# Chapter 11
# Linguistic, Cultural, and Environmental Aspects of Ethnoprimatological Knowledge Among the Lokono, Kari'na, and Warao of the Moruca River (Guyana)


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## 11.1 Introduction

South American indigenous people possess extensive knowledge of the environment they inhabit (e.g., Voss and Fleck 2011, Posey 2002). This knowledge translates into a plethora of practices, involving subsistence, medicine, arts, crafts, and landscape management, which speak to the deep understanding of the local biotic and abiotic resources (Anderson et al. 2011). The ethnobiological vocabularies of indigenous languages, a reserve of the speakers' environmental knowledge, astound in turn with the number of terms and the diversity of principles according to which they are organized (e.g., Fleck and Harder 2000; Berlin 1992; Hunn 1982, 1976). Even more confounding is the mosaic of linguistic systems that crystalized in South America, fragments of which Amazonian scientists try to piece together (e.g., Eriksen 2011; Hornborg and Hill 2011).

The Moruca River in northwestern Guyana is one piece of this puzzle. The area, inhabited by linguistically unrelated peoples, the Lokono, Kari'na, and Warao, is an ideal setting for studying environmental adaptation and cultural contact among indigenous populations. It is from these two angles that ethnoprimatological knowledge and the vocabularies concomitant with it are analyzed here. The chapter offers the first ethnoprimatological account of northwestern Guyana, an understudied area (Lehman 2004: 90), contributing to research on human–primate interactions in South America (e.g., Mere Roncal et al. 2018; Urbani and Cormier 2015; Cormier 2006; Lizarralde 2002; Shepard 2002). At the same time, it is a domain-focused study of contact, a topic of import to Amazonian linguistics (e.g., Epps and Michael 2015; Aikhenvald 2010). Methodologically, the chapter documents terms for nonhuman primates in the three languages and practices associated with the species.

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It then compares them with those known for the dialects of the same languages spoken in areas with different primate ecologies. Such contrastive distributions are determined in turn by the presence of keystone palm resources and wide rivers dissecting the Guianas that prevent species from spreading (Lehman 2004). Mapping the terms, practices, and species allows us to observe how language and culture adapt to the environmental and social niches.

The results show that the different dialects of the three languages retained, borrowed, and dropped terms for primates, or even changed their meanings, fine-tuning their lexical resources to the local environment. The results also unravel intricate systems of ethnoprimatological knowledge with noticeable cases of cultural convergence, some of which are, more strongly put, likely cases of cultural borrowing. One example of such cultural borrowing is the consumption of primates, a taboo among the Warao in Venezuela but a norm among the Warao in contact with the Lokono and Kari'na in Guyana who know no such restrictions. Particularly interesting is the shared knowledge surrounding the Guianan red howler monkey (*Alouatta macconnelli*), encompassing numerous intertwined domains, such as medicine, art, oral tradition, weather forecasting, and timekeeping. Here too cultural borrowing can be identified, for instance, in the spread of Venezuelan Warao tradition of making drums from the skin of the howler that spread to the nearby Lokono and Kari'na in Guyana, contrasting with the practices of the Lokono and Kari'na further east who prefer the skin of other animals. However, the linguistic and cultural borrowings do not align. The observed lexical borrowings are cases of classic borrowing motivated by the need to name unknown referents, independent of the borrowing of cultural practices related to the animals. The chapter ends with an evaluation of the results with the view to using the methods developed here to reconstruct ethnoprimatological proto-vocabularies and identify the areas where Amazonian protolanguages were spoken, thus advancing Amazonian historical linguistics.

### *11.1.1 Languages and Participants*

The lower Moruca River in northwestern Guyana is dominated by seasonally flooded savannah and swamp forest, bordered by mangrove forests along the Atlantic coast and lowland forest to the south. The data for this chapter were collected during 2 months of fieldwork in 2017 in three communities, Santa Rosa, Manawarin, and Waramuri, spread across many "islands" on the seasonally inundated savannah. The communities are inhabited by speakers of unrelated languages: Lokono, Kari'na, and Warao, respectively. Lokono and Kari'na are spoken throughout the pericoastal Guyana, Suriname, French Guiana, and Venezuela (Rybka 2015; Courtz 2008) and belong to the Arawakan and Cariban language family, respectively. Warao is a *language isolate*, a language without known relatives, spoken predominantly in the Orinoco delta (Romero-Figueroa 1997). Figure 11.1 maps the location of the three Moruca communities in Guyana and the other dialects of the three languages compared in this chapter.

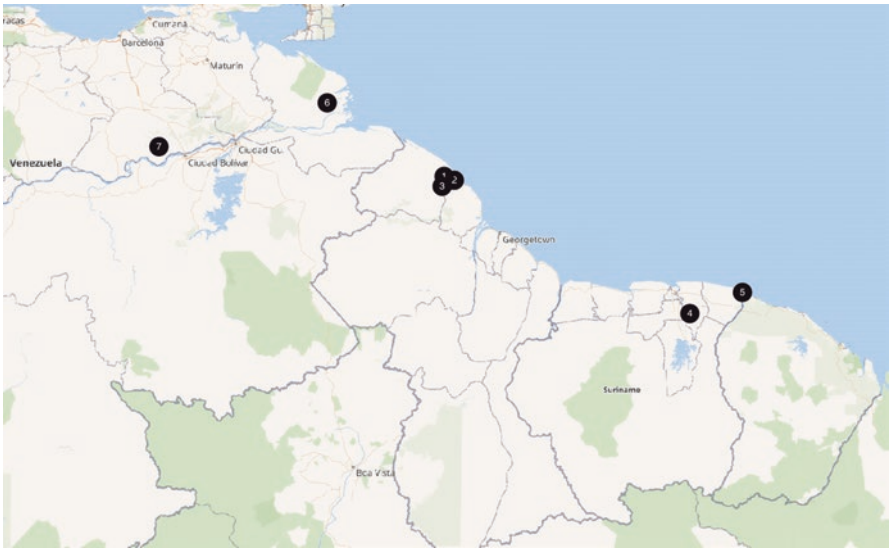


**Fig. 11.1** Compared dialects of Lokono, Kari'na, and Warao: Moruca: Lokono, Santa Rosa (1); Warao, Waramuri (2); Kari'na, Manawarin (3); Suriname: Lokono, Cassipora (4); Kari'na, Galibi (5); Venezuela: Warao, Winikina (6); Kari'na, San José de Guanipa Municipality (7)

The indigenous languages of the Moruca are endangered. There are only a handful of Lokono speakers in Santa Rosa, a situation similar to Lokono settlements in Suriname (Rybka 2015). In Manawarin, only the eldest generation speaks Kari'na. The language is, however, still used by all generations in a few villages in Suriname and Guyana (Courtz 2008: 8). Warao is a vital language in the Orinoco delta (Romero-Figueroa 1997), but its Guyanese variety is on the brink of extinction, with a dozen speakers remaining in Waramuri. In addition to the indigenous languages, the inhabitants of Moruca speak Guyanese Creole English and, often less fluently, (Guyanese) English, the official language of Guyana. Language endangerment parallels the loss of traditional cultural practices, as reflected in the quantitative differences between the Moruca communities, where the Kari'na, speakers of the least endangered language and least affected by contact with outsiders, appear to have preserved more traditional practices involving primates.

## 11.2 Methods

To understand the relationships between primate terms, biogeography of primates, and the circulation of cultural practices associated with them, a three-step analysis was carried out. First, primates known to the speakers were identified using laminate photographs of all Guyanese primates and two (distractor) photographs of species not found in Guyana: red-handed howler monkey (*Alouatta belzebul*) and

**Table 11.1** Audio stimuli used in the elicitation of indigenous names of primates

| Scientific name | Common English name | Audio file |
|---|---|---|
| *Alouatta macconnelli* | Guianan red howler monkey | Davis, T.H. (1979) |
| *Ateles paniscus* | Guianan spider monkey | Davis, T.H. (1982) |
| *Cebus olivaceus* | Guianan weeper capuchin | Robbins, M.B. (2002) |
| *Pithecia pithecia* | White-faced saki | Cohn-Haft, M. (1988) |
| *Saimiri sciureus* | Common squirrel monkey | Parker, III, T.A. (1993) |
| *Potos flavus* | Kinkajou | Parker, III, T.A. (1991) |
| *Saguinus midas* | Golden-handed tamarin | O'Shea, B.J (2005) |
| *Sapajus apella* | Tufted capuchin | Robbins, M.B. (1997) |
| *Chiropotes chiropotes* | Bearded saki | Robbins, M.B. (1998) |
| *Alouatta belzebul* | Red-handed howler monkey | – |
| *Cebus albifrons* | White-fronted capuchin | – |

white-fronted capuchin (*Cebus albifrons*). The stimuli also included a photograph of kinkajou (*Potos flavus*), locally known as *night monkey*, hypothesized to be in the same taxonomic category as primates in the indigenous classification. The speakers were also asked to identify the vocalizations of the animals from the Macaulay Library (Table.11.1). In each community, three men and three women participated in the interviews, except for the Lokono where only five consultants were found. The participants were selected by the community councils for their knowledge of the languages.

To identify dialectal differences, the terms collected on the Moruca were compared with those from the dialects of the same languages spoken in other parts of the Guianas: Surinamese Lokono from Cassipora (author's data), Surinamese Kari'na from Galibi (Courtz 2008), Venezuelan Kari'na from the San José de Guanipa Municipality (Mosonyi 2002; Linares 1998), and Venezuelan Warao from Winikina (Barral 1979; Fig. 11.1). The names were then compared with those used in related languages to identify words borrowed from neighboring languages (*lexical borrowings*), terms coined with the language's own resources (*lexical innovations*), and likely retentions from the protolanguages (*cognate candidates*). As opposed to *true cognates*, whose relatedness is demonstrated by regular sound changes, *cognate candidates* are formally and semantically similar terms that await such evidence. Given the paucity of diachronic linguistic research in Amazonia, it is at this stage best to speak of *cognate candidates.* The comparative sample included 30 Arawakan, 10 Cariban, and 10 Tupian languages (which though spoken further east may have been the source of several terms borrowed into the languages discussed here). For limitations of space, only one cognate candidate is given for each term. The data come from Apalaí (Camargo 2002), Bahuana (Ramirez 1992), Carijona (Robayo 1996), Manao (Goeje 1948), Mawayana (Coretta 2013), Pemón (Armellada and Salazar 1981), Piapoco, Yucuna (Kondo 1983), Tariana (Aikhenvald et al. 2001), Taruma (Farabee 1918), Trio (Amazon Conservation Team Suriname 2018), Wapishana (Henfrey 2002), Wayãpi (Grenand 1989), Yumana, and Maragua (Ramirez 2001).

Finally, open-ended interviews about primates were conducted on the Moruca. The results were compared with ethnographic records from Suriname, Venezuela, and Guyana (Olsen 1996, Barral 1979, Heinen 1973, Abbenhuis 1939, Roth 1924, 1915, Penard and Penard 1907). The observed variation in terms and practices was then mapped against the distribution of primates in the respective areas to determine whether the vocabularies are attuned to the biogeography of the species or mediated by the borrowing of cultural practices. The distribution maps are based on data from the International Union for Conservation of Nature, elaborated with more detailed Guianan sources (e.g., Lehman 2004; Linares 1998).

## 11.3 Results: Terms for Nonhuman Primates

The speakers easily recognized the familiar species from the laminates and vocalizations. The species known to the speakers were also identified in situ. The speakers did not recognize the kinkajou from the picture, as they were only familiar with its vocalization, but considered it an animal belonging to the same taxon in the indigenous classification, similarly to other indigenous people (e.g., Barí, Lizarralde 2002). The speakers were familiar with the Guianan spider monkey even though they reported it was not found in the area. For this reason, the species was excluded from the subsequent interviews. So were the red-handed howler, white-fronted capuchin, tufted capuchin, bearded saki, and golden-handed tamarin, which were unknown to the consultants. The vocabularies of Moruca Lokono, Kari'na, and Warao can be compared with those of the other dialects (Table 11.2).

**Table 11.2** Primate terms in the Moruca (MO), Surinamese (SU), and Venezuelan (VN) dialects of Lokono, Kari'na, and Warao. Species: *Alouatta macconnelli* (1), *Cebus olivaceus* (2), *Potos flavus* (3), *Pithecia pithecia* (4), *Ateles paniscus* (5), *Saimiri sciureus* (6), *Saguinus midas* (7), *Sapajus apella* (8), *Chiropotes chiropotes* (9)

| | Lokono (MO) | Kari'na (MO) | Warao (MO) | Lokono (SU) | Kari'na (SU) | Kari'na (VN) | Warao (VN) |
|---|---|---|---|---|---|---|---|
| 1 | *itorhi* | *arawata* | *wai* | *hitorhi* | *arawata* | *arawata* | *wai* |
| 2 | *howa*[a] | *yarakaru*[a] | *neku* | *howa* | *iwarakaru* | *iwarakaru*[a] | *neku*[a] |
| 3 | *wisowiso* | *kushinkushin* | *?* | *wisowiso* | *kupara* | *?* | *koraikorai* |
| 4 | *horhwe* | *ariki* | *horowe* | *horhwe* | *ariki* | – | *horobe* |
| 5 | *kwata*[b] | *kwata*[a, b] | *kuata*[b] | *adafe* | *kwata* | – | – |
| 6 | *kabwanama* | *karimia* | *kabuanama*[a] | *kabwanama* | *akarima* | – | – |
| 7 | – | – | – | *sûtu* | *kusiri* | – | – |
| 8 | – | – | – | *fodi*[a] | *meku*[a] | – | – |
| 9 | – | – | – | *bisa* | *kusiu* | *kusiu* | – |

[a]Used also as a general category term
[b]Known by name but not found in the area
? Found in the area but not known by name or no term in the literature

The observed dialectal variation reflects the biogeography of the species; the names match the distributions expected for the different parts of the Guianas. First, three species, Guianan red howler monkey, Guianan weeper capuchin, and kinkajou, are found throughout the Guianas, and expectedly there is little variation in their names across the dialects. The Guianan red howler monkey (*A. macconnelli*, Fig. 11.2), known in Lokono dialects as *(h)itorhi*, has cognate candidates in Arawakan languages, fine-tuned to the locally available howler species (e.g., Maragua *ytury* "*A. seniculus*"). Similarly, Kari'na *arawata*, attested in the three dialects, is common in the Cariban family, typically referring to the Guianan red howler monkey (e.g., Apalaí *arrata*), but occasionally to other howler species (e.g., Carijona *arawata* "*A. seniculus*"). It is beyond the scope of this chapter to determine which species was the original referent of the Lokono and Kari'na terms. Finally, Warao *wai* is used in both Warao territories.

Similarly, Lokono *howa* "Guianan weeper capuchin" (*C. olivaceus*, Fig. 11.3), attested in both dialects, has cognate candidates in other Arawakan languages that sometimes refer to closely-related species (e.g., Tariana *halo* "*C. albifrons*"); which species was its original referent remains unclear. Kari'na *yarakaru*, stable across Kari'na dialects, is likely a retention as well that consistently refers to Guianan weeper capuchin (e.g., Pemón *iwarka*). Warao *neku* is most likely a native Warao term, less likely a borrowing from Kari'na *meku* "*S. apella*" that underwent a semantic shift to *C. olivaceus*. All in all, terms for the Guianan red howler monkey and Guianan weeper capuchin, species present in all seven locales, appear to be

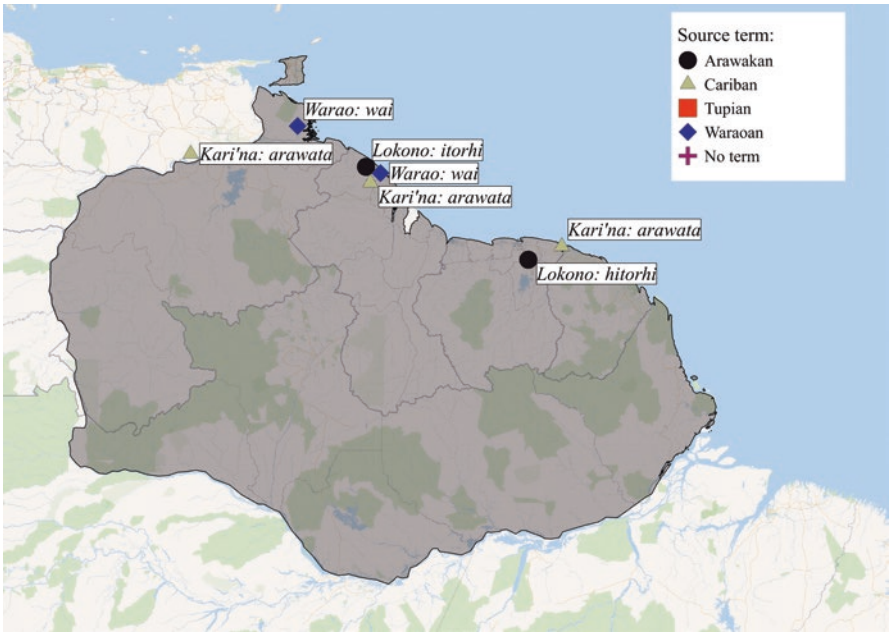


**Fig. 11.2** Terms for *A. macconnelli* and the species distribution based on IUCN (2008a)

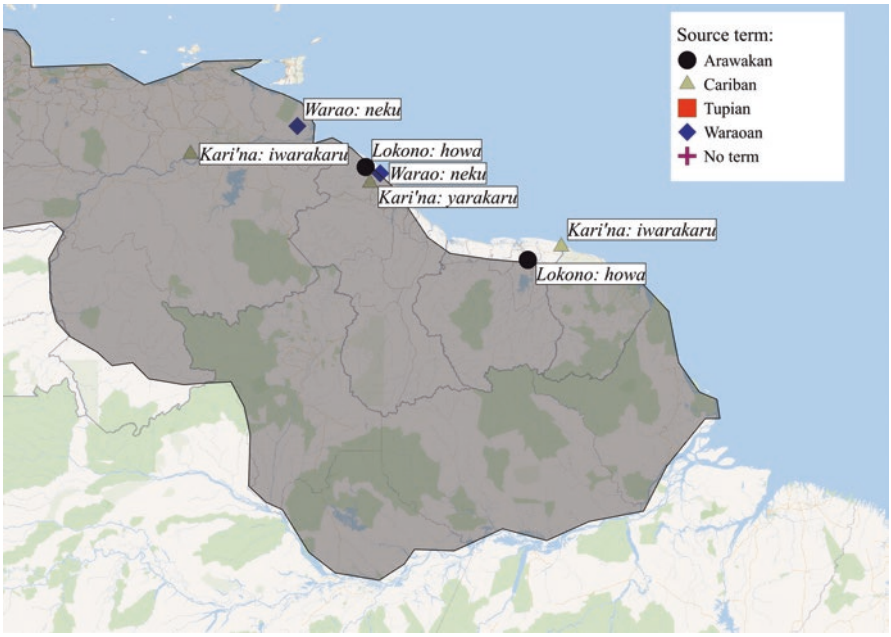


**Fig. 11.3** Terms for *C. olivaceus* and the species distribution based on IUCN (Currently the definition of the species is being reassessed by IUCN, and neither the old nor the new entry are available at the IUCN portal; the distribution is based on the old entry, still reproduced on Wikipedia)

retentions that might have merely undergone semantic fine-tuning to the local population of the *Alouatta* genus and the Cebidae family within the larger Arawakan and Cariban language families.

The terms for kinkajou (*P. flavus*, Fig. 11.4), often reduplicated, are likely onomatopoeic; notably, the animal was easily recognized by its sound. Lokono *wisowiso* is found in both dialects but not in other Arawakan languages, which makes it a likely innovation. Warao *koraikorai* was documented only in Venezuela, while its name in Moruca Warao and Venezuelan Kari'na is unknown. However, two Kari'na terms were found in other dialects. Moruca Kari'na *kushinkushin* is a likely Cariban retention (e.g., Apalaí *kuxikuxi*), also used in Venezuelan Spanish (Linares 1998). Surinamese Kari'na *kupara*, on the other hand, is a possible borrowing from Wayãpi *yupala*, a language with which Kari'na was in contact at an earlier stage (Meira and Muysken 2017). The nocturnal nature of the animal and language attrition may have contributed to its low linguistic salience, resulting in the loss of the name in Moruca Warao and Venezuelan Kari'na and its reinvention in Lokono through coinage and in Surinamese Kari'na through borrowing.

The linguistic picture is different for the species with restricted distributions such as the white-faced saki (*P. pithecia,* Fig. 11.5). Lokono *horhwe* is likely Arawakan, but it is not common in the family, suggesting it is an innovation, perhaps exchanged with the Wapishana (Arawakan), who call it *oroa*. The term was borrowed as *horobe* into

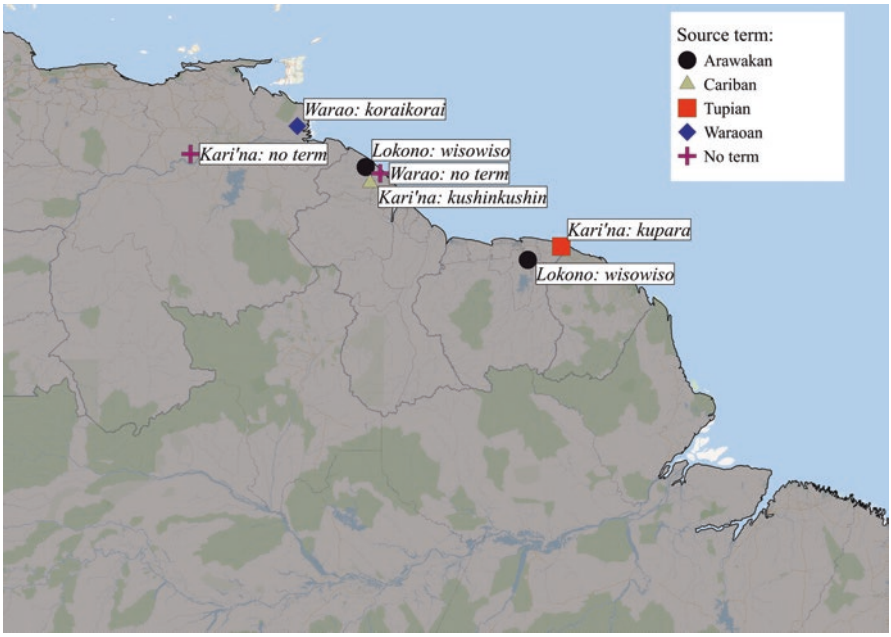


**Fig. 11.4** Terms for *P. flavus* and the species distribution based on IUCN (2015)

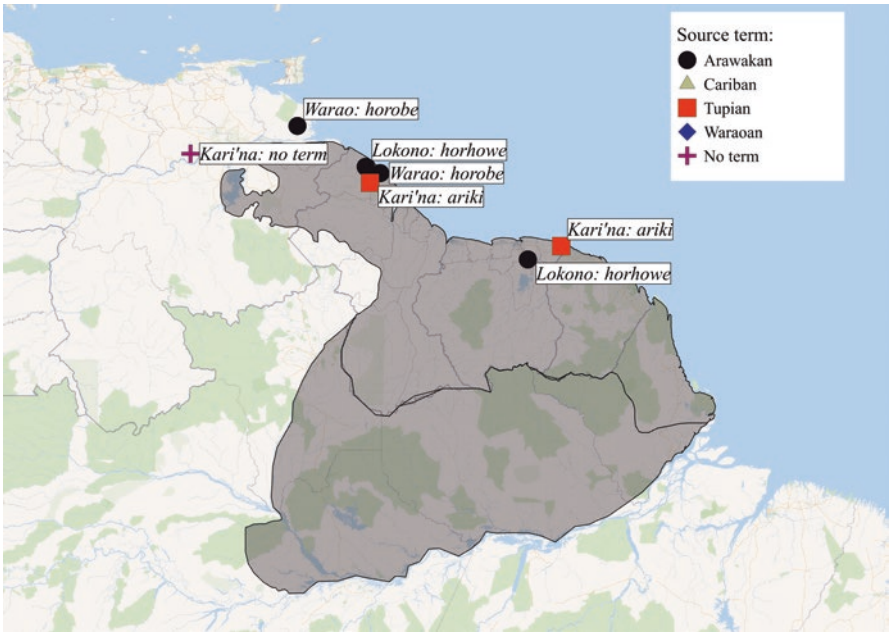


**Fig. 11.5** Terms for *P. pithecia* and the species distribution based on IUCN (2008f)

Moruca Warao, spoken within the distribution of the species, and into Venezuelan Warao, spoken just outside of it. Venezuelan Kari'na, also outside its distribution, does not have a term for the animal, while Moruca and Surinamese Kari'na *ariki* are a likely borrowing from Wayãpi *yaliki*, which likely replaced *wanuku*, an older term documented for Kari'na and Island Carib (Courtz 2008; Breton and Besada Paisa 1999). It is noteworthy that several other Cariban languages likely borrowed the species' name from Wayãpi (e.g., Macushi, Trio, Wayana), suggesting their ancestors may have come from an area where it was unknown.

Surinamese Lokono *adafe* "Guianan spider monkey" (*A. paniscus*, Fig. 11.6) is transparent (*ada–fe* "tree–garbage"), suggesting it is an innovation. Surinamese Kari'na *kwata* is found in Arawakan (e.g., Yumana *kuwatá*), Cariban (e.g., Pemón *kwata*), and Tupian languages (e.g., Wayãpi *kwata*). The term may be of Tupian origin, but its spread is difficult to trace back as it was borrowed into local *lingua francas*, which may have dispersed it relatively recently (e.g., Guyanese Creole English, Brazilian Portuguese). *Kwata* is also used by the Moruca Lokono, Warao, and Kari'na even though the animal is not found in area. Moruca *kwata* may come from the creole, used within and outside the community, whose vocabulary reflects the distribution of primates in a larger area. An alternative interpretation is that the range of Guianan spider monkey was once larger and that the indigenous terms on the Moruca are the only markers of this past distribution. The distribution of the species by IUCN (2008b) does in fact include a second zone including the Moruca,

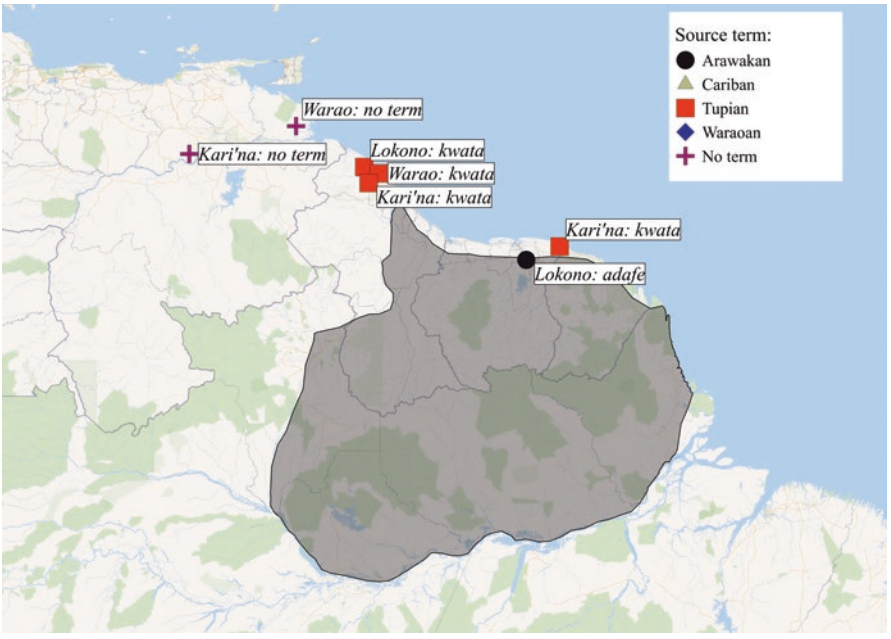


**Fig. 11.6** Terms for *A. paniscus* and the species distribution based on IUCN (2008b), including only the area where the species is "extant" in keeping with Lehman et al. (2006)

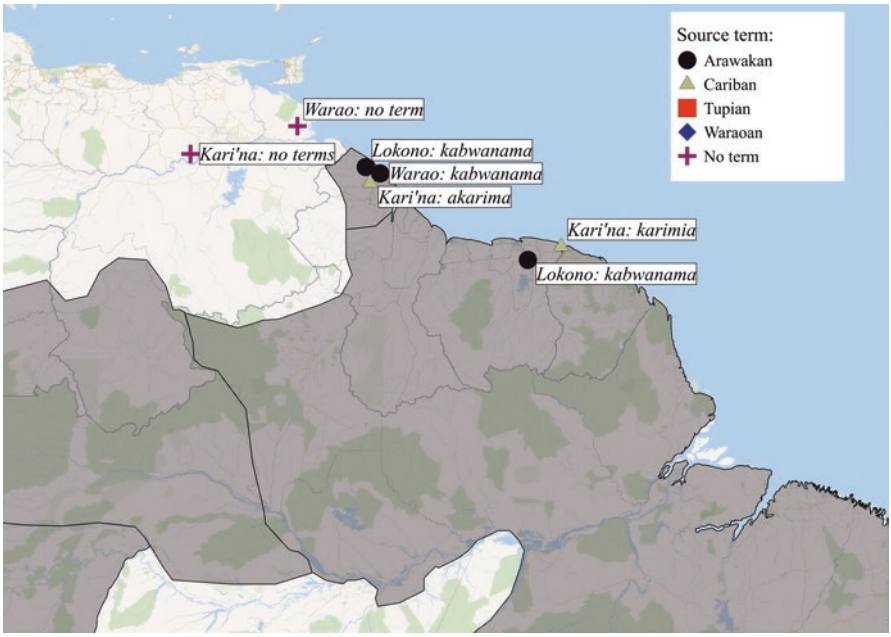


**Fig. 11.7** Terms for *S. sciureus* and the species distribution based on IUCN (2008e)

where the species is considered "probably extant." Venezuelan Kari'na and Warao do not have a name for the species, as it does not appear in their territories.

Lokono *kabwanama* "common squirrel monkey" (*S. sciureus*, Fig. 11.7), also called *kabwashi*, is partly transparent (*ka–bwa–nama* "having–spoiled–?" and *ka–bwa–shi* "having–spoiled–head") and does not have reflexes in other Arawakan languages. Regarding these etymologies, it is of note that the Kari'na use their name for the species as an offensive term for someone with an anomalously shaped back of the head (Ahlbrinck 1931). Lokono *kabwanama* was borrowed by Moruca Warao (a name unknown in the Orinoco delta where the species is absent), in response to the different biogeography of primates on the Moruca. Kari'na *akarima* is also transparent (*akari–ma* "squirrel–big") and possibly a retention, with reflexes in Trio, Carijona, and Macushi, referring to the same species. The term was retained in Kari'na dialects spoken in areas where the species appear (Surinamese and Guyanese Kari'na) but dropped in areas where it is absent (Venezuelan Kari'na).

The vocabularies of Surinamese Lokono and Kari'na include three more terms for species found in Suriname but absent on the Moruca. Lokono *fodi* for the tufted capuchin (*S. apella*, Fig. 11.8) is a likely retention that quite consistently refers to this species in Arawakan languages (e.g., Yucuna *poí*). Kari'na *meku*, while a likely retention as well (e.g., Apalaí *meku*), was adjusted to the local Cebidae population (e.g., Carijona *meku* "*Cebus albifrons*"); it remains unclear which species was its original referent. Given that the terms are likely retentions, the Moruca Lokono and


**Fig. 11.8** Terms for *S. apella* and the species distribution based on IUCN (2008g) and Lehman et al. (2006)

Kari'na must have dropped them for lack of the referent. Logically, none of the dialects of Warao has a term for the species.

Surinamese Lokono *sûtu* (also *sururu*) for the golden-handed tamarin (*S. midas*, Fig. 11.9) is a possible retention (e.g., Piapoco *síiré*). On the one hand, the Arawakan term was, however, adjusted to the local conditions, as Piapoco *síiré* refers to the common squirrel monkey, which the Lokono call with partially transparent innovations. Kari'na *kusiri*, on the other hand, is a possible borrowing from Tupian languages, where the term is transparent (e.g., Wayãpi *kusili*, *kusi* "brown" and *–li* "small"). The Moruca and Venezuelan dialects of Lokono, Kari'na, and Warao, spoken outside the range of the species, do not have a term for the animal.

Finally, Surinamese Lokono *bisa* "bearded saki" (*Ch. chiropotes*, Fig. 11.10) is a possible Arawakan retention in closely related Wapishana (*wisa*), Bahuana (*wica*), and Manao (*huitcha*), which could, however, have been borrowed from Wapishana by the more distantly related Lokono, who used to be in contact with the Wapishana (Eriksen 2011). Taruma (isolate) *hisai* "*Ch. Chiropotes*" (Farabee 1918) could have been borrowed from the nearby Wapishana, Bahuana, or Manao or alternatively be the ultimate source of the borrowing into these languages. On the Moruca, for lack of the referent, the name was either dropped or never borrowed. The Moruca and Venezuelan Warao, living outside its range, do not have a term for it, but the term was borrowed by Surinamese Warao (Staffeleu 1975). Surinamese Kari'na *kusiu* is in turn a borrowing of Wayãpi *kusiu*, transparent in Wayãpi (*kusi* "brown" and *–u*

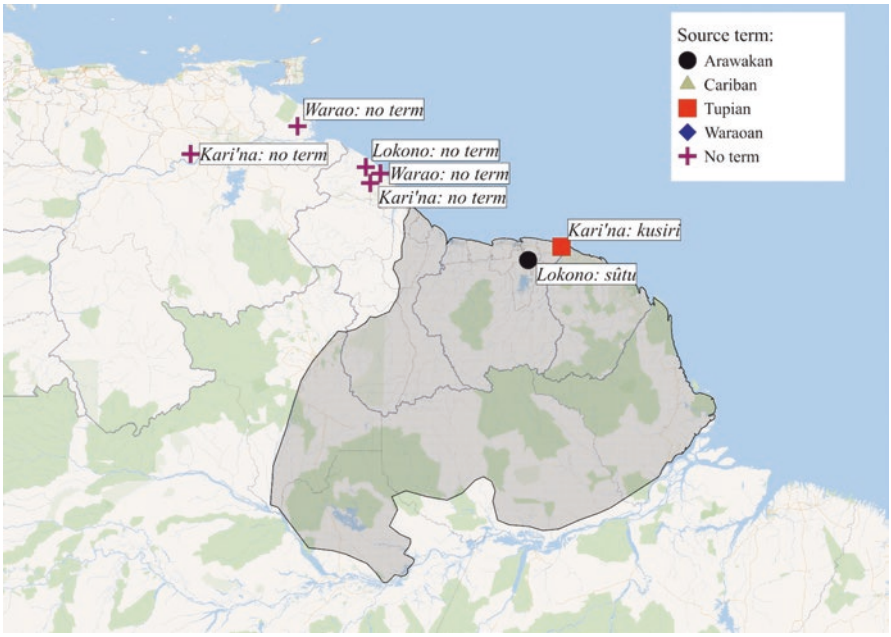


**Fig. 11.9** Terms for *S. midas* and the species distribution based on IUCN (2008d)

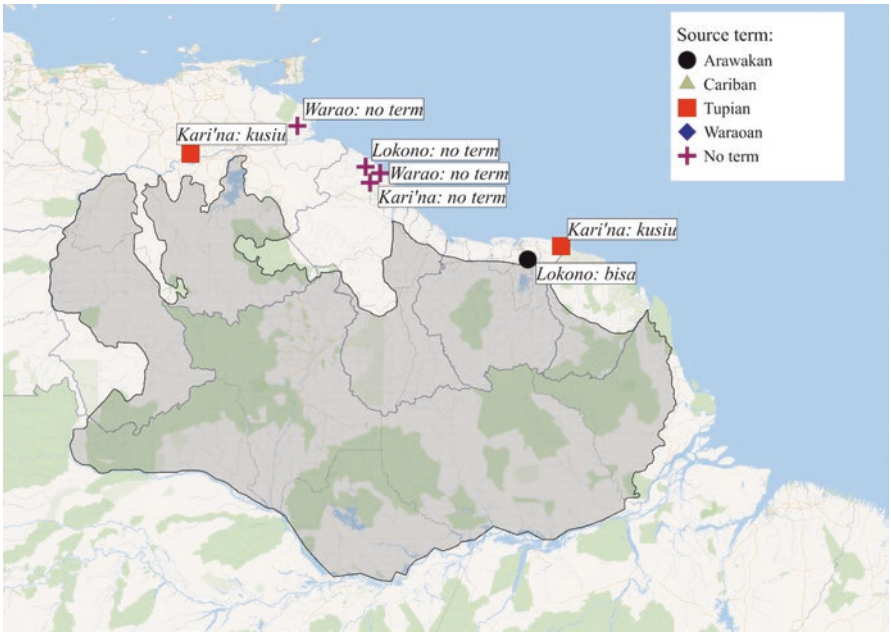


**Fig. 11.10** Terms for *Ch. chiropotes* and the species distribution based on IUCN (2008c)

"big") and attested in other Tupian languages. Though absent on the Moruca, *kusiu* appears in Venezuelan Kari'na, spoken at the edge of the saki's area. *Nota bene*, from Tupian languages, the term was likely borrowed into Brazilian Portuguese as *cuxiú*, referring to different *Chiropotes* species (e.g., IUCN 2008h). Since Tupian languages are widespread south of the Amazon where the bearded saki is absent and from where the Wayãpi migrated north (Rose et al. 2012), Wayãpi *kusiu* must have first been extended to the bearded saki encountered north of the Amazon.

The vocabulary differences between the dialects are also conspicuous on the level of general terms. The three languages do not have an equivalent of the hypernyms *monkey* or *primate*, a distinct term that the species names are in a type-of relationship with. Instead, the languages employ for this purpose one of the species terms. On the Moruca, the term for the common squirrel monkey (Lokono and Warao) or the Guianan weeper capuchin (Kari'na) is used. In Moruca Lokono, one could say therefore that *howa* is a type of *kabwanama* since the latter term has a secondary hypernymic meaning. In Suriname, the term for the tufted capuchin (Lokono and Kari'na) and in Venezuela for Guianan weeper capuchin (Warao, and possibly Kari'na) serve as hypernyms. The differences reflect perceived species density. The consultants on the Moruca name the common squirrel monkey and Guianan weeper capuchin as the most common species, while in Suriname this place is given to the tufted capuchin by the Lokono. In the Orinoco delta, two species of primates are common: Guianan red howler monkey and Guianan weeper capuchin. As explained below, however, the former is culturally highly marked, making the latter a more natural choice for a general term.

## 11.4 Results: Cultural Practices

The practices associated with primates on the Moruca are summarized in Table 11.3, except those practices involving Guianan red howler monkey discussed separately (Sect. 11.4.1 – 11.4.12). The four species are important today mainly as pets, pests, source of food, medicine, leather, and a commodity on the wildlife market. Cultural practices mentioned in the literature but not by the consultants (the use of teeth in

**Table 11.3** Cultural practices involving primates on the Moruca among the Lokono (L), Kari'na (K), and Warao (W). Numbers indicate the number of consultants that discussed a particular practice

| | *Cebus olivaceus* | *Pithecia pithecia* | *Potos flavus* | *Saimiri sciureus* |
|---|---|---|---|---|
| Pet | L4, W4, K6 | L4, W4, K6 | W1, K2 | L4, W4, K6 |
| Pest | L4, W4, K5 | – | – | L4, W4, K4 |
| Food | L1, W3, K3 | K4 | K3 | – |
| Accessories | K3 | K1 | – | L1, W1, K3 |
| Commodity | L5, W6, K6 | – | – | L5, W6, K6 |
| Medicine | K1 | K1 | – | K1 |

necklaces; bones as spoons, containers, and ornaments; hair in armbands, belts, and brushes; primate patterns in basketry, earthenware, and string games, primate-derived clan names) are not discussed. The cultural practices show significant qualitative overlap across the three communities. Quantitative differences seem to reflect progressing acculturation, most advanced among the Lokono and least felt by the Kari'na.

All species except kinkajou (*P. flavus*) were consistently praised as good pets. Incidents of kinkajous being kept as pets were reported by the Warao and Kari'na but described as a curiosity. Some Warao called it a "spirit animal," because it moves quickly and noisily at night. Two species, Guianan weeper capuchin (*C. olivaceus*) and the common squirrel monkey (*S. sciureus*), were also often named as pests of corn fields and fruit trees, respectively, and as commodity on the wildlife market. One Kari'na consultant listed also medicinal uses of oils prepared with the burnt hair of the two species and the white-faced saki (*P. pithecia*), worth mentioning considering the medicinal and spiritual properties of the howler's hair (Sect. 11.4.6–11.4.7). Occasionally, the Lokono, Kari'na, and Warao use the skin of the common squirrel monkey to make watch bracelets or stuff the whole animal to make ornaments. The Kari'na also listed two more species for this purpose.

An interesting case of the development of new practices can be discerned in the food category. Today the Moruca Kari'na consider several species edible. Guianan weeper capuchin (*C. olivaceus*) was deemed palatable by the Moruca Warao and Lokono. The Lokono and Warao dietary patterns have a long history in the area. Already a century ago, mourning Warao women on the Moruca would cry out "Who will catch agouti, monkey, fish, and turtle for us now?" (Roth 1915: 74). The species must have been consumed by the Lokono with more frequency in the past, since it used to be referred to with an avoidance term, only attested for game species. *Mayeriki* "untrimmed one" was employed on the Moruca when traveling in a boat in order not to anger the water spirit (Roth 1915). For the same reason, among Surinamese Lokono, where primates are consumed as well, their blood cannot be dropped into the river (Abbenhuis 1939). The decrease in consumption of primates among the Moruca Lokono has been attributed by the consultants to acculturation. The fact that the Guianan weeper capuchin was considered palatable by the Moruca Warao is more surprising since primates are not consumed by Venezuelan Warao (Heinen 1973). Equally surprising are the Moruca Kari'na practices as Schomburgk (1847) and Roth (1915) assure that Guyanese Kari'na, in contrast to Surinamese Kari'na, do not eat primates. The change of dietary patterns of the Moruca Warao and Kari'na is therefore a possible Lokono influence. However, this cultural convergence in the food category on the Moruca does not align with linguistic borrowing: none of the terms for edible species was borrowed from Lokono. Crucially too, Kari'na data show that the such practices are localized. Generalization such as "Amerindians in Guyana prefer meat from spider monkeys and brown capuchins [as opposed to other primates]" should therefore be avoided (*pace* Lehman et al. 2006: 123). Similar patterns can be observed for the Guianan red howler monkey (*A. macconnelli*, henceforth, *Alouatta*, Table 11.4). Again, the

**Table 11.4** Cultural importance of *Alouatta macconnelli* on the Moruca

| Use | Lokono | Kari'na | Warao |
|---|---|---|---|
| Call used as alarm | 2 | 3 | 3 |
| Call used for weather forecasting | 2 | 4 | 5 |
| Call interpreted as praying | 2 | 3 | |
| Ludic dances and song inspired by behavior | 2 | 6 | 4 |
| Restrictions on ridiculing *Alouatta* | 3 | | |
| Hair used to chase evil spirits away | 2 | 1 | 3 |
| Hair used as medicine for scorpion bites | | 1 | |
| Skin used to make a drum | 2 | 3 | 4 |
| Skin used to make ornaments | 2 | 1 | 2 |
| Meat considered a delicacy | 6 | 6 | 6 |
| Throat used as medicine for whooping cough | 3 | 6 | 6 |
| Folklore tradition of *Alouatta's* cough | 2 | 3 | |
| Young animal kept as pet | 1 | 2 | 2 |

quantitative differences between the communities appear to reflect the effects of acculturation.

As opposed to the above species, the knowledge about *Alouatta* encompasses a wider set of interconnected domains, forming templates at the intersection of subsistence, oral tradition, beliefs, medicine, and language. Though some aspects of such knowledge are based on general observations of the species that were likely made independently, others might have been exchanged. The following sections discuss each of the categories in Table 11.4 except for fact that *Alouatta* can be kept as a pet.

### *11.4.1 Call Used as Alarm*

The Lokono use the verb *shimakun*, equivalent to Warao *koita* and Kari'na *eta*, to describe the sound made by *Alouatta.* The verbs mean "call" and do not have the doleful connotations of *howl*. The recognizable calls can be heard in the morning in the communities and form part of time-keeping practices, signaling it is time to wake up. Though mentioned in all three villages, it is a rare practice today as modern time-keeping devices are available. The Surinamese Kari'na produced also a charm from *Alouatta*'s larynx, rubbed into trumpets and flutes to imbue them with a stronger sound (Penard and Penard 1907). Thus enchanted, the instruments were used as a call to arms. Penard and Penard (1907) also mention *Alouatta* as an ingredient in charms increasing singing abilities (see Sect. 11.4.8 on drums). The practices speak to the saliency of the call, without the doleful overtones it has in English.

### *11.4.2 Call Used for Weather Forecasting*

The Lokono, Kari'na, and Warao on the Moruca say that when *Alouatta* calls in morning, a hot day approaches, and when it calls in the evening, rain will come. The weather associations appear also in a Warao story, according to which *Alouatta* was too proud of its vocal abilities to influence the weather. Therefore, one day when it was calling the rain, a lightning struck it and burned its face black (see Sect. 11.4.5 for avoidance terms referring to *Alouatta*'s face). Its weather forecasting abilities are also mentioned by Roth (1915) as common in Guyana and may be a widespread observation, possibly arrived at independently.

### *11.4.3 Call Interpreted as Praying*

The Lokono and Kari'na on the Moruca say that *Alouatta* come in a circle when they call and describe it as "praying," *khoyabwan* and *okunoma*, respectively. The Kari'na find an explanation for it in their folklore related to the whooping cough, speaking of *Alouatta* praying to God to save him from human predators (see Sect. 11.4.12). A similar religious interpretation of the call is encoded in Surinamese terms for the species. *Dominei* (Lokono) and *dominiri* (Kari'na), borrowings from Dutch *dominee* "a minister of Dutch Reformed Church," refer to the individual leading the calling. Surinamese Kari'na had two more terms for the individual leading the groups' calls, *masakari* and *wororoku* (Ahlbrinck 1931). These native terms suggest that the observation that the animals call in a group has a long history though its monotheist guise is likely a more recent Western influence.

### *11.4.4 Ludic Dances and Songs Inspired by Behavior*

The Lokono, Kari'na, and Warao on the Moruca have a traditional dance called *itorhi ibinin, arawata kinuwanon,* and *wai ahoho*, respectively, meaning "*Alouatta*'s dance." The choreography mimics the behavior of the animal: the dancers walk clumsily in a circle, scratching themselves to make the audience laugh. The Kari'na also have a song that accompanies the dance, a different version of which is known from Suriname (Ahlbrinck 1931: 488). The peculiar behavior of *Alouatta* is also documented in Surinamese Kari'na simile: "you scratch yourself like *Alouatta*" (Penard and Penard 1907: 83). Both Ahlbrinck (1931) for Surinamese Kari'na and Mink (1992) for Surinamese Lokono discuss imitative dances, though *Alouatta*'s dance is not explicitly mentioned (see Sect. 11.4.9 for costumes made of *Alouatta* that may have been used during such dances). *Alouatta*'s song, but not a dance, is also documented for Venezuelan Warao but appears unrelated to the ludic dances described here (Olsen 1996). While likely a case of cultural convergence between Lokono and Kari'na, the trajectory of the exchange of the songs and dances cannot be demonstrated.

### *11.4.5 Ridiculing Alouatta*

Ridiculing *Alouatta* is, however, not always allowed. The Moruca Lokono warn that pregnant women should not laugh at the animal because the child would be born hairy. Laughing at *Alouatta* can even be punished by death according to Lokono oral traditions no longer remembered on the Moruca (Roth 1915). Similar precautions are taken by pregnant Warao women in Venezuela, who call the animal *amuhoro hoko* "white face," so that their children should not be born with monkey fur (Barral 1979). The Moruca Warao in turn joke about *Alouatta*'s black face in relation to its abilities to call the rain (see Sect. 11.4.2). The Kari'na do not know such restrictions on ridiculing *Alouatta*. Moreover, in Surinamese Kari'na, *arawata* is an offensive term for someone with a particularly dark face (Ahlbrinck 1931).

### *11.4.6 Hair Used to Chase Away Evil Spirits*

The Lokono, Warao, and Kari'na use *Alouatta*'s hair to repel evil spirits causing illnesses. Epileptic fits and "mystery illness," an unknown condition with symptomatic uncontrollable fits, were specifically mentioned. Such smoking practices are rarely mentioned in previous studies of the Kari'na and Lokono, although a smoking motif appears in Lokono oral tradition about the whooping cough believed to be caused by spirits (see Sect. 11.4.12). Moreover, in Suriname, a mad dog would be forced to inhale the smoke from monkey hair as a cure (Abbenhuis 1939: 38). On the Orinoco, among the Warao, Brown (1877) discusses smoking the patient as a remedy for an epileptic fit, likely a related treatment. Crucially, smoking practices should not be confused with blowing tobacco smoke on the patient to remove evil spirits practiced by medicine men, which are discussed in the literature at length.

### *11.4.7 Hair Used as Medicine for Scorpion Stings*

The oil made with *Alouatta*'s hair has yet another medicinal application. One Kari'na participant mentions burning the hair of *Alouatta* and mixing it with oil to produce an anointment against scorpion stings. It is worth pointing out that the same consultant knew also the medicinal properties of the hair of three other primates (*C. olivaceus*, *P. pithecia*, and *S. sciureus*), all of which had to be prepared in the same way. Noticeable is the connection to the burning of the hair to repel evil spirits, the preparation of the remedy for whooping cough, one recipe for which also involves an anointment of burned hair, and the oral tradition linking these elements. Burned hair of the *Alouatta* is the active ingredient in all these medicaments (see Sects. 11.4.6, 11.4.11, and 11.4.12).

### *11.4.8 Skin Used to Make Drums*

The Lokono, Kari'na, and Warao on the Moruca report that they manufactured a two-sided drum from the skin of *Alouatta* called *sambura* in Lokono and Kari'na (from Spanish *tambor*) and *eruru* in Warao. The Moruca and Venezuelan Warao consider *Alouatta*'s skin the best choice (Heinen 1973). While the oral traditions shared by the Warao and Lokono explain the origin of the drum (Roth 1915), the Lokono and Kari'na report that the skin of other animals is preferred, particularly that of the red-rumped agouti. This scenario is consistent with Surinamese sources which suggest deer, agouti, and peccary species, listing *Alouatta* as the last resort (Kambel and Jong 2006; Mink 1992; Ahlbrinck 1931). These differences do not correlate with the availability of resources; deer, agouti, peccary, and *Alouatta* are found throughout the Guianas (Husson 1978; Linares 1998). Given the preferences, lack of native terms for such drums in Lokono and Kari'na, and the oral tradition known to the Warao and Lokono, the use of *Alouatta*'s skin to make a drum likely spread from Venezuelan Warao to the Lokono and Kari'na on the Moruca.

### *11.4.9 Skin Used to Make Ornaments*

The Lokono and Warao on the Moruca mention that the skin and tail can be made into a cap; the Kari'na reported a carnival mask instead. There are no special terms for such headpieces in the languages. Neither are they daily garments but costumes for a special occasion, such as New Year celebrations. The garment has, however, a long history as it has been mentioned by other authors who similarly saw it being worn on special occasions (Roth 1924). The hat is perhaps the last remnant of the many costumes that were once worn during the performances of the imitative animal songs and dances (§11.4.4). Penard and Penard (1907) give an account of the festivities during which they observed such animal costumes. Finally, the consultants also discussed stuffing the animal and using it as a decoration for the interior of their houses.

### *11.4.10 Meat Considered a Delicacy*

Consultants from the three communities report that the meat of *Alouatta*, especially that of the hind legs, is a delicacy, though most participants reported not having eaten it in years. The meat is described as tastier than that of tapir and peccaries and only surpassed by that of paca and deer. The Moruca Lokono have restrictions on the consumption: pregnant women should not eat it since the baby will be as hairy as the animal, but the animal is considered a delicacy both in the Moruca and in Suriname. In a Surinamese Kari'na story, a comparison is made to "the teeth of a

cooked howler" (Penard and Penard 1907: 26); charms for hunting monkeys made of *Alouatta*'s brain are also known among the Surinamese Kari'na (Penard and Penard 1907), suggesting that the species has been consumed in Suriname. Ethnohistorical sources, however, indicate that primates were not consumed by the Moruca Kari'na (e.g., Schomburgk 1847). The Moruca Warao joke about tricks to ascertain that *Alouatta* falls from the tree when hit, as it can wrap its tail around the branches. Venezuelan Warao, however, deem primates unpalatable (Heinen 1973). This suggests a change in diet of the Moruca Warao and Kari'na, possibly under the influence of the Lokono.

### *11.4.11 Larynx Used as Medicine for Whooping Cough*

On the Moruca, the larynx of *Alouatta* is used as a medicine against whooping cough, known locally as *itorhi thonolia* (Lokono), *wai obo* (Warao), and *arawata atono* (Kari'na), meaning "*Alouatta*'s cough." The recipes vary; the most common one, however, consists in using the larynx as a cup. The medicinal properties of the larynx are also known among the Lokono and Kari'na in Suriname (Kambel and de Jong 2006), but not among the Warao in Venezuela. The relationship between the *Alouatta* and whooping cough is documented for other Arawakan (e.g., Baniwa *iit-shítta* "suffer from whooping cough," from *íitsi* "*Alouatta*," Ramirez 2001) and Cariban people (e.g., Makushi *arautaimî* "whooping cough," from *arauta* "Alouatta," Amódio and Pira 2007). Venezuelan Warao know it as *obo sabana* "bad cough" (Barral 1979), although Wilbert (2001) calls it also *wai obo*. The Moruca Lokono, Kari'na, and Warao also use a fern, whose root resembles *Alouatta's* tail to prepare a medicine for the disease (Reinders 1993). What is most likely the same fern is also used for this purpose by Venezuelan Warao, who also use several other plants to make a medicine against whooping cough (Wilbert 2001). This information and the fact that Venezuelan Warao do not consume primates suggest that the medicinal use of the larynx and the fern on the Moruca may be originally Lokono or Kari'na and was borrowed by the Warao.

### *11.4.12* Folklore Tradition of *Alouatta*'s Cough

Oral traditions connect many aspects of cultural knowledge. A good example is the story of the origin of the whooping cough. The Moruca Lokono know a story about an evil spirit that decimates children. The Lokono killed him and his family with smoke. As the spirits died, they coughed and fell from a tree in the shape of *Alouatta*. The story thus explains the Lokono name for whooping cough, a disease particularly dangerous to children, and the rationale behind the medicine. It also sheds light on the practice of burning the hair to scare off evil spirits: *Alouatta*, being an incarnation of those, is deterred by the smell of its own kind burning.

The Moruca Warao today do not know the story, but a Warao version of it was documented in the area a century ago (Roth 1915); a similar story was documented among the Venezuelan Warao (Wilbert 1970). Roth (1915) also gives a Kari'na story with a virtually identical plot. The modern Kari'na version has *Alouatta* overkilled by people, for which God punished them with whooping cough but also gave them the medicine. Since Venezuelan Warao do not eat *Alouatta*, nor use it as medicine, this medicinal knowledge was likely borrowed from their neighbors on the Moruca together with the folklore concomitant with it.

## 11.5 Conclusions

The observed picture of the linguistic and cultural aspects of knowledge about primates is one of environmental adaptation and cultural convergence. Primate terms reflect the local biogeography of species. The various dialects retained, borrowed, and dropped certain terms or even changed their meanings, fine-tuning their lexical resources to the niches in which they are spoken (Table 11.5). The findings are central to the discussion of Amazonian contact scenarios, showing that classic lexical borrowing motivated by the need to name new species is common in Amazonia, despite the known claims about restriction on lexical borrowing, typical of some parts of Amazonia (Haynie et al. 2014; Bowern et al. 2011).

With the ethnobiological terms finely attuned to the local environment, by identifying retentions, borrowings, and innovations, the animal lexicons of protolanguages can be reconstructed and plotted against the distribution of species to illuminate the homelands of the proto-speakers. This chapter shows that primates are a particularly appropriate taxon for such a study in Amazonia. First, primates form a natural semantic domain, populated with discrete terms in any language, yet small enough to render a large comparative study feasible. The species are easy to

**Table 11.5** Lexical adaptation of the dialects of Lokono, Kari'na, and Warao. Etymological codes: likely retention (R), semantic shift (S), lexical borrowing (B), lexical innovation (I), deletion (D)

| | Lokono (MO) | Kari'na MO | Warao MO | Lokono (SU) | Kari'na (SU) | Kari'na (VN) | Warao (VN) |
|---|---|---|---|---|---|---|---|
| *A. macconnelli* | R + S? | R + S? | R | R + S? | R + S? | R + S? | R |
| *C. olivaceus* | R + S? | R | R/B | R + S? | R | R | R/B |
| *P. flavus* | I | R | – | I | B | – | R |
| *P. pithecia* | R/B | B | B | R/B | B | – | B |
| *A. paniscus* | B | B | B | I | B | – | – |
| *S. sciureus* | I | R | B | I | R | D | – |
| *S. midas* | – | – | – | R + S | B | – | – |
| *S. apella* | D | – | – | R | R + S? | – | – |
| *C. Chiropotes* | – | – | – | R/B | B | B | – |

recognize and culturally salient, hence a likely target for lexicographers and ethnographers, assuring the availability of data. They are found throughout the continent; however, their ranges are determined by large rivers creating areas with contrastive distributions, as opposed to more widespread animals, allowing to zoom in on the homelands of protolanguages. Based on the presented data, it can be concluded, for instance, that the homeland of Proto-Kari'na should be within the range of the common squirrel monkey (*S. sciureus*) and the Guianan weeper capuchin (*C. olivaceus*), the terms for which are likely retentions without semantic shifts, and outside the range of the white-faced saki (*P. pithecia*), Guianan spider monkey (*A. paniscus*), and the bearded saki (*Ch. chiropotes*), the names of which are borrowings in Kari'na dialects. When plotted, these distributions imply two potential homelands. For such analyses to be reliable, however, attention must be paid to the dialectal variation, reliable etymologies based on larger language samples, and definite species distribution. Close collaboration between linguists and primatologist is thus of mutual interest to advance such research.

The observed cultural practices reveal in turn a set of intertwined motifs at the intersection of language, medicine, beliefs, arts, crafts, oral tradition, subsistence, time-keeping, and weather forecasting. There are noticeable cases of areal cultural convergence, some of which are, more strongly put, cases of cultural borrowing (Table 11.6). Importantly, cultural borrowings do not map onto linguistic borrowings. Highest cultural convergence in fact appears for species whose names are never borrowed in the sample (i.e., *A. macconnelli*). It merits a mention too that the practices are clearly disappearing, most likely due to acculturation, a factor mentioned by the consultants themselves, and reflected in the quantitative differences between the consultants' responses in the three communities and the comparison with historical sources which list a number of other culturally important uses of nonhuman primates. Finally, tracing the linguistic and cultural aspects of ethnoprimatological knowledge through time may in the future turn out to be of interest to conservation efforts. Terms such as *kwata* for the Guianan spider monkey on the Moruca may be indicative of a once larger range of the species, informing environmental research and policies aimed at the preservation of primate diversity in Amazonia.

**Table 11.6** Shared cultural practices involving primates on the Moruca and their possible origin

| Shared practices | Possible origin |
|---|---|
| Call used as alarm | – |
| Skin used to make ornaments | – |
| Call used for weather forecasting | – |
| Young animal kept as pet | – |
| Ludic dances and songs | – |
| Hair used to chase evil spirits away | – |
| Skin used to make a drum | Warao |
| Meat considered a delicacy | Lokono |
| Medicine for whooping cough | Lokono or Kari'na |
| Folklore tradition of *Alouatta's* cough | Lokono or Kari'na |

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