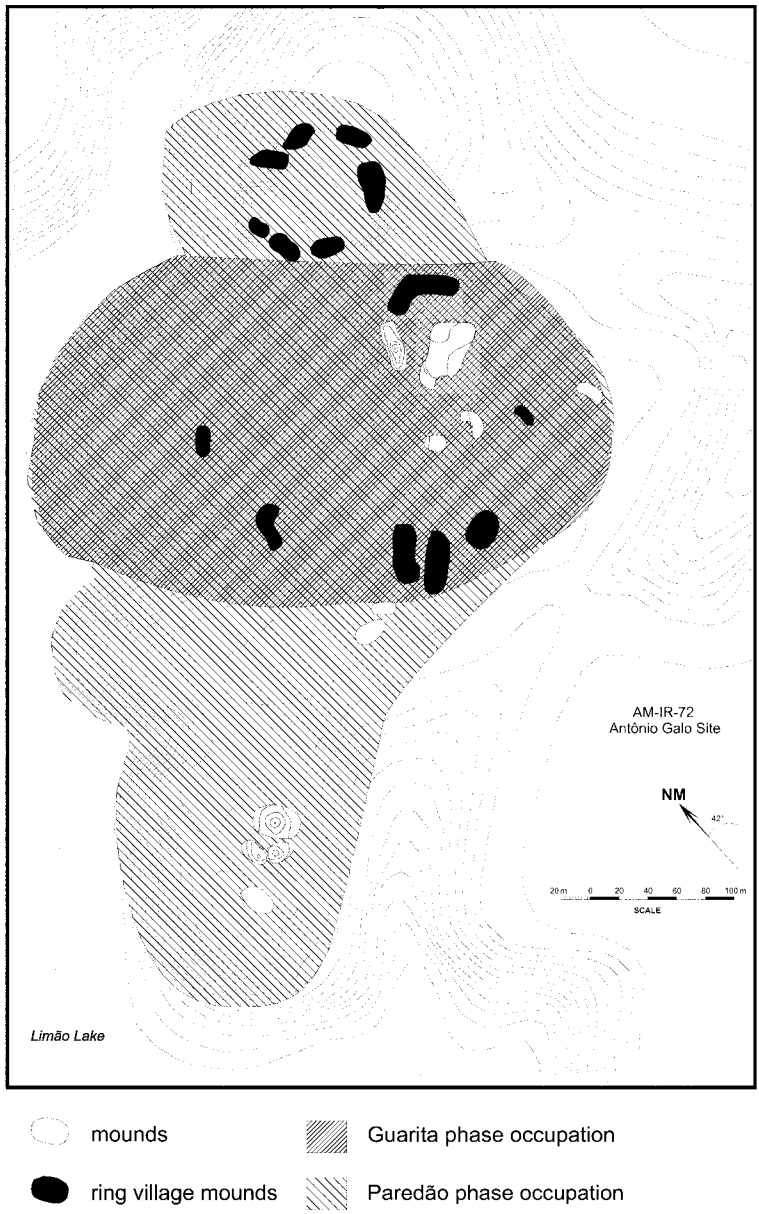

FIGURE 2.6. *Sítio Antonio Galo. View of Antonio Galo site with ring concentration of mounds on the north side. Paredão phase occupation covered the whole area of the site and is associated with mounds. The Guarita occupation was smaller and covered only the central part of the site. (Drawing by Claide Moraes).*

FIGURE 2.7. *Typical vessel of the Guarita phase, showing characteristic excised decoration on mesial flange. (Photo by Maurício de Paiva)*

The archaeological sequence of the central Amazon is quite long, going back to the early Holocene (Costa 2009). However, evidence of sedentary occupations becomes visible only with Açutuba phase occupations, dated to the centuries prior to the beginning of the Christian era (Lima, Neves, and Petersen 2006). The same pattern can be seen elsewhere in much of Amazonia, where early evidence of sedentary occupations is also dated to around the beginning of the Christian era (Neves 2006, 2008). Such apparently drastic and sudden changes can be seen as the manifestation in the archaeological record of strong "ethnogenetic" processes working throughout lowland South America during the first millennium AD. It remains to be understood why such changes happened at that time, after almost 10,000 years of human occupation. In the absence of strong palaeo-botanical data, despite advances in recent years it can be proposed that these changes are associated with a stronger reliance on plant cultivation as the major source of food production. However, since plant domestication began several millennia earlier, it is still unclear why it took such a long time until plant cultivation became a major source of food production (Neves 2006, 2009). This suggests a very different scenario from the Near East, where the beginning of agriculture was soon followed by the establishment of sedentary and urban life.

As research on plant domestication, cultivation, and management advances, it is likely that we will be in a better position to understand which different agro-ecological systems prevailed in pre-colonial Amazonia. The strong reliance on manioc cultivation described in the ethnographic literature may be a historical consequence of European colonization in the same way that the potato became a major staple in western Europe after the seventeenth century AD. The wide agro-ecological diversity of the region, which in many ways mirrors the natural biodiversity of the Amazon, can thus partially explain why so many different indigenous languages are spoken in Amazonia today. A better understanding of the cultural, social, and ecological dynamics of the middle Holocene, prior to the beginning of the Christian era, will help us understand how these processes began.

The Amazon basin is a hot spot of natural diversity today and it was a cradle of cultural diversity in the past. Archaeology and cultural anthropology show us that these forms of diversity are intertwined. Nature has been transformed by human action over the millennia in the same way that some patterns of appropriation of nature, such as the "evolutionary choice" of not domesticating animals, can also be related to the natural conditions of ecological diversity and protein abundance of the Amazon. Given such a general background of cultural diversity, it is reasonable that diverse forms of management of nature flourished in the past. This was a recurrent and continuous pattern that tended to reinforce cultural diversity over the millennia.

In this chapter I have tried to show that past cultural variability in the Amazon can be assessed by archaeology if one takes a contextual approach that goes beyond the study of ceramics and includes data on settlement size, shape and length of occupation, the comparison of regional chronologies, and so forth. By following this approach one overcomes the rigid debate on the possibility, or not, of using archaeological data as markers of cultural and linguistic variability and works toward identifying the contexts where such correlations could be established. The truth, once more, may be in the middle. Is there something more Amazonian than this?

Acknowledgments. Fieldwork in the central Amazon over the years has been covered by several grants from the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP). I thank Alf Hornborg and Jonathan Hill for the invitation to write this chapter and to participate in the symposium that generated this book, and for their insightful and generous comments. The same goes for the anonymous reviewers of this chapter. Many thanks as well to my colleagues of the Central Amazon Project, from whose work I borrow extensively, but who may not be in full agreement with all the ideas presented here.

NOTE

1. The earliest dates for Polychrome sites come from the upper Madeira basin, the same area that, based on genetic evidence, has been proposed as the center for the earliest domestication of manioc, *Manihot esculenta* (Olsen and Schaal 1999), and peach palm, *Bactris gasipaes* (Clement 1999). In fact, these early Polychrome sites of the upper Madeira are earlier than any *terra preta* sites known today in Amazonia (Miller et al. 1992). If *terras pretas* are formed in contexts of sedentary occupation, thus being markers of specific social and economic conditions, and since the earliest *terras pretas* are also found in the upper Madeira, together with Polychrome ware, it can be posited that early Polychrome expansion is also correlated with the expansion of manioc and peach-palm farming among Tupí-speaking populations from the upper Madeira basin beginning 2,500 years ago.

REFERENCES

Ammerman, Albert, and Luigi Luca Cavalli-Sforza. 1984. *The Neolithic Transition and the Genetics of Populations in Europe.* Princeton, NJ: Princeton University Press.

Anthony, David. 2007. *The Horse, the Wheel, and Language: How Bronze Age Riders from the Eurasian Steppes Shaped the Modern World.* Princeton, NJ: Princeton University Press.

Barse, William. 2000. "Ronquín, AMS Dates, and the Middle Orinoco Sequence." *Interciencia* 25 (7): 337–341.

Bellwood, Peter, and Colin Renfrew, eds. 2002. *Examining the Farming/Language Dispersal Hypothesis*. Cambridge: McDonald Institute for Archaeological Research.

Boomert, Arie. 2000. *Trinidad, Tobago and the Lower Orinoco Interaction Sphere*. Alkmaar: Cairi Publications.

———. 2004. "Koriabo and the Polychrome Tradition: The Late-Prehistoric Era between the Orinoco and Amazon Mouths." In *Late Ceramic Age Societies in the Eastern Caribbean*, edited by André Delpuech and Corinne Hoffman, 251–266. BAR International Series 1273, Paris Monographs in American Archaeology 14. Oxford: Archaeopress.

Brochado, José. 1984. "An Ecological Model of the Spread of Pottery and Agriculture into Eastern South America." PhD dissertation, Department of Anthropology, University of Illinois at Urbana-Champaign.

Brochado, José, and Donald Lathrap. 1982. "Chronologies in the New World: Amazonia." MS thesis, Department of Anthropology, University of Illinois at Urbana-Champaign.

Cabral, Mariana, and João Saldanha. 2008. "Paisagens Megalíticas da Costa Norte do Amapá." *Revista de arqueologia* 21: 3–20.

Clement, Charles. 1999. "1492 and the Loss of Amazonian Crop Genetic Resources II: Crop Biogeography at Contact." *Economic Botany* 53 (2): 203–216.

Costa, Fernando W.S. 2009. "Arqueologia das campinaranas do baixo rio Negro: Em busca dos pré-ceramistas nos areais da Amazônia Central." PhD dissertation, Programa de Pós-Graduação em Arqueologia, Museu de Arqueologia e Etnologia, Universidade de São Paulo, Brazil.

Denevan, William. 1966. *Aboriginal Cultural Geography of the Llanos de Mojos of Bolivia*. Los Angeles: University of California Press.

———. 2001. *Cultivate Landscapes of Native Amazonia and the Andes.* New York: Oxford University Press.

Donatti, Patricia 2003. "A arqueologia da margem norte do Lago Grande, Iranduba, Amazonas." Tesis de maestría, Programa de Pós-Graduação em Arqueologia, Museu de Arqueologia e Etnologia da Universidade de São Paulo, São Paulo.

Erickson, Clark. 2000. "An Artificial Landscape-Scale Fishery in the Bolivian Amazon." *Nature* 408: 190–193.

Evans, Clifford, and Betty Meggers. 1968. *Archaeological Investigations on the Rio Napo, Eastern Ecuador*. Smithsonian Contributions to Anthropology, vol. 6. Washington, DC: Smithsonian Institution Press.

Fausto, Carlos. 2001. *Inimigos Fiéis: História, guerra e xamanismo na Amazônia*. São Paulo: Editoria da Universidade de São Paulo.

Gaspar, Maria D., Paul De Blasis, Suzanne Fish, and Paul Fish. 2008. "Sambaqui (Shell Mound) Societies of Coastal Brazil." In *Handbook of South American Archaeology*, edited by Helaine Silvermann and William Isbell, 319–335. New York: Springer.

Gassón, Rafael. 2002. "Orinoquia: The Archaeology of the Orinoco River Basin." *Journal of World Prehistory* 16 (3): 237–311.

Gomes, Denise. 2002. *Cerâmica arqueológica da Amazônia: Vasilhas da coleção tapajônica MAE-USP*. São Paulo: Editora da Universidade de São Paulo / Imprensa Oficial de São Paulo.

Harris, David. 2002. "The Expansion Capacity of Early Agricultural Systems: A Comparative Perspective on the Spread of Agriculture." In *Examining the Farming/Language Dispersal Hypothesis*, edited by Peter Bellwood and Colin Renfrew, 31–39. Cambridge: McDonald Institute for Archaeological Research.

Heckenberger, Michael. 1998. "Manioc Agriculture and Sedentism in Amazonia: The Upper Xingu Example." *Antiquity* 72 (277): 633–648.

———. 2002. "Rethinking the Arawakan Diaspora: Hierarchy, Regionality, and the Amazonian Formative." In *Comparative Arawakan Histories: Rethinking Language Family and Culture Area in Amazonia*, edited by J. D. Hill and F. Santos-Granero, 99–122. Urbana: University of Illinois Press.

———. 2005. *The Ecology of Power: Culture, Place and Personhood in the Southern Amazon, AD 1000–2000*. New York: Routledge.

Heckenberger, Michael, Afukaká Kuikuro, U. Tabata Kuikuro, J. Christian Russell, Morgan Schmidt, Carlos Fausto, and Bruna Franchetto. 2003. "Amazonia 1492: Pristine Forest or Cultural Parkland?" *Science* 301: 1710–1714.

Heckenberger, Michael, Eduardo Neves, and James Petersen. 1998. "De onde Surgem os modelos? Consideracões sobre a origern e expansãodos Tupí." *Revista de Antropologia* 41 (1): 69–96.

Heckenberger, Michael, James Petersen, and Eduardo Neves. 1999. "Village Size and Permanence in Amazonia: Two Archeological Examples from Brazil." *Latin America Antiquity* 10 (4): 353–376.

Herrera, Leonor, Warwick Bray, and Colin McEwan. 1980–1981. "Datos sobre la arqueología de Araracuara." *Revista Colombiana de antropología* 23: 183–251.

Hilbert, Peter. 1968. *Archaologische Untersuchungen am Mittlern Amazonas*. Berlin: Dietrich.

Hornborg, Alf. 2005. "Ethnogenesis, Regional Integration, and Ecology in Prehistoric Amazonia: Towards a Systemic Perspective." *Current Anthropology* 46 (4): 589–620.

Kern, Dirse, Gilma D'Aquino, Tarcísio Rodrigues, Francisco J.L. Frazão, Wim Sombroek, Thomas P. Myers, and Eduardo G. Neves. 2003. "Distribution of Amazonian Dark Earths in the Brazilian Amazon." In *Amazonian Dark Earths: Origins, Properties, Management*, edited by J. Lehmann, D. Kern, B. Glaser, and W. Woods, 51–76. Dordrecht: Kluwer Academic Publishers.

Kirch, Patrick. 2000. *On the Road of the Winds: An Archaeological History of the Pacific Islands before European Contact*. Berkeley: University of California Press.

Lathrap, Donald. 1970. *The Upper Amazon: Ancient Peoples and Places*. London: Thames and Hudson.

———. 1977. "Our Father the Cayman, Our Mother the Gourd: Spinden Revisited or a Unitary Model for the Emergence of Agriculture in the New World." In *Origins of Agriculture*, edited by C. Reed, 713–751. The Hague: Mouton.

Lathrap, Donald, and José Oliver. 1987. "Agüerito: El complejo policromo mas antiguo de América en la confluencia del Apure y el Orinoco (Venezuela)." *Interciencia* 12 (6): 274–289.

Lima, Helena P., Eduardo G. Neves, and James B. Petersen. 2006. "A Fase Açutuba: Um novo complexo cerâmico na Amazônia Central." *Arqueología Suramericana, Popayan-Colômbia* 2 (1): 26–52.

Meggers, Betty. 1997. "La cerámica temprana en América del Sur: Invención independiente o difusión?" *Revista de arquelogía Americana* 13: 7–40.

Meggers, Betty, and Jacques Danon. 1988. "Identification and Implications of a Hiatus in the Archaeological Sequence on Marajó Island, Brazil." *Journal of the Washington Academy of Sciences* 78 (3): 245–253.

Meggers, Betty, and Clifford Evans. 1957. *Archaeological Investigations at the Mouth of the Amazon*. Bureau of American Ethnology, Bulletin 167. Washington, DC: Smithsonian Institution.

———. 1983. "Lowland South America and the Antilles." In *Ancient South America*, edited by J. Jennings, 287–335. San Francisco: W. H. Freeman and Company.

Miller, Eurico T., et al. 1992. *Arqueologia nos empreendimentos hidrelétricos da Eletronorte: Resultados preliminares.* Brasilia: Eletronorte.

Moraes, Claide. 2006. "Levantamento arqueológico da região do lago do Limão, Iranduba, Amazonas." Tesis de maestría, Programa de Pós-Graduação em Arqueologia, Museu de Arqueologia e Etnologia, Universidade de São Paulo, São Paulo.

Myers, Thomas. 1973. "Toward the Reconstruction of Prehistoric Community Patterns in the Amazon Basin." In *Variation in Anthropology*, edited by Donald W. Lathrap and Jody Douglas, 233–252. Urbana: Illinois Archaeological Survey.

Navarrete, Rodrigo. 1999. "El Orinoco medio." In *El arte prehispánico de Venezuela*, edited by Arroyo Miguel, Blanco Lourdes, and Erika Wagner, 34–51. Caracas: Fundación Galeria de Arte Nacional.

Neves, Eduardo. 2006. *Arqueologia da Amazônia.* Rio de Janeiro: Jorge Zahar.

———. 2008. "Ecology, Ceramic Chronology and Distribution, Long-Term History and Political Change in the Amazonian Floodplain." In *Handbook of South American Archaeology*, edited by H. I. Silverman and W. H. Isbell, 359–379. New York: Springer.

———. 2009. "Warfare in Pre-Colonial Amazonia: When Carneiro Meets Clastres." In *Warfare in Cultural Context: Practice Theory and the Archaeology of Violence*, edited by Axel Nilsen and William Walker, 139–164. Tucson: University of Arizona Press.

Neves, Eduardo, and James Petersen. 2006. "Political Economy and Pre-Columbian Landscape Transformations in Central Amazonia." In *Time and Complexity in Historical Ecology: Studies in the Neotropical Lowlands*, edited by W. Balée and C. Erickson, 279–309. New York: Columbia University Press.

Neves, Eduardo, James Petersen, Robert Bartone, and Carlos Augusto da Silva. 2003. "Historical and Socio-Cultural Origins of Amazonian Dark Earths." In *Amazonian Dark Earths: Origins, Properties, Management*, edited by J. Lehmann, D. C. Kern, B. Glaser, and W. I. Woods, 29–50. Dordrecht: Kluwer Academic.

Neves, Eduardo, James Petersen, Robert Bartone, and Michael Heckenberger. 2004. "The Timing of Terra Preta Formation in the Central Amazon: Archaeological Data from Three Sites." In *Amazonian Dark Earths: Explorations in Space and Time*, edited by B. Glaser and W. I. Woods, 125–134. Heidelberg: Springer.

Nimuendajú, Curt. 2004. *In Pursuit of a Past Amazon: Archaeological Researches in the Brazilian Guyana and in the Amazon Region*. A posthumous work compiled and translated by Stig Rydén and Per Stenborg, 45. Ethnological Studies. Gothenburg: Världskulturmuseet.

Noelli, Francisco Silva. 2008. "The Tupí Expansion." In *Handbook of South American Archaeology*, edited by H. Silverman and W. Isbell, 659–670. New York: Springer.

Nordenskiöld, Erland. 1930. *L'Archéologie du bassin de l'Amazone*. Ars Americana 1. Paris: Les Éditions G. van Oest.

Oliver, José. 1989. "The Archaeological, Linguistic and Ethnohistorical Evidence for the Expansion of Arawakan into Northwestern Venezuela and Northeastern Colombia." Tesis de doctorado, Department of Anthropology, University of Illinois at Urbana-Champaign.

———. 2001. "The Archaeology of Forest Foraging and Agricultural Production in Amazonia." In *Unknown Amazon, Culture in Nature in Ancient Brazil*, edited by C. McEwan, C. Barreto, and E. Neves, 50–85. London: British Museum Press.

Olsen, Kenneth, and Barbara Schaal. 1999. "Evidence on the Origin of Cassava: Phylogeography of Manihot Esculenta." *Proceedings of the National Academy of Sciences* 96: 5586–5591.

Pärssinen, Martti, Denise Schaan, and Alceu Ranzi. 2009. "Pre-Columbian Geometric Earthworks in the Upper Purús: A Complex Society in Western Amazonia." *Antiquity* 83: 1084–1095.

Perry, Linda. 2005. "Reassessing the Traditional Interpretation of 'Manioc' Artifacts in the Orinoco Valley of Venezuela." *Latin American Antiquity* 16 (4): 409–426.

Petersen, James. 1996. "The Archaeology of Trants, Montserrat, Part 3: Chronological and Settlement Data." *Annals of the Carnegie Museum* 63 (4): 323–361.

Petersen, James, Eduardo Neves, and Michael Heckenberger. 2001. "Gift from the Past: *Terra Preta* and Prehistoric Amerindian Occupation in Amazonia." In *Unknown Amazon: Culture in Nature in Ancient Brazil*, edited by C. McEwan, C. Barreto, and E. G. Neves, 86–105. London: British Museum Press.

Politis, Gustavo. 1996. *Nukak*. Bogotá: Instituto Amazónico de Investigaciones Científicas, SINCHI.

Renfrew, Colin. 2000. "At the Edge of Knowability: Towards a Prehistory of Languages." *Cambridge Archaeological Journal* 10 (1): 7–34.

Rindos, David. 1984. *The Origins of Agriculture*. New York: Academic Press.

Roosevelt, Anna. 1991. *Moundbuilders of the Amazon: Geophysical Archaeology on Marajó Island, Brazil*. San Diego: Academic Press.

———. 1996. "The Origins of Complex Societies in Amazonia." In *The Prehistory of the Americas*, edited by T. Hester, L. Laurencich-Minelli, and S. Salvatori, 27–31. International Union of Prehistoric and Protohistoric Sciences, A.B.C.O. Edizioni, Forli.

———. 1999. "The Maritime, Highland, Forest Dynamic and the Origins of Complex Culture." In *The Cambridge History of the Native Peoples of the Americas,* Vol. 3: *South America*, edited by Stuart Schwartz and Frank Salomon, 264–349. New York: Cambridge University Press.

Rostain, Stéphen. 1994. "L'Ocupation amérindienne ancienne du litoral de Guyana." PhD dissertation, Université de Paris / Sorbonne. Collection Travaux et Documents Microedités, ORSTROM, Paris.

Rostain, Stéphen, and Aad H. Versteeg. 2004. "The Araquinoid Tradition in the Guianas." In *Late Ceramic Age Societies in the Eastern Caribbean*, edited by A. Delpuech and C. Hoffman, 233–250. BAR International Series 1273, Paris Monographs in American Archaeology 14. Oxford: Archaeopress.

Rouse, Irving. 1985. "Arawakan Phylogeny, Caribbean Chronology, and Their Implications for the Study of Population Movement." *Antropologica* 63–64: 9–21.

———. 1992. *The Tainos: Rise and Decline of the People who Greeted Columbus.* New Haven, CT: Yale University Press.

Schaan, Denise. 2001a. "Os dados inéditos do Projeto Marajó." *Revista do Museu de Arqueologia e Etnologia da Universidade de São Paulo* 11: 141–164.

———. 2001b. "Into the Labyrinths of Marajoara Pottery: Status and Cultural Identity in Prehistoric Amazonia." In *Unknown Amazon: Culture in Nature in Ancient Brazil*, edited by C. McEwan, C. Barreto, and E. G. Neves, 108–133. London: British Museum Press.

———. 2004. "The Camutins Chiefdom." PhD dissertation, Department of Anthropology, University of Pittsburgh, Pennsylvania.

———. 2008. "The Non-Agricultural Chiefdoms of Marajo Island." In *Handbook of South American Archaeology*, edited by H. Silverman and W. Isbell, 339–357. New York: Springer.

Simões, Mario. 1974. "Contribuição à arqueologia dos arredores do baixo Rio Negro." In *Programa Nacional de Pesquisas Arqueológicas 5: Publicações avulsas do Museu Paraense Emílio Goeldi* 26: 165–200.

Simões, Mario, and Ana Kalkmann. 1987. "Pesquisas arqueológicas no médio Rio Negro (AM)." *Revista de arqueologia* 4 (1): 83–116.

Simões, Mario, and Daniel Lopes. 1987. "Pesquisas arqueológicas no baixo/médio Rio Madeira (Amazonas)." *Revista de arqueologia* 4 (1): 117–134.

Whitehead, Neil L. 1994. "The Ancient Amerindian Polities of the Amazon, Orinoco, and the Atlantic Coast: A Preliminary Analysis of Their Passage from Antiquity to Extinction." In *Amazonian Indians from Prehistory to the Present: Anthropological Perspectives*, edited by Ana C. Roosevelt, 33–53. Tucson: University of Arizona Press.

Wüst, Irmhild, and Cristiana Barreto. 1999. "The Ring Villages of Central Brazil: A Challenge for Amazonian Archaeology." *Latin American Antiquity* 10 (1): 3–23.

Zucchi, Alberta. 1985. "Evidencias arqueológicas sobre posibles grupos de lenguas Caribe." *Antropológica* 63–64: 23–44.