Chapter 2
Landscape Transformation and Language Change: A Case Study in Amazonian Historical Ecology[1]

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Abstract The author shows the influence of European trade and colonisation on the changes in Amerindian vocabulary. He uses the analysis to reflect on the knowledge of Amazonian landscape and associated biota. Balée is concerned specifically with the case of cacao and the way in which its denominations were transformed in the Tupí-Guaraní language, thanks to the importance of the commodity in the 18th century Amazonia. Balée shows that the socio-environmental picture in which both *caboclo* and Amerindian societies were placed was very complex, a timely reminder of the importance of a historical approach for the understanding of both.

Keywords Cacao · Linguistic change and continuity · South America · Amerindian languages · Tupí · Lingua geral

Historical Ecology and Amazonian Languages

Historical ecology is a perspective on relations between people and the environment that, in principle, envisions how historical phenomena transform landscapes and how such transformations become conditioned and understood through local knowledge, behavior, and culture over time. The current state of landscape knowledge possessed by folk (caboclo) and indigenous peoples of Amazonia is, in part, a product of history. As the landscapes have changed through time, and continue to change, that knowledge, too, shows increments in some domains, losses in others. Such losses and increments of landscape

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knowledge are reflected in vocabulary changes, just as vocabulary can be used as an index, however crude, to knowledge of the past state of Amazonian landscapes.

Knowledge of Amazonian landscapes – in the mental control of one or more people – and based on experiential data, is at least as ancient as the Early Holocene, the presumable time of original occupation. No doubt some of that original knowledge of Amazonian landscapes has persisted, but it cannot be accessed with exactitude, since linguistic reconstruction (of words, technology, biota, and concepts) is not reliable beyond about five or six thousand years (see Kaufman, 1990), given what may be considered a background rate of vocabulary loss and change similar to the more well-accepted notion of a background rate of extinction when referring to biota over long sweeps of evolutionary time.

Archaeological data alone are insufficient to probe fully ancient knowledge of Amazonian landscapes, since knowledge is more than material artifacts: it is to be sure those artifacts, but it is also behavior and cognition, which is partly reflected in real language, including written texts. Amazonia lacks written documentation, of course, before 1500*, but one can utilize methods from historical linguistics in order to begin to build a model of landscape knowledge and the changes it underwent during thousands of years before the European conquest*.

One can demonstrate that within a five thousand year time period, however short from an evolutionary viewpoint, many of the landscapes and the languages associated with these in Amazonia underwent transformations, sometimes of a profound character. The landscape is that portion of the environment codified in language and subject to human intervention. A landscape represents an encounter between space and time, nature and history, biotic communities and human societies, and it is central to the conceptual apparatus of historical ecology. Landscape history is linked to environmental knowledge, and in Amazonia it is marked since the Middle Holocene by two deeply transforming phenomena: (1) the development of a system of swidden agriculture and fallow forest management by indigenous (i.e. pre-European) people and (2) the reconstitution of that system by neo-European expansionism, colonialism, and commercialization of existing landscapes in the New World, including Amazonia.

The focus of this chapter is on the second of these two historical phenomena, specifically on how eighteenth century colonialism, Jesuit missionization, dissemination of a contact language (*Língua Geral Amazônica*), and the penetration of the European world system of commerce and finance changed native vocabulary and hence, how these contact and colonialism transformed local interpretation and knowledge of Amazonian landscapes and associated biota. In particular, the emphasis here is on a single product, one of the *drogas do sertão*, cacao, and how the words and concepts for cacao underwent change in native languages given the fact that cacao and cacao beans were for some time in the eighteenth centuries the principal export commodity of Amazonia.

Linguistic and Cultural Background of the Ka'apor in the Eighteenth Century

The Ka'apor language (also known as *Urubu*, Urubú, and Urubu-Kaapor) is one of about forty languages in Tupí-Guaraní, itself one of ten branches of the Tupí family (Jensen, 1999; Rodrigues, 1999; Rodrigues & Cabral, 2002). Ka'apor is spoken in extreme eastern Amazonia in the Brazilian state of Maranhão, specifically in the Gurupi and Turiaçu River basins, though it has recent historical origins to the west, in the present state of Pará. Eight sub-groups of Tupí-Guaraní have been identified, chiefly in terms of phonological criteria (Jensen, 1999; Rodrigues, 1986; Rodrigues & Cabral, 2002), though there is some disagreement over what languages should be included in each of the subgroups (see Mello, 2002). Ka'apor has been classified in subgroup #8 in three slightly different iterations of this model; for the purpose of consistency, I will be using specifically the revised classification of Tupí-Guaraní proposed by Rodrigues and Cabral (2002), with the caveat that minor revisions in that model may become standard in the future. Subgroup #8 also includes Wayãpi, Guajá, and at least seven other living and dead languages (Jensen, 1999; cf. Mello, 2002).

Beatriz Corrêa da Silva (1997, p. 83) argued that Ka'apor is very close to Wayãpi in terms of phonological criteria. Indeed, Ka'apor informants have told me that based on their contacts with Wayãpi speakers (of the Wayampipuku dialect) in the Casa do Índio near Belém, Pará, they can understand Wayãpi better than other Tupí-Guaraní languages they have heard, in spite of unlike stress patterns in the two languages and a number of Carib borrowings in Wayãpi not occurring in Ka'apor. Detailed evidence from ritual also indicates an intimate association between Ka'apor and Wayãpi cultures that would have existed about three hundred years ago (Balée, 2000). But according to Corrêa da Silva (1997, p. 83), Ka'apor is unlike Wayãpi in certain morphological respects. In fact, she claims Ka'apor is more like Língua Geral Amazônica (henceforth, LGA), a Tupí-Guaraní creole known also as Nhe'engatú ('the good talk', Jensen, 1999, p. 127) and which is classified in subgroup #3, in terms of pronominal prefixes, pronominal system in general, and pronominal marking on verbs (see Corrêa da Silva, 2001).

Corrêa da Silva (1997, pp. 88–89) registered numerous, apparently borrowed, lexical items that were presumably present in Ka'apor before the Ka'apor ancestors became peaceful with Brazilian authorities and society in 1928, such as words for caboclo (Amazonian peasant), Catholic priest [*padre*], comrade [*camarada*] (or non-Indian person), Christian, mother [*mamãe*] (vocative), and father [*papai*] (vocative) [also see Balée, 1994, pp. 29–30 for similar evidence]. The supposition is that LGA was the donor language of these and other borrowed terms in Ka'apor. Wayãpi also underwent LGA influence (Jensen, 1990, cited in Corrêa da Silva, 1997, pp. 86), but perhaps not so much as Ka'apor. Where and how did this influence originate, and what, if any, implications does it have for Ka'apor nomenclature regarding natural things in their environment?

LGA made its appearance in Amazonia some time after the Portuguese founded a fort (*Forte do Presépio*) in 1616 that would become the city of Belém. LGA was based on Tupinambá spoken in the Lower Amazonian, Portuguese colony called the Province of Maranhão e Grão Pará, and it underwent significant Portuguese lexical influence. LGA was partly the linguistic product of marriages between Tupinambá women and Portuguese soldiers and colonists (Corrêa da Silva, 1997, pp. 83–84 et passim; Rodrigues, 1986, pp. 102), and partly the influence of learned Jesuits who brought many aspects of the language with them from coastal Brazil (the uniformity of Tupinambá along the coast of Brazil has been widely noted). The Tupí-Guaraní creole of southern Brazil, Língua Geral Paulista or Tupí Austral, developed in quite parallel circumstances (Jensen, 1999, pp. 127). Jesuit missionaries arrived in the region of the estuary and Lower Amazon in 1636 (Cruz, 1973), and they helped institutionalize LGA in mission settings. By 1655, there were 54 Jesuit missions in Amazonia, mostly along the Amazon River itself and south of it (Leonardi, 1999, pp. 56). LGA became the dominant language in the Brazilian Amazon and would be supplanted for the most part by Portuguese only about two hundred years later, during the rubber boom, beginning in the latter half of the nineteenth century, when hundreds of thousands of monolingual immigrants from northeastern Brazil arrived in the region to take up a life of rubber tapping (Leonardi, 1999, pp. 75; Moreira Neto, 1988, pp. 43–45).

By the time of the rubber cycle in Amazonian history, the Ka'apor as a people had long been isolated from and hostile to rubber tappers and Luso-Brazilian society generally (Balée, 1984). In other words, the Ka'apor were never 'caboclos' per se. Rather, the close of the colonial period of Ka'apor history in the mid to late 1700s helps us to comprehend better the beginning of caboclo history, for it seems to be at this time that the caboclos emerge as a people separate from whatever indigenous roots they had, and the Ka'apor and other indigenous groups—continuing to be indigenous – on the one hand and the Lower Amazonian peasantry on the other then diverge and go their separate ways in historical time down to the present day.

At one time, however, the Ka'apor as a people apparently enjoyed relatively peaceful though probably subordinate relations with representatives of the Iberian metropole, especially Jesuit missionaries with whom they would have been in daily, face-to-face contact at least until the expulsion of the Jesuits from Brazil in 1759 (Azevedo, 1930, pp. 375, cited in Balée, 1988, pp. 157). This is the period that in my view should be understood as being immediately at the eve of the formation of the Amazonian peasantry (see Nugent, this volume, who prefers 'historical peasantry' to the use of the term 'caboclo' for the purpose of describing the extant, native-born, Portuguese-speaking people of Amazonia). This time of hypothesized contact between precursors of Ka'apor society and colonial Luso-Brazilian society constitutes the period shortly before the influx of African slaves into the Lower Amazon (see Chapter 3 by Guzmán, this volume), who came to replace waning indigenous labor and populations. And this contact period occurs just before the coining of the neologism 'caboclo,' which would be used in the following years to refer to the Amazonian masses as distinct from individually

named indigenous groups of Amazonia. This time frame is not coincidentally contemporary with the expulsion of the Jesuits and the demise of the Jesuit mission system in the Lower Amazon (and elsewhere) in 1759.

On the basis of ethnohistory, oral history, and linguistic data relating to toponyms, Ka'apor society originated at least four hundred kilometers to the west of their present habitat probably before 1800 in the basin of the Tocantins River (Balée, 1994, pp. 30–32) (see Fig. 2.1). Before 1759, the Ka'apor probably

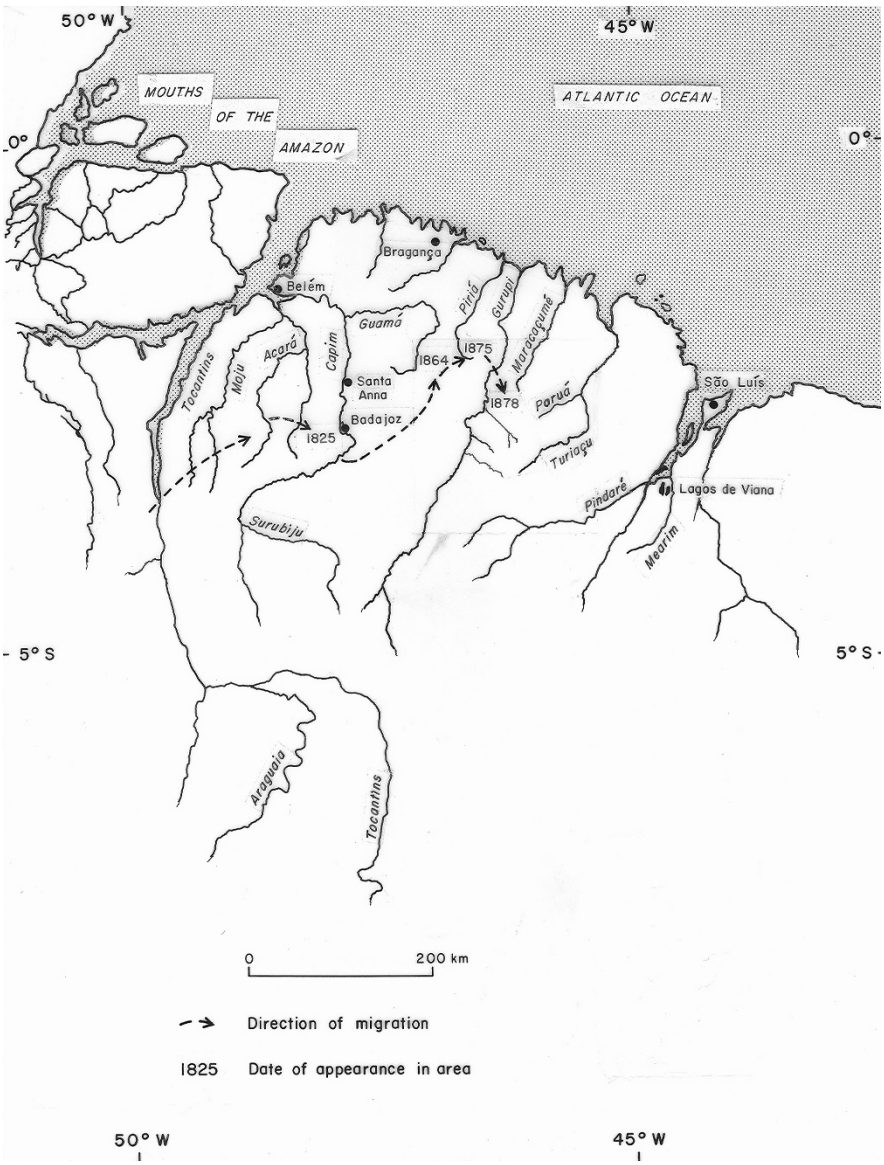

Fig. 2.1 Map of Lower Amazon and the long-term migratory movements of the Ka'apor

lived even farther west, nearer to the Xingu. This is because of a historical connection that seems to have existed between the Wayãpi and the Ka'apor. The Ka'apor and Wayãpi share some esoteric details of a girl's puberty rite that are most likely not due to chance (Balée, 2000, p. 412). The details center on the ant ordeal, which in both societies' cultural practices involves the application of venomous stings on the initiate's skin from the same species of ant (*Pachycondyla commutata*). That ant is called by apparently cognate terms in the two languages (Ka'apor *tapiña' ĩ* and Wayãpi *tapia'i*). This ant ordeal at girl's initiation has not been described for any other pair of Tupí-Guaraní societies, which indicates evidence of shared innovation between Ka'apor and Wayãpi ancestral sociocultural and ritual systems. The ant ordeal, therefore, suggests a historical connection between the two peoples in the comparatively recent past, a connection that further supports their linguistically close pairing in subgroup #8.

Today the Wayãpi and Kaapor live about nine hundred kilometers apart with the estuary of the Amazon River in between them (see Fig. 2.2). But in the early 1700s, the precursors of the Wayãpi lived in the Lower Xingu River basin

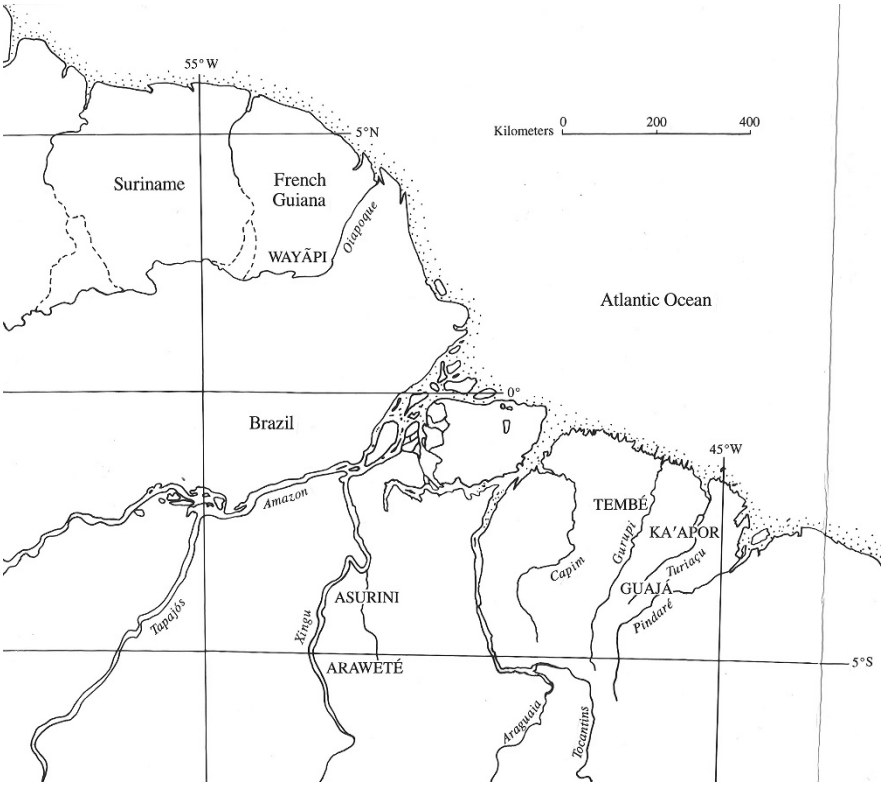

Fig. 2.2 Map of the Lower Amazon showing the location of some Tupi-Guarani people mentioned in the text

and some of them became settled one of three Jesuit missions at that time (Grenand, 1982, p. 20, cited in Corrêa da Silva, 1997, pp. 84–85; Fisher, 2000, p. 46). Evidence from Ka'apor mythology and concepts of species, such as the Brazil nut tree, which are not present in their habitat today, indicates a westerly origin at least as far west as the Rio Tocantins, called *ɨ-takaš ĩ* (i.e. >Smoke River') in Ka'apor (Balée, 1994, p. 25). But because of their close linkages to Wayãpi, both from the perspectives of ritual and language, antecedents of the Ka'apor can be logically placed even farther west than the Tocantins, indeed closer to the Xingu but probably still east of that river, in the early eighteenth century.

The impact of LGA on Ka'apor language and Luso-Brazilian, Jesuit influences on Ka'apor culture, seem to be related to what at one time was the principal commodity extracted by the Iberian metropole from Amazonia: cacao. The word for cacao and the origins, uses, and management of cacao by native peoples in Amazonia in prehistoric times represent an inimitable array of historical-ecological phenomena that allow us to understand Amazonian history within a capsule of a single species and its ultimate effect on the landscape. In this sense, a change in the material and economic landscape—namely, what would become the paramount importance of cacao as a commodity in the export market of the drogas do sertão and the acquisition of native labor to gather it—may have affected the Ka'apor language in the domain of plant nomenclature.

Origins of the Word for 'Cacao' in Various Languages

Where did the word for cacao come from? Mesoamericanist J. Eric S. Thompson indicated that the origins of the words cacao and chocolate are not easily found. There has been a considerable amount of speculation on the subject, but it is to be doubted that any conclusions satisfactory to everyone will ever be reached (1956:107). Written before an explosion of historical-linguistic and epigraphic research in Mesoamerica, Thompson was perhaps too pessimistic, though it must be granted that all linguistic reconstruction as with much of archaeological interpretation must remain speculative, however informed and enlightening.

At least one way of approaching Thompson's problem would be to seek the word where the plant itself originated. This exercise involves consideration of cultural factors, since the cacao of commerce (*Theobroma cacao* L.) is a domesticate.

Two subspecies of cacao are recognized (Cuatrecasas, 1964, pp. 512–513), and the principal subspecies of modern commerce, *T. cacao* ssp. *cacao* (with four formae), was the only domesticated one found in Mexico and Central America at the time of the Hispanic Conquest. Two commercial types are known: *criollo* (*T. cacao* ssp. *cacao*) and *forastero* (which may include other subspecies, all from South America). *Criollo* has 'elongated, ridged, pointed

fruits and white cotyledons' while *forastero* has 'short, roundish, almost smooth fruit and purplish cotyledons' (Cuatrecasas, 1964, p. 506; also see Schultes, 1984; Coe & Coe, 1996, p. 27). The *criollo* variety of Mexico and Central America does not grow spontaneously; in contrast, other *forastero* subspecies can be found growing spontaneously in various parts of the Amazon Basin (Huber, 1904 cited in Cuatrecasas, 1964, p. 401; Cavalcante, 1988, p. 63) and the Guianas (Cuatrecasas, 1964, p. 494, map). Indeed, two morphological variants are noted, an Upper Amazon Forastero and a Lower Amazon Forastero (Motamayor, Risterucci, Laurent, Moreno, & Lanaud, 2000). Today *forastero* subspecies and varieties derived from *T. cacao* ssp. *sphaerocarpum* have become the most important in commerce (Gómez-Pompa, Flores, & Fernández, 1990, p. 249), accounting for about eighty percent of world production (Coe & Coe, 1996, pp. 28, 201–202). The pre-contact distribution of many spontaneous varieties in South America and only one, fully domesticated variety in Mesoamerica bespoke the possibility that cacao originated in headwaters of the Amazon, crossed the Andes into northern Colombia, and ultimately made its way to Central America and lands farther north (Cheesman, 1944 cited in Cuatrecasas, 1964, p. 507).

The age-area (or 'least-moves') hypothesis is clearly strengthened by the fact that all twenty-two known *Theobroma* species were originally found in the Amazon Basin and adjoining Guianas and only three (*T. cacao, T. angustifolium,* and *T. bicolor*) have ever grown outside that region. Cuatrecasas (1964, p. 507) confidently asserted, nevertheless, that the first prehistoric cultivation and selection of cacao occurred in Mexico and Central America and subsequent writers have tended to support that claim (e.g. Stone, 1984, p. 69). Gómez-Pompa et al. (1990) presented recent evidence for a possible ancestral form to domesticated cacao, which was noted to be growing in a sinkhole in northern Yucatán. This variety is the rare *T. cacao* L. ssp. *cacao* forma *lacandonica* Cuatrecasas, which was previously only known from the Lacandon Maya area of Chiapas, Mexico (Coe & Coe, 1996, pp. 26–27). Linguistic evidence to date also seems to support an original domestication of cacao in Mesoamerica though the precise language of origin is a matter of dispute.

One account argued for a source of Mayan **kakaw* in Mixe-Zoquean (Justeson, Norman, Campbell, & Kaufman, 1985, p. 59), a putative source of borrowings in Mayan and other Mesoamerican language groups (Campbell and Kaufman, 1976, p. 84). According to this view, many Mixe-Zoquean agricultural terms were borrowed by Mayan and other Mesoamerican language groups, reflecting perhaps the prestige of the proposed first agricultural civilization of the region, the Olmecs. The Olmec civilization might have been associated with speakers of Mixe-Zoquean (Campbell and Kaufman, 1976, p. 84), though this inference too is debatable (Wichmann, 1999). More recently, an argument has been made that cacao is actually a term coined by speakers of Nahuatl, perhaps the people whose capital city was Teotihuacan (Dakin & Wichmann, 2000).

Regardless of which Mesoamerican linguistic group is eventually determined to be the source of the term 'cacao' (i.e., Uto-Aztecan, Mayan, or Mixe-Zoquean),

the use of cacao in Classic Maya culture (ca. 200 B.C.–A.D. 600) is now well established. Biochemical evidence for theobromine, one of cacao's characteristic alkaloids, has now been determined to exist on remains of spouted vessels (called 'chocolate pots') in northern Belize that date from 600 B.C. to A.D. 250, i.e., from the time of the Preclassic Maya culture to the beginnings of Classic Maya culture (Hurst, 2001; Powis, Valdez, Hester, Hurst, & Tarka, 2002). By Classic times, cacao is evidently a local crop grown widely in Mesoamerica, including in peripheral areas such as the medium-sized village site of Cerén in El Salvador (Lentz & Ramírez-Sosa, 2002). In other words, it was not evidently a crop only of the elite, but of the common people living on the periphery of urban civilization as well.

After the Spanish conquest of Mesoamerica, with the debut of chocolate in the European marketplace and the rapid conditioning of the Western palate by it, the term cacao became widely diffused to numerous languages worldwide. In Hanunóo of Mindoro Island, Philippines, two of the three words for folk species of cacao exhibit the morpheme *kakaw* (Conklin, 1954, p. 418), no doubt borrowings from Spanish. In the Quichua language of Amazonian Ecuador, all compound names for two species of *Theobroma* (*T. cacao* and *T. subincanum*) incorporate the term *cacao* (Kohn, 2002, p. 432). Many other Amazonian and Lowland South American groups borrowed a term for 'cacao' that entered the continent through Spanish or Portuguese. What is of most interest is why would they, and in particular the Ka'apor, borrow a term for a plant that they already had?

According to the historical-linguistic principle of prestige, whereby in a contact situation goods and services associated with the dominant society that were not previously present in the subordinate society tend to be borrowed by the subordinate society (see Campbell, 1999, pp. 59–60), the word for cacao would not have been borrowed by Ka'apor since it already occurred in their environment, unless cacao had acquired some prestige and economic valorization far above and beyond what it held in native Amazonia. Ethnobotanist Richard Evans Schultes (1984, p. 33) observed that it was difficult to explain why Amazonian Indians would have been motivated to disperse a tree the use of which lay solely in a sweet pulp on which one might suck (also see Coe & Coe, 1996, p. 26 for a similar view). Cacao cultivation in Mesoamerica is probably as old if not older than the Tupí-Guaraní branch of the Tupí family, dating back at least to the beginning of the Common Era and probably much earlier (cf. Alden, 1976, p. 104; see Young, 1994, p. 17), even if the word for cacao may be more recent than its original cultivation (Dakin & Wichmann, 2000). Plant geneticist Charles Clement (1999, p. 201) pointed out that *T. cacao* and its close relative *T. bicolor* (which may grow spontaneously in the Maya lowlands unlike *T. cacao*, though it is of lesser quality and desirability (Thompson, 1956, p. 107) were probably semi-domesticated crops grown as stimulants in the Upper Amazon during late prehistoric times. But the use of cacao beans as stimulants is seldom found outside the Upper Amazon. The Kofán of the Ecuadorian Amazon toast and eat the beans of *T. bicolor* (which they term *mak'av* i-) [Pinkley, 1973, p. 69]

as do the Lowland Quichua of Ecuador (Eduardo Kohn, 2001, personal communication). The practice of toasting these beans before consuming them seems fairly widespread in the Upper Amazon, despite the avowedly low quality of the beans and fruit when compared to other species of *Theobroma* (Cavalcante, 1988, p. 66). In any case, no prehistoric Amazonian groups are known to have made chocolate (Schultes, 1984, p. 33; Stone, 1984, p. 69; Gómez-Pompa et al., 1990, p. 249).

Rather, almost everywhere outside the Upper Amazon, native Amazonians have eaten only the sweet, white pulp around the beans and then discarded the beans; in some cases, the pulp around the beans has been made into a non-fermented wine (Coe & Coe, 1996, p. 26). Given the low aboriginal prestige of cacao in the Amazon region, the directionality of borrowing of the term is probably not, basically, Amazonia→Mesoamerica, but rather, the reverse seems much more probable now. It is unlikely that Mixe-Zoquean speakers, who may have been already associated with complex, intensive agricultural society, would have borrowed an Amazonian term for a semi-domesticated (or perhaps even wild) crop that had not yet developed uses as chocolate. And the possibility remains that the development of chocolate production in Mesoamerica began with *criollo* trees that had arisen from spontaneous mutations and subsequent genetic drift along the isthmus of Panama, not far from the northernmost edge of the presumed, original distribution of cacao (Purseglove, 1969, cited in Young, 1994, p. 14–15). It is possible therefore that cacao was not dispersed into Mesoamerica by humans and was part of the original distribution of wild forms of cacao, such as the forma *lacandonica* (Gómez-Pompa et al., 1990, p. 249), but this remains controversial (Stone, 1984; Young, 1994, p. 14).

The first European observation of cacao occurred in 1502 along the northern coast of Honduras, on Columbus' fourth voyage (Alden, 1976, p. 104). Rapidly, the chocolate drink made from it became highly esteemed in Europe (Alden, 1976, p. 109), and it became well known to explorers as a valuable export crop. Cacao plantations begin in Ecuador and Venezuela by the late 1500s and early 1600s. The crop therefore may have been recognizable to Spaniard Cristoval de Acuña, who noted in 1641 that in some places groves of cacao trees along the Amazon River were so thick that the wood could serve to lodge an entire army (1963:76). Cacao exports from the Amazon were reported by 1678–1681, and these beans were being collected from spontaneously occurring trees, not plantation trees (Alden, 1976, pp. 114–115). By about 1725, a cacao boom started in the Amazon, and cacao becomes the dominant export staple of the region (Alden, 1976, p. 118; cf. Hemming, 1987, p. 43). By the mid-1700s, different regions of Brazil exported distinctive commodities to Lisbon. 'The Rio fleet shipped gold, hides and silver; Pernambuco sent wood and sugar; and the fleets of the north [i.e., lower Amazon], of Grão Pará and Maranhão carried cacao . . .' (Maxwell, 1973, p. 5). The cacao export sector of the eighteenth century Luso-Brazilian economy was perhaps minor compared to gold in Minas Gerais and Rio de Janeiro and later coffee in São Paulo (Baer, 1995, pp. 15–19), but it

seems in many ways to be the precursor of the rubber export economy of the nineteenth century as concerns the Amazon region.

The cacao export sector of the colonial Amazonian economy fell under the control of Jesuit missionaries, who induced Indians under their tutelage to collect cacao in the interior from spontaneous trees, whereas significantly less cacao came from plantations (Alden, 1976, pp. 121–122; Hemming, 1987, p. 43; Coe & Coe, 1996, pp. 194–195). These spontaneous trees were most likely from *Theobroma cacao* and not from nondomesticated species of *Theobroma*. Although *Theobroma speciosum* Willd., a nondomesticated and very widespread cacao species known regionally as *cacauí* (little cacao) produces edible pulp and seeds from which chocolate can and has been made, its fruiting season is only between February and April, hardly enough time to qualify as a major export crop. Amazonian *Theobroma cacao*, in contrast, can be found for sale in all months except September to December at the market in Belém (Cavalcante, 1988, p. 64).

Remarkably, as a percentage of the total exports from the Lower Amazon during 1730–1755, cacao alone ranges between 43.5 and 96.6%, with the highest proportion of total exports from that region occurring in the years 1730–1745 (Alden, 1976, p. 118). The cacao trade begins to decline in the 1740s and 1750s, and this coincides with native population declines due to smallpox and measles epidemics widely reported during the period 1743–1750 (Balée, 1984, pp. 34–35; Hemming, 1987, p. 43; Moreira Neto, 1988, pp. 23–24). African slavery revived the trade after the 1750s, such that what is now the Brazilian state of Pará was exporting 715–850 tons of cacao per year, which constituted about ninety percent of the total from Brazil (Hemming, 1987, p. 43). Even after the expulsion of the Jesuits from the Portuguese Empire in 1759–1760, most of the export from the Amazon still came from collecting expeditions rather than from cultivated trees (Alden, 1976, pp. 123–124), and cacao would not become a dominant export crop from the Brazilian state of Bahia until the late nineteenth century (Baer, 1995, p. 19).

The impact in Amazonia of a cacao export economy combined with Jesuit control seems to have affected native languages. Indeed, the significance of the cacao export sector in the Lower Amazon cannot be overestimated in terms of its effects on local indigenous societies and their languages that were involved in it. In 1743, cacao is clearly the most important of all the drogas do sertão (the various forest and garden products from Amazonia that were shipped to Europe for a variety of purposes: food, spice, medicine, oil, hides, skins, timber, waxes, gums, and so on—see Cleary, 2001, pp. 83–84) for at that time cacao beans were observed to be circulating as money among the Amazonian peasantry (not dissimilar to the way cacao beans had served a monetary purpose in Aztec markets) and cacao beans owned were figured into calculations of an individual's wealth (Bruno, 1966, p. 59). In the colonial era, cacao had assumed an importance it had not been before known in aboriginal Amazonia.

Cacao was a central commodity in the 'Jesuit century' as David Block (1994, p. 98) has so aptly described the eighteenth century in eastern Bolivia, which can

apply with slight modifications also to Amazonian Brazil, coastal Brazil, and the mission zones of Paraguay and Argentina. The Jesuits introduced cacao into the Mojos Plains of eastern Bolivia (also known as the Beni), where it had not even existed in the wild before, as an export crop (Block, 1994, p. 98). Cacao was probably not typically planted in pre-Columbian Amazonia, but the Jesuits, using native labor, cultivated it successfully in the vicinity of their Amazon missions (Aubertin, 1996, p. 32; Bruno, 1966, p. 61). Indeed, had it not been for the Jesuits, the ability of Amazonia to meet European demand for chocolate would not have been met (Aubertin, 1996, p. 33). The drogas do sertão—a bona fide term for what today one might call TFPs (tropical forest products—see Cleary, 2001, p. 83–86)—constitute a very long list of wild and cultivated plant and animal materials, but in terms of economic impact both in the Amazon and in the European marketplace, cacao was at the top of this list (Di Paolo, 1985, p. 76).

The Jesuits used LGA, a creole language partially derived from Tupinambá, in their missions. Many LGA vocabulary items are borrowed from Portuguese. In cases of language contact, vocabulary items for native plants, animals, and landscape features are most often borrowed by the dominant or prestige language and vocabulary items related to politics, religion, and finance are most often borrowed by the subordinate or nonprestige language, based on contrasting principles of prestige (i.e., luxury loans) or need (Campbell, 1999, pp. 59–60). Cacao is a native Amazonian plant, so by the principle of need, it is reasonable to argue that the term came originally from some Amazonian language. Cacao is a Portuguese word borrowed from Spanish *cacao* that was in turn borrowed from a Mesoamerican language, where the plant first attained preeminence in terms of world commerce. Controversial evidence suggests that cacao can be reconstructed in Proto-Mixe-Zoquean, which dates from about 3,500 B.P. (Campbell, 1999, p. 349; also see Campbell and Kaufman, 1976; Justeson et al., 1985) and was plausibly associated with the ancient Olmec civilization of the isthmus of Tehuantepec, as **kakawa* (Campbell and Kaufman, 1976, p. 84) The possibility remains that Proto-Mixe-Zoquean borrowed the term from an Amazonian language on the basis of need, if the crop indeed originated there (though perhaps not as a fully domesticated crop) as biogeographic evidence suggests. But the prestige principle and the known time frame militate against that hypothesis.

Cacao Words and Tupí-Guaraní Languages

In several Tupí-Guaraní languages of Amazonia, *Theobroma cacao* L. ssp. *sphaerocarpum* is referred to by words that seem cognate by inspection (Table 2.1), the exceptions being Ka'apor (because of an initial *k*—see below), Parintintin, and Wayãpi. What is puzzling is that the other, seemingly cognate words, resemble the word *cacao* in their phonetic shape. At least some of these languages might be

Table 2.1 Words for cacao (Theobroma cacao L.) in several Tupi-Guaraní languages

Language	Subgroup #	Term[1]	Gloss[2]	Source
Araweté	5	*aka-'i*	L-tree	Balée, field notes, 1985
Assurini do Xingu	5	*aka-'ɨ-wa*	L-tree	Balée, field notes, 1986
Guajá	8	*ako'o-'ɨ-*	L-tree	Balée, field notes, 1989
Ka'apor	8	*kaka*	L	Balée, field notes, 1985
Tembé	4	*aka-'ɨ-w-ete*	L-stem-true	Balée, field notes, 1986 (Cf. Boudin, 1978)
LGA	3	*kakáu*[3]	L	Stradelli 1929
Parintintin	6	*ñumi-*	L	Betts 1981
Wayãpi	8	*walapulu*	L	Grenand, 1989

[1]Hyphens indicate morpheme boundaries.
[2]The L refers to a literal, monomorphemic, essentially nonpolysemous plant term (see Balée & Moore 1991). English plant morphemes that heuristically meet this criterion would be "oak," "maple," "pine."
[3]This term refers to the fruit of the cacao tree only.

presumed to have had little if any influence from LGA, especially Guajá (a language of hunter-gatherers who have only been in contact since the 1970s) and Araweté (a language of trekkers only in contact also since the 1970s). But both these languages have a word for comrade (Guajá *kamarar*; Araweté *kamara* – Balée, field notes), borrowed evidently from medieval Portuguese *camarada*; corresponding borrowed terms are also known from Ka'apor (*kamarar*) and LGA (*kamarára*) [Corrêa da Silva, 1997:89], though the range of meaning among them is somewhat divergent, since at least in Guajá *kamarar* refers to the Ka'apor people, whereas in the other languages mentioned the cognate term refers to non Indians, or is even, in the case of Araweté, a personal name for a man.

These five languages are in three different subgroups (nos. 4, 5, and 8) of the eight recognized subgroups of the Tupí-Guaraní branch of the Tupí family (Jensen, 1999; Rodrigues and Cabral, 2002). The phonological structure of the terms apart from the word in Ka'apor in Table 2.1 does not suggest borrowing among the different languages. It is possible that Ka'apor has conserved an initial *k in the word for cacao and that the initial consonant was deleted in Araweté, Assurini do Xingu, Guajá, and Tembé. The proto-term may have been *kaka, and this would be far older than the cacao export economy of lower Amazonia in the 1700s. But this hypothesis seems unlikely. The principle of prestige would tend to preclude a nonprestige language from borrowing a term for a native plant that was not of commercial or agricultural importance. The nondomesticated, widely occurring cacao species, *Theobroma speciosum* Willd., is either designated by the same term (as in Assurini do Xingu and Guajá) or it is linguistically marked as though it is perceived as being a close relative of domesticated cacao (from the point of view of nomenclature, not classification per se) (see Table 2.2).

Table 2.2 Words for non-domesticated cacao (Theobroma Speciosum willd.) in several Tupi-Guaraní languages

Language	Subgroup #	Term[1]	Gloss[2]	Source
Araweté	5	*aka-á-wi'i*	L-fruit-thin-stem	Balée, field notes, 1985
Assurini do Xingu	5	*aka-'ɨ-wa*	L-stem	Balée, field notes, 1986
Aurê and Aurá[3]	8	*aka-ú*	L-large(?)	Balée, field notes, 1987
Guajá	8	*ako'o-'ɨ-*	L-stem	Balée, field notes, 1989
Ka'apor	8	*kaka-ran-'ɨ-*	L-false-stem	Balée, field notes, 1985
Tembé	4	*aka'u-'ɨ-w*	L-stem	Balée, field notes, 1986, (Cf. Boudin 1978)
Wayãpi	8	*aka-'ɨ-w*	L-stem	Grenand, 1989
Proposed Reconstruction	–	**ako'o-'ɨ-β*	L-stem	–

[1]See footnote 1, Table 2.1.
[2]See foonote 2, Table 2.1.
[3]Aurê and Aurá, the only known speakers of a newly recorded Tupí-Guaraní language originally spoken between the Xingu and Tocantins Rivers (Jensen, 1999:128; Mello, 1996).

In other words, in keeping with the prestige principle, one would not anticipate borrowing of terms for nondomesticated, seemingly unimportant plants (though nondomesticated cacao, especially *Theobroma speciosum* Willd., like its domesticated congener, does have a sweet, edible pulp, and people gather it for that purpose). But that evidently happened in Ka'apor. The Ka'apor words for *Protium* trees (Burseraceae), *Lacmellea* trees (Apocynaceae), and *Mabea* trees (Euphorbiaceae), all of which are found in high forest and are never cultivated per se, seem to have been borrowed also from LGA (Balée, 1994). It is plausible that products from these trees were part of the drogas do sertão transoceanic trade; *Protium* trees, for example, exude a resin that is highly prized as boat caulking, and caulks were one of the Amazonian drogas do sertão.

Wayãpi, which like Ka'apor is from subgroup #8, denotes domesticated cacao as *walapulu*, clearly a borrowing from one of several Carib languages in the Guianas (Grenand, 1989). Yet the Wayãpi term for nondomesticated cacao, *T. speciosum*, is *aka-'ɨ-*, an apparent cognate with the terms, aside from the Ka'apor term, in Table 2.2. Françoise Grenand (1989:121) gives the etymology as *aka* < *ãkã* >head' and suggests also a comparison with LGA *kakao-'i* >little cacao.' Her etymology of >head' seems problematic, however, since as in Wayãpi, the vowels are also not nasalized in the cognate terms in the five other Tupí-Guaraní languages in Tables 2.1 and 2.2. It seems unlikely that nasalization for this wild cacao word would have been dropped in all of them just as deletion of initial *k* in the cacao word in three different subgroups of Tupí-Guaraní also seems unlikely. Initial consonant loss is,

moreover, less common than initial vowel loss (Campbell, 1999, pp. 32–33). On the basis of this mounting evidence, one can logically argue that (a) the original term in Wayãpi for nondomesticated cacao is a sequence of a literal morpheme (*aka*) and a term meaning 'stem' or 'tree' (*ɨ-*); (b) the Ka'apor terms for cacao and nondomesticated cacao are most likely to have been borrowed; and (c) the donor language for the cacao terms in Ka'apor was LGA.

The LGA term for cacao fruit is *kakáu* (Stradelli, 1929). In LGA, dipthongs may occur in word final position. The combination of two vowels in principle represents two syllables (Taylor, 1985, pp. 11–12). But in LGA one does not canonically find the following

$$\underline{\mathbf{V}}\,[+\mathbf{high}, +\mathbf{back}, +\mathbf{vocalic}]\#$$

This combination of phonemes is otherwise common in Portuguese, as in */páu/* >wood, tree' and */kakáu/* >cacao.' It can be therefore proposed that the directionality of borrowing was LGA→Ka'apor, and not the reverse. Ka'apor retained the initial *k* when it borrowed the term, and phonological substitution (in this case, by deletion of final vowel or apocope – Campbell, 1999, pp. 32, 61) accounts for the absence of the unstressed final, high back vowel in Ka'apor *kaka*. Ka'apor also extended the root lexeme's semantic range to nondomesticated cacao, analogous to the extension noted by Grenand above (1989, p. 121) for LGA. The reason why the term for nondomesticated cacao persisted in Wayãpi is that perhaps Wayãpi was less affected by missionization influences than Ka'apor and because nondomesticated cacao was not an item of prestige, whereas domesticated cacao was a prestigious commodity thanks to Jesuit and Luso-Brazilian valorization and cultivation of it. It is striking nevertheless that the Wayãpi have a Carib loanword for domesticated cacao; it is possible from this evidence, and from the other evidence related to a strong ethnic and linguistic connection between the Ka'apor and Wayãpi, to speculate that Wayãpi once had a term like *kaka* in Ka'apor and exchanged this for walapulu at a later date, after they crossed the Amazon River from the south, but to date had not yet gone so far as to replace the term for nondomesticated cacao (and remodel it by analogy on walapulu or some other borrowed term for cacao).

This argument leaves open whether the other Tupí-Guaraní languages in the sample also borrowed the word for cacao from LGA. Although deletion of all initial *k*'s seems unlikely, the Parintintin language represents a peculiar departure from the other languages in the sample. Parintintin is from subgroup #6 of Tupí-Guaraní; it is spoken in southwestern Amazonia, close in fact to where Proto-Tupí-Guaraní is believed (using the least-moves hypothesis) to have originated, and it evidently has had little or no LGA influence, for it seems to have been beyond the distribution of the Jesuit missions. Parintintin has the focal generic name *ñumi-* for cacao and many of its relatives (Betts, 1981; Waud

Kracke, personal communication, 2001).[2] Parintintin is also located in the richest area of the genus *Theobroma* in the Amazon basin. At this point, the lexeme *aka* (Araweté, Assurini do Xingu, Tembé, and Wayãpi) or *ako'o* (Guajá, which is arguably closest to the proto-language for this term) may resemble LGA *kakáu* only by coincidence or by borrowing. It is nevertheless intriguing that whereas Ka'apor arguably borrowed *kaka* and extended it to cover non-domesticated cacao species, as discussed above Wayãpi also borrowed walapulu (from a Carib language) for cacao but retained *aka* for the nondomesticated cacao species. If *aka* is closer to the original Proto-Tupí-Guaraní word for cacao than *kaka*, then cacao was most likely not borrowed by Mesoamerican languages from Tupí-Guaraní languages even if *aka* has cognates in Tupian language branches other than Tupí-Guaraní. That is because word-initial epenthesis of a consonant is not likely (Campbell, 1999, p. 33). The only published data now available on another branch of Tupí is from Munduruku, of the Munduruku branch, and the word for cacao appears to be a borrowing, also from LGA, being *kakau* (Strömer, 1932, p. 62; but Crofts and Sheffler (1981, p. 18) indicate *karoba* as the Munduruku term for cacau).

Discussion

In the Ka'apor habitat of today, there are four species of *Theobroma* other than *T. cacao* and *T. speciosum*. These are *T. grandiflorum* (Willd. Ex Spreng.) Schum. called in Ka'apor *k ɨ-p ɨ- hu' ɨ-* and *T. subincanum* Mart. called *k ɨ-p ɨ-'a' ɨ-* for which there is also a synonym,

nuk ɨ-p ɨ- ' ɨ- (Balée, 1994, p. 307). These terms do not appear to be related to the Ka'apor terms for *T. cacao* and *T. speciosum* and they are in a different folk genus. Indeed, the fruit of *k ɨ-p ɨ- hu' ɨ-* , which is widely known in the Amazon region as cupuaçu, is apparently much more esteemed (by the significantly more time that is given to its gathering) by the Ka'apor than are its congeners, cacao and nondomesticated cacao. There is no reason to suppose that this differential appreciation was different in precontact times. The fruit of cupuaçu is eaten as is the fruit of cacao: it is the sweet pulp around the beans in the pod that one eats, but in the case of cupuaçu, this somewhat tart pulp is much more copious. Cupuaçu terms exhibit a tendency to cognate forms also: Guajá *k ɨ-p ɨ-' ɨ-* , Tembé *kupi'a' ɨ- w*, Wayãpi *kap ɨ-ai* (Balée, 1994, p. 307; Grenand, 1989, p. 112) for which one could logically propose the tentative reconstruction of * *k ɨ-p ɨ-'a' ɨ-* β in Proto-Tupí-Guaraní.

[2] The closely related Uru-eu-wau-wau language (also called Yupaú or Tupi-KawahibBJames Welch, personal communication, 2002; Rodrigues & Cabral, 2002), which is also in subgroup #6, denotes a nondomesticated cacao of the forest of central Rondônia (in the southwestern Amazon region of Brazil) as *n ɨ-m ɨ-ta-h ɨ-ma* or *ɨ-m ɨ-ta-h ɨ-ma* (Balée, field notes, 1992). These terms can arguably be glossed as 'smooth cacao.' The initial syllables in these terms (the differences between which may be due to free variation), therefore, are quite similar to Parintintin *ñumi-*.

(Incidentally, Parintintin is once again the odd man out, with *ñumitah* ɨ-*m*, in reference to the cupuaçu fruit only—Betts, 1981, p. 268. But given the underdifferentiation of the large variety of *Theobroma* species in the Parintintin language, it is unlikely if this term is a reflex term). These terms for cupuaçu in Guajá, Ka'apor, Tembé, and Wayãpi have remained phonologically similar because cupuaçu did not become a major export crop, as did cacao. A change in the economic landscape, in which a less-than-salient species, cacao, suddenly surged up incredibly in value and in terms of a monetary valorization system not before known in Amazonia, had the effect of influencing the language(s) most involved in its collection and exportation. Hence, whatever the original word Ka'apor had for *T. cacao* (it may have resembled, for example, *aka'* ɨ or a name containing this form), that term was replaced by a new, borrowed term from LGA, the contact language. In addition, whatever the original Ka'apor term was for wild cacao (*T. speciosum*), and this would have been very close if not identical to *aka'* ɨ (from Proto-Tupí-Guaraní **aka'iβ*—see Table 2.2), that term too was replaced, when the plant was modeled by analogy on *T. cacao*. In other words, Ka'apor *kakaran*' ɨ- , in a broad sense, can be glossed as 'that tree which resembles cacao.' It is possible, indeed, that before the mercantile valorization of cacao and before Ka'apor contact with colonial Luso-Brazilian society, *T. speciosum* was more psychologically salient than *T. cacao*. That is because *T. speciosum* is much more ecologically important and common in old fallow forests (where the Ka'apor once had lived in settled villages between forty and one hundred or more years ago but have since seen a return of forest cover) (Balée, 1994, p. 37). Indeed, *T. cacao* is only occasionally planted in dooryard gardens by the Ka'apor and it is not seen in the high forest or in fallow forests, which is to be expected of a domesticated species. Cacao is relatively uncommon compared to wild cacao and probably this was the case aboriginally in the Xingu and Tocantins basins also.

If *T. speciosum* were more psychologically salient than *T. cacao* before contact, it may be the case that the term for cacao was the marked form in Ka'apor, and wild cacao was unmarked linguistically. In other words, the impact of contact together with landscape modification by the Jesuit mission system, the reordering and transforming of native labor and work priorities, and the sudden high value of *T. cacao* within an imposed, alien system of exchange and valorization, could have not only caused the substitution of the LGA term for the native name of cacao in Ka'apor, that impact may also have brought about a marking reversal with regard to the Ka'apor term for *T. speciosum*. Although this assertion cannot be proven at the present moment, it is clearly a plausible scenario within the context of an historically intricate and significant contact situation.

Conclusions

In summary, it can be hypothesized that in the Ka'apor language, as in some other Amazonian languages such as Quichua, the cacao words (for *Theobroma cacao* and *Theobroma speciosum*) were borrowed, and that this

borrowing occurred probably because cacao, as a major export crop, had a profound impact on Indian labor of the Lower Amazon region in the eighteenth century and because that labor was to some extent controlled by Jesuit mission authorities in which LGA (Língua Geral Amazônica) was the contact language. Tupí-Guaraní languages can be ruled out as sources for the Ka'apor word for 'cacao' as well as for the English, Spanish, and Portuguese words for 'cacao'. The evidence here presented of borrowing of the cacao term by Ka'apor further refines comprehension of the Ka'apor past and their relations to other living groups. The evidence suggests that Ka'apor culture and language were influenced by the cacao export economy on the eve of the recognition of a new Amazonian ethnic designation, that of 'caboclo.' The emergence of caboclo culture—together with its entry into the modern world of the eighteenth century as a conceptual, real, named entity—represents the next stage of Amazonian history, after the Ka'apor peaceful experience with Luso-Brazilian society comes to a close, and the antecedents of Ka'apor society extricate themselves from the drogas do sertão trade and the cacao export economy, eventually to become an independent, indigenous society that until 1928 was decidedly hostile to encroachment of the state. Although the Ka'apor were therefore never incorporated into the Amazon peasantry per se, for the origin of caboclos as a distinctive sociocultural system postdates Ka'apor divergence from Luso-Brazilian society, this borrowing by Ka'apor of the term for cacao helps situate the antecedents of the Ka'apor historically in a setting, such as a Jesuit mission, where LGA was the contact language.

The Ka'apor borrowing of the term for cacao is most likely to have occurred farther west than the Tocantins, where the Wayãpi were also located in a Jesuit mission, along the Xingu River. This further strengthens the hypothesized close pairing of Wayãpi and Ka'apor within subgroup #8 of Tupí-Guaraní. Finally, the impact of the cacao export economy shows that a native species in the environment, even a relatively unimportant one, can be renamed in local languages when its historical-ecological setting in the world economy is completely transformed, and when the people speaking those local languages are involved in the labor and technology of that transformation, as was the case with Amazonian cacao. Comprehending the history and uses of cacao and, no doubt, of other highly commercialized species of the past can be most useful for understanding the historical-ecological impact that the expansion of Luso-Brazilian society had on native Amazonian languages and associated ethnobiological vocabularies.

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