Chapter 10
The Ethnoprimatology of the Howler Monkeys (*Alouatta* spp.): From Past to Present

Bernardo Urbani and Loretta A. Cormier

Abstract This chapter reviews the interface between humans and howler monkeys based on evidence from the archaeological record and the ethnography of contemporary indigenous societies. The record of howler monkeys interconnections with humans may be traced back to the Pre-Hispanic period. Data suggest that Mesoamerican civilizations such as the Mayans and Aztecs interacted with howlers. Also, members of societies from northern South America established relationships with howler monkeys before the Contact period. Among current indigenous societies, howlers are not only eaten, but also figure in mythic, sacred, and social symbologies. As large-sized atelines, howler monkeys are among the preferred primate prey for a number of cultures in the tropical Americas. However, some groups avoid them as prey. Cultural taboos on howlers as food are often linked to magical contagion whereby ingestion of howlers is believed to pass on their undesirable traits, such as lethargy. In addition, due to other behavioral features, such as vocalizations and ideas of human similarity, howler monkeys are common characters in the cosmologies of contemporary indigenous societies. For example, in native mythologies of lowland South America, the creation of howlers is often related to human body transformation. Thus, it can be argued that howler monkeys are/were subjects of different social representations among the native societies of the Neotropics.

Resumen Este capítulo revisa la interface entre humanos y monos aulladores basado en la evidencia arqueológica y la etnografía sobre sociedades indígenas contemporáneas. La evidencia de interconexiones entre monos aulladores y humanos puede retrotraerse hasta el período prehispánico. Los datos sugieren que civilizaciones mesoamericanas como los Mayas y Aztecas interactuaron con araguatos. Igualmente miembros de sociedades del norte de Suramérica establecieron relaciones con

B. Urbani (✉)
Centro de Antropología, Instituto Venezolano de Investigaciones Científicas,
Apartado 66.755, Caracas 1061-A, Venezuela
e-mail: bernardourbani@yahoo.com

L.A. Cormier
Department of Anthropology, University of Alabama at Birmingham,
338 Ullman Building, 1401 University Boulevard, Birmingham, AL 35294, USA
e-mail: lcormier@uab.edu

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monos aulladores antes del período de contacto. En las sociedades indígenas actuales, los aulladores no son sólo consumidos, sino también aparecen en simbologías míticas, sagradas y sociales. Al ser primates de gran tamaño, los araguatos están entre los primates preferidos como presas por parte de varias culturas en la América tropical. Sin embargo, algunos grupos humanos los evitan como presas de cacería, en tanto que se considera tabú cultural la ingesta de monos aulladores como alimento, al asociarse regularmente con el contagio mágico de atributos no deseados como el letargo. Adicionalmente, debido a sus características comportamentales como la vocalización, así como las ideas en torno a su similitud con los humanos, los monos aulladores son personajes comunes en las cosmologías contemporáneas de las sociedades indígenas. En este sentido, por ejemplo, en mitologías de las tierras bajas de Suramérica, la creación del araguato habitualmente se relaciona con la transformación del cuerpo humano. En resumen, se puede sugerir que los monos aulladores son y fueron sujetos para ser representados socialmente de forma diferencial por las sociedades originarias del Neotrópico.

Keywords Human-nonhuman primate interaction • Platyrrhine • Mesoamerica • Lowland South America • Neotropics

10.1 Introduction

In 1998, L. Sponsel introduced the term "ethnoprimatology" as an intersection between the biological and cultural subfields of anthropology. Sponsel (1997) made a strong case that nonhuman primates could be studied using a multidisciplinary approach combining methods and theory of ethnography and primatology. In doing so, he introduced a number of new lines of research in ethnoprimatology. Among them, predation on primates was highlighted as a kind of human-nonhuman primate interaction that must be studied in detail, since it has been long neglected in the anthropological literature. In addition, Sponsel (1997) advocated the idea that humans and nonhuman primates are symbiotically linked in occupying the same ecological niche. In this sense, humans and nonhuman primates are closely related because they compete for resources, share successional landscapes, and exchange and allocate similar diseases (Sponsel 1997). This integrative view of nature and primates in general—including humans—serves to broaden our views on nature conservation, and nature as a part of the human realm.

Understanding the natural world through a folk biological perspective presents a challenging task today (Medin and Atran 1999). Such comprehensive study not only helps to elucidate how our world—including its plants and animals—is constructed, but also shows its repercussions in policy-making and public concerns (Medin and Atran 1999). In this dichotomous dialogue, values about nature and current discourse about the use of nature are in constant movement (Atran and Medin 2008). As summarized by Sanga (2004), the knowledge and use of nature is dynamic. For instance, in South America, the Amazon landscape appears to be a

construction of natural events and anthropogenic use of the space based on political and sociocultural decisions (Rival 2006). However, for example, cultural anthropologists often lump all nonhuman primates into the category of "monkey," failing to understand differences in indigenous perceptions of primate species and also failing to recognize significant differences in wild primate social behavior and ecological adaptation (Cormier and Urbani 2008). As in the case of spider monkeys, which we addressed in a previous chapter, the availability of data on perceptions and interactions with howlers and other Neotropical primates by various societies is lacking or is limited in the literature (Cormier and Urbani 2008). As both authors stressed, ethnoprimatology is intended to improve understanding of the dynamic interactions between different cultures and different primate taxa. Thus, here we suggest that the relevance of ethnoprimatological research lies in the possibility of understanding how primates are culturally constructed, the dynamics of such social constructions, and the "universals" and variations in the dyadic interface between human and nonhuman primates in time and space.

This chapter parallels a previous review on the ethnoprimatology of spider monkeys (*Ateles* spp.) presented by Cormier and Urbani (2008). In the chapter presented here, we focus on the ethnoprimatology of howler monkeys (*Alouatta* spp.). Both taxa, spider and howler monkeys, are among the most widely distributed of the Neotropical primates, and consequently, interact with various indigenous societies in Mesoamerica and South America, from past to present. We concentrate and integrate three ethnoprimatological issues: the use and perception on howlers during the Pre-Columbian period, the procurement of howlers as food—and avoidance as food taboos—and the role of howlers in the symbologies, cosmologies, and mythologies of Amerindian societies.

10.2 Howler Monkeys in the Pre-Columbian Period: Looking at the Archaeological Record

As found for spider monkeys, evidence of atelines, and Neotropical primates in general, is relatively rare in the archeological record (Cormier and Urbani 2008). As we discussed previously, there are a number of reasons why so few wild primate remains have been found. One possible explanation is that wild primates may have been disarticulated where they were hunted, and only later brought to the indigenous villages. Another possibility is that terrestrial mammals may have been preferred over primates, and consequently, monkeys do not appear at the same frequency as other vertebrates such as ungulates. Bruner and Cucina (2005) also proposed that the low representation of howlers in the archaeological record could have been due to their loud vocalizations, which may have led to negative attitudes and taboos in Pre-contact human populations. Further, they suggest this may offer a possible explanation for their limited iconographic depiction in the past. In addition, it has been argued that the current distribution of Neotropical primates, and howler monkeys in particular, may have been induced in part by the interaction with humans

during the Pre-Hispanic period (Hershkovitz 1984; Baker 1992; Sponsel 1997; Urbani 2005). In this section, we provide information on how howler monkeys were perceived and used before European contact.

One line of biological evidence that may suggest a long history of close interaction between humans and howler monkeys is that howlers are the only reported natural host of lice in the Neotropics. *Pediculus humanus* is a parasite of *Homo sapiens* globally. Two other louse species, *P. schaeffi* infects chimpanzees in tropical Africa and *P. mjoebergi* howler monkeys, and possibly other primates, in the New World (Hopkins 1949; Kowalewski and Gillespie 2009). This may be suggestive of a long and extensive human–howler interaction with lice (*Pediculus* sp.), probably dating from the earliest times of human colonization in the tropical Americas (M. Kowalewski, personal communication).

Among the Aztecs of central Mexico, a tooth of *Alouatta palliata* has been found in the Neighborhood of the Merchants of the Pre-Hispanic city of Teotihuacán (Valadez-Azúa and Childs-Rattray 1993). This zooarchaeological remain dated from the Xolalpan Period, 400–650 years AD was recovered in a rubbish dump. Inhabitants of eastern coastal origin in the Gulf of Mexico occupied this part of the city. Valadez-Azúa and Childs-Rattray (1993) suggested that primates and other animals were trafficked from this region (today Veracruz State) to the central valley of Mexico. Also in Mesoamerica, *Hun Batz*, the howler monkey god in the Mayan book *Popul Vuh*, is frequently represented in sacred pottery (Coe 1977, 1978; Anonymous 1994; Bruner and Cucina 2005). As described by Braakhuis (1987), *Hun Batz* has multiple roles. This deity is represented in Mayan vases as a diviner with a pivotal role in the Mayan calendar. In addition, *Hun Batz* has other sacred functions. In conjunction with the god *Hun Chuen* (the spider monkey deity), they create humankind and serve as artisan creators (Braakhuis 1987; Anonymous 1994).

Preuss (1901) provided the earliest work that covered the role of primates and primate representation in pre-Hispanic Mesoamerica material culture (for El Salvador, see also Felten 1961 and Haberland 1961). However, it was not until the research of South (2005) when a review of the representation of primates in Pre-Columbian Maya material culture was summarized. Using the Maya Vase Database, she identified a series of physical attributes in the iconography of Mesoamerican primates in order to interpret which monkey corresponded to each representation. Key attributes used were limb proportions, skull and face configuration, tail features and uses, positional repertoire, hand use through opposable thumb, and pelage colors and patterns. It was found that the majority of the primates depicted were spider monkeys, followed by howler monkeys (South 2005). In most cases when howlers were represented, they were shown in scribal postures, while spider monkeys appeared more like performers of rituals.

In South America, Urbani and Gil (2001) presented information about howler monkey remains in a speleological location in northeastern Venezuela. The formation consisted of dislocated bones associated with stone tools. Possible interpretations on how these howlers were used are still an open question since the bones were not burned and no evidence of fire was found. Thus, the howler monkeys may have been used not only as food, but possibly as pets, or have had a cosmological meaning

for the people that inhabited this area. Urbani and Gil (2001) delineated ethnohistorical information that seems to point out the cosmological significance of primates among indigenous societies in this part of Venezuela; however, no final conclusion can be determined. In a work in progress about the interaction of Pre-Hispanic societies of northern Venezuela with nonhuman primates, B. Urbani (unpublished information) found that howler monkeys were deposited in archaeological sites. In Los Roques Archipelago, north of the central Venezuelan mainland, a howler monkey cranium was found in an archaeological site associated with other mammals (Antczak and Antczak 2006). Certainly this primate was brought from the continent since these monkeys are not part of the insular fauna. In all cases, howler remains belonged to *Alouatta arctoidea*, and are associated with deposits of Pre-Hispanic societies (B. Urbani, unpublished information).

10.3 Howler Monkeys as Food: An Ethnographic Exploration

Accounts on the use of howlers and other monkeys were recorded in Spanish documents from the earliest time of the Contact period. For example, the son of Cristóbal Colón, Hernando Colón (1488–1539), provided a description of his father's arrival to the island of Trinidad, 4 days before his first landing in continental South America in Venezuela:

> "en una punta que llamó de la Galea… Allí encontraron también muchas huellas de animales que parecían ser cabras, y también los huesos de uno; pero, como la cabeza no tenía cuernos, creyeron que sería algún gato paúl, o mono; después supieron que lo era, por los muchos gato paúles que vieron en Paria. Aquel mismo día, que fue el primero de Agosto, navegando entre cabo de la Galea y el de la Playa, sobre la mano derecha, hacia el Sur, vieron la tierra firme…" [in the point he named Galea (currently known as Galeota Point, southeastern Trinidad)… They found many animal footprints that looked like goats, and also bones from one, but, since the head did not have horns, they believed it was a *gato paúl*, or monkey, later they knew that it was, since they saw many *gatos paúles* in Paria (Peninsula in Venezuela). That same day, August first (1498), sealing between Cape Galea and Cape Playa, at the right hand, to the South, they saw *terra firme*…] (H. Colón 1932:132).

This report not only represents the first account of a Neotropical primate, but also appears to specifically refer to howlers, since the term *gatos paúles* tended to be used for this primate taxon in early accounts of Neotropical monkeys (Urbani 1999, 2011). Moreover, it also likely represents the first report on the use of this primate genus (*Alouatta macconelli*) by Amerindians. Close to the Island of Trinidad, in 1759, the Franciscan priest Antonio Caulín (1719–1802) wrote his *Historia Choro-Graphica*, *Natural y Evangelica de la Nueva Andalucía*, where he referred to the local use of howler monkeys in northeastern Venezuela. In his chapter about the animals of the region and their "properties," he wrote,

> Araguáto. En los montes fértiles y frondosos habitan comúnmente estos animales, que se pueden contar en la clase de Monos, de color roxo, y la magnitud de un Perro podenco;

> tiene barba crecida como los Machos de Cabrío; y sus buches son muy medicinales para los que adolecen de asma, y otros afectos del pecho, bebiendo el agua, que ha estado en infusión dentro de ellos [Howlers. In the fertile and exuberant forests is where commonly these animals inhabit, they may be counted as kind of monkeys, of reddish color, and the size of a Dog (referring to a greyhound-like dog); they have a grown beard as in Male Goats; and their throats (referring to the hyoids) are of very medicinal value for those that suffer from asthma and other illnesses of the chest, by drinking the water, that remains inside it, as an infusion] (Caulín 1966:75–76)

Despite these early reports, there is currently limited ethnographic research on Amerindian perception and uses of howler monkeys. In this section, we present data on the use of howlers as food, as well as food taboos.

Souza-Mazurek et al. (2000) reported that among the Waimiri-Atroari in northern Brazil, *Alouatta macconnelli* is the second preferred primate species. The authors calculated that from 99 hunted howlers recorded in their study, they provide 611.8 kg of meat. In addition, they found that the sex ratio of howler corpses indicated that males were preferred over females. The Waimiri-Atroari organize hunting parties on boat along the rivers of the *igapó* areas of their indigenous territory during the wet season for the sole purpose of hunting howler monkeys. This area is the primary part of the forest the howlers inhabit, where they can also be easily observed during hunting. Similarly, the Brazilian Yanomami rank howler monkeys as the second preferred primate prey in both "traditional" and "acculturated" villages (Saffirio and Scaglion 1982). In Venezuela, Hames (1979) found that the Yanomami also have howlers as the second preferred primate prey, while it ranked fourth, among the Ye'kuana during a 216-day study. Actually, howlers occupied the twelfth position among all mammalian prey of the Ye'kuana, providing 87.45 kg of meat (Hames 1979).

In Suriname, Mittermeier (1991) reported that Caribs and Tirio largely selected primates as their game source. For the Tirio, howler monkeys ranked first as both the most hunted monkey and the most hunted mammal. The same pattern was found in the Tirio, where howlers represented 65 % of primate remains in their kitchen. Among Carib-speakers in Suriname, capuchins were the most preferred primate species with howlers and spider monkeys ranking after. *Alouatta macconnelli* and *Chiropotes satanas* were both reported to be consumed by all interviewees that had eaten monkeys. However, howlers were not considered their favorite primate species, positioned after *Sapajus apella*, *Pithecia pithecia*, and *Ateles paniscus*. Mittermeier (1991) reported that howler infestation with botflies and their strong smell may serve as a deterrent to howler consumption. In addition, the use of hyoids was reported to have medicinal value.

Among the Murui (Witoto) of the Amazon of Colombia, Townsend and Ramírez (1995) indicated that red howlers (*Alouatta seniculus*) are folivorous/frugivorous and are known to feed on *achiote* (*Bixa* sp.) plants as well as earth. The Murui also reported that howlers prefer to travel in liana forests. Also in the Colombian Amazon, Parathian and Maldonado (2010) found that in the villages of San Martín and Mocagua, inhabited by a majority of Tikuna Amerindians, howlers ranked as the second most harvested primate species, after *Aotus* spp., a primate used mainly as pet. In relation to the consumption of primate meat, large-bodied monkeys were preferred. In this category, howlers appeared to be harvested more than woolly monkeys.

The Achuar of Ecuador hunt howler monkeys with shotguns and dogs (Descola 1996). Likewise, the Ecuadorian Siona-Secoya also hunt howlers (Vickers 1980). Vickers calculated an estimated harvest rate of 56 howler monkeys per year, ranking them as sixth in vertebrate game meat. The author also predicted that the probability of finding a howler monkey in a single hunting day is only ~3.7 % during a 6-year period, resulting in among the lowest time effort for all mammalian game. Similarly, according to Harner (1973), howler monkeys are a significant game source for the "Jívaro," and are found by hunting parties that use blowguns with poisoned darts.

In the market of Iquitos in the Peruvian Amazon, Castro et al. (1975) found that, during a period of 7 months, howlers represented the second most sold primate meat. Male howlers appeared to be preferred, most likely due to their larger size. Total weight of howler meat distributed per month reached up to 200 kg, with an estimate of 1.1 tons during the 7-month study period. Also in Peru, Eakin et al. (1980) indicated that for the Shipibo-Conibo, atelids, including howlers, are highly valued prey. Once the adults are hunted, they tend to keep the offspring as pets. According to Campos (1977), among the Shipibo, howlers and other monkeys are hunted with shotguns, and occasionally with blowguns and arrows. Similarly, in the Amahuaca of the Peruvian Amazon howlers are the second ranked mammal game, after spider monkeys, providing the majority of primate meat (Carneiro 1970). Amahuaca hunt primates and other mammals solitary with bow and arrows. Finally, howlers ranked fourth in terms of mammal prey, among the Huambisa of Peru (Berlin and Berlin 1983).

For the Piro and Machiguenga of Peru, Alvard (1993) indicated that howler monkeys are found by hunting parties, and rank as the fourth most searched prey, having a high return value in term of calories per hour of pursuit. During the study, howlers were spotted nine times, and at all instances, they were pursued with shotguns, accounting for an estimated time of 3.8 h per hunt. Assuming a total of 1,300 cal/kg of howler meat, then a total of 85,020 cal from howler meat may have been consumed during the study period. Alvard and Kaplan (1991) pointed out that during hunting, howlers are located by their loud vocalizations. These authors found a marked bias towards male individuals over females and adults over juveniles (Alvard and Kaplan 1991).

Shepard (2002) reported that *Alouatta* is the most abundant primate in the Matsigenka land. However, it is not the preferred one, since woolly and spider monkeys were selected in a 10:1 higher ratio than howlers, and capuchins twice as much as howlers. Howlers are not considered as tasty as the other frugivorous atelines (Shepard 2002). Additionally, the Matsigenka perceive howlers as carriers of spirits since they are considered shamans (*seripigari*) due to their conspicuous vocalization. Voss and Fleck (2011) indicated that the Peruvian Matses identify the phenotypically different *Alouatta juara*, which mainly inhabit the primary forests and swamps with *Mauritia* palms. In the majority of cases, howlers are located by their vocalizations, but the Matses do not imitate their howling. Once found, howlers tend to stay quiet, and hunters may climb the trees and use shotguns or bows and arrows to hunt them. On a few occasions, howlers are spotted and hunted in mineral licks.

In Brazil, the Araweté's hunting for howlers involves ritual behavior, and shamans consider themselves as relatives of the monkeys (Viveiros de Castro 1992). Thus, howlers should be hunted by those shamans, who also kill the spirits (*ha'o we*) of the monkeys prior to consumption. Subsequently, the monkeys are mounted in a rack and smoked, and then sliced and boiled at home. Only then may members of the community eat pieces of howler meat. Setz (1991) reported the consumption of two species of howler monkeys among the Nambiquará of Brazilian border with Bolivia. However, in the Nambiquara villages, a domesticated young adult howler was kept as a pet during the study period, and consequently not killed. When the Sirionó of eastern Bolivia hunt howlers (*téndi*), a single member of the hunting party locates a male individual as the initial target (Holmberg 1985 [1950]). Subsequently, females tend to rush together and then are killed one by one by the same hunter or group of hunters.

The Kalapalo of the Upper Xingu Basin (Brazil) are not habitual hunters and practice it in parallel to the performance of other activities such as fishing (Basso 1973). However, they do organize hunting activities specifically for howler monkeys as part of a ceremony. They use bow and arrows to obtain avian prey as well as *Alouatta* (Basso 1973), but shotguns have also been introduced to the area. The Ka'apor, in the eastern Pre-Amazonian region, also hunt howlers (Baleé 1985). Howler monkeys ranked tenth among vertebrates that were obtained in two sites along the Turiaçu River in Brazil, and fifth in term of weight of all obtained prey (Baleé 1985). Interestingly, howler monkeys ranked first among mammals, with respect to allocated hunting time (an average of 73 min). In the same region, among the Guajá, de Queiroz and Kipnis (1997) found that in the osteological dump of the studied settlement, howler monkeys ranked as the first primate species, in both the outer and excavated parts of the dump. Cormier (2003) also supports these findings, with howlers being the most utilized animal prey during the wet season.

The Lacandón of Chiapas in Mexico used to hunt howler monkeys with a special type of barbed edged arrow (*flecha barbada*) until shotguns were introduced (Baer and Merrifield 1972). During hunting, the Lacandon located howlers by their vocalizations. Thompson (1930) indicated that howler monkeys (*baaɔ*) are hunted by the Maya in Belize. Shotgun hunting was practiced after working in the plantations. In southern Mesoamerica, the Teribe of Panama include howlers (*Alouatta palliata*) as one of their preferred prey (Reverte 1967). They organize hunting rounds; however, they normally engage in opportunistic shotgun hunting while gardening in their fields. Among the Guaymi of Costa Rica, *Alouatta palliata* is the least hunted primate species, since its meat is not highly valued (González-Kirchner and Sainz de la Maza 1998). In addition, half of the Guaymi (54 %) perceived howlers as bad omen. In order to avoid bad luck, they are killed when they are found near a household. However, this Amerindian group also considers this primate to have medicinal value, as reported by 93 % of the interviewees. González-Kirchner and Sainz de la Maza 1998) indicated that the Guaymi use howler fat as skin "cream," and when diluted with hot water, as a beverage serves to cure diseases. In addition, howlers rarely raid crops and *Alouatta palliata* is not used as pet, because of its proclivity to die in captivity.

Urbani (2005) has compiled a wide range of ethnographic data from 56 Amerindian societies that hunt Neotropical primates. Howlers were reported to be hunted in 55 % (31/56) of these indigenous groups (Table 10.1). Considering this dataset, the results indicate that this primate taxon ranks as the most commonly hunted primate in the Neotropics. In addition, howlers were chosen as part of the top five preferred game in 71 % (10/14) of the cases where the total number of prey was reported. In geographical terms, hunting *Alouatta* was found to be distributed evenly, with 45 % (14/31) of the study sites, where howlers were reported to be hunted, located in Mesoamerica, the Pantanal and the Guianan forests, and the remaining 55 % being Amazonian.

Howler monkeys are subject to a wide range of food restrictions and preferences that vary considerably among cultures. Explanations for food choices and taboos range from foraging theory (e.g., Alvard et al. 1995) to "primitive" environmental conservation (McDonald 1977; Ross 1978). However, ecologically deterministic models are not sufficient to explain hunting behavior towards primates. One illustrative example is that howler monkeys are the most abundant mammal in Manu National Park, but the Matsigenka take the similar-sized woolly and spider monkeys at ten times the rate of howler monkeys (Shepard 2002). Broadly, primates cannot be considered to be merely a source of food. Cross-culturally, the physical and behavioral similarities between humans and wild primates often attribute them a special role in the symbolic life of a culture. On the other hand, howlers are not always described as preferred mammal game. In multiple Amerindian societies, howler meat is avoided for reasons including magical contagion, ritual couvade, or simply due to taste preferences. For instance, the Barí of Venezuela view red howler monkeys as similar to three-toed sloths (*Bradypus variegatus*) in terms of lethargy and lack of cleverness, and so avoid these primates to prevent acquiring their negative qualities (Lizarralde 2002). If hunted, the Barí locate them by listening to their calls, and then tend to kill the entire group. Howler heads are severed in the forest, since it is believed that their brains may produce sickness, and more specifically madness. In addition, howlers are not kept as pets by the Barí (Lizarralde 2002). Taboos on howlers are relatively common, and they are often considered as bad omens. It is believed that they may transmit diseases and lethargy. Also in the Amazon, Shepard (2002) reported that the Peruvian Matsigenka have taboos on children eating howlers, since it is believed that these monkeys may transmit their lethargy.

Several South American groups avoid all species of monkeys. For example, among the Kagwahív (Parintintin), monkeys are kept as pets, but are avoided as food, due to their similarity to human beings (Kracke 1978). On the other hand, the Kalapalo, who consider most land animals disgusting, do eat monkeys, because they are classified as "like-human-beings" (Basso 1973:14–15). A recent review of the literature on primate taboos, among indigenous Amazonian peoples, identified *Alouatta* as the most frequently prohibited taxon (Cormier 2006). Such taboos are not uniform, meaning that in some societies howlers are food items. Among the Parakanã, howlers are the only primate genus that is considered to be edible (Fausto 2012). The Guajá also prefer howler monkeys over the six other primate species in

Table 10.1 Indigenous societies that hunt howler monkeys (*Alouatta* spp.) for subsistence

Human society	*Alouatta*[1,2]	Indigenous name	Study site	References
Aché	5/16 years; 17th	NA	Mbaracayu Reserve, Paraguay	Hill and Padwe (2000)
Aguaruna	NA/10 months; NA	NA	Cenepa-Santiago Rivers, Amazonas, Peru	Berlin and Berlin (1983)
Amahuca	NA/"years"; second	NA	Ucayali, Amazonas, Peru	Carneiro (1970)
Ashuar	NA/"years"; NA	NA	Pastaza River, Amazonas, Ecuador	Descola (1996)
Awareté	NA/1 year; NA	*ačiči*	Ipixuna River, Amazonas, Brazil	Viveiros de Castros (1992)
Colombian Barí	8/4 months; NA	NA	Southwestern Sierra de Perijá, Colombia	Beckerman (1980)
Venezuelan Barí	36/12 months; NA	*borou*, *kamas-kougda*	Southeastern Sierra de Perijá, Venezuela	Lizarralde (2002)
Guajá	NA/15 months; NA	*wari*	Maranhão, Amazonas, Brazil	Cormier (2003)
Guaymi	NA/11 months; second	NA	Costa Rica	González-Kirchner and Sainz de la Maza (1998)
Huambisa	NA/10 months; NA	*yakúm*	Cenepa-Santiago Rivers, Amazonia, Peru	Berlin and Berlin (1983)
Huaorani	85/11 months; fourth	NA	Quehueiri-ono, Shiripuno River, Napo, Ecuador	Mena et al. (2000)
Ka'apor	7/105 days; tenth	NA	Turiaçu River, Maranhão, Amazonas, Brazil	Baleé (1985)
Lacandón	NA/15 months; NA	*ba'ts*	Norte del Najá, Chiapas, Mexico	Baer and Merrifield (1972)
Matsigenka	1/1 year; NA	NA	Manu Biosphere Reserve, Peru	Shepard (2002)
Belizean Maya	1/"years; NA	NA	San Antonio, Toledo District, Belize	Thompson (1930)
Mayangna	1/34 days; fifth	NA	Amak, Bosawas Reserve, Nicaragua	Merriam (1998)
Nambiquará	NA/148 days; NA	*elhu*, *ilho*	Guapore-Chapada Parecis, Matto Grosso, Brazil	Setz (1991)
Paaca Nova	NA/NA; NA	NA	Guaporé River, Rondônia, Brazil	von Graeve (1989)
Piro	13/10 months; fifth	NA	Manu River, Peru	Alvard and Kaplan (1991), /Alvard (1993, 1995)

(continued)

Table 10.1 (continued)

Human society	*Alouatta*[1,2]	Indigenous name	Study site	References
Shipibo	NA/16 months; NA	NA	Pisqui River, Amazonas, Peru	Campos (1977)
Shipibo-Conibo	NA/>5 years; NA	*roó*	Ucayali River, Amazonas, Peru	Eakin et al. (1980)
Siona-Secoya	56/1 years; sixth	NA	San Pablo de Shushufindi, Aguarico, Amazonas, Ecuador	Vickers (1980)
Surinam's Carib	2/15 months; fiurth	NA	Bigi Poika, Surinam	Mittermeier (1991)
Suya	NA/2 years; NA	*kupüdü*	Suya-Missu Rivers, Mato Grosso, Brazil	Seeger (1981)
Teribe	NA/NA; NA	*bip*	Teribe River, Bocas del Toro, Panama	Reverte (1967)
Tirio	56/15 months; second	NA	Sipaliwini-Pouso Tirio area, Surinam	Mittermeier (1991)
Waimiri-Atroari	99/13 months; fifth	*arawyta*	Alalau River-BR 174, Roraima-Amazonas., Brazil	Souza-Mazurek et al. (2000)
Brazilian Yanomamö	5/5 months; fourth	*iro*	Catrimani River, Roraima-Amazonas, Brazil	Saffirio and Scaglion (1982)
Venezuelan Yanomamö	2/217 days; second	NA	Toropo-teri, Padamo River, Amazonas, Venezuela	Hames (1979)
Ye'kwana	11/216 days; sixth	NA	Toki, Padamo River, Amazonas, Venezuela	Hames (1979)

NA Not available
[1]Number of *Ateles* hunted/length of the ethnographic study
[2]Rank number of this primate species in relation to all game mammal species hunted by each of the listed indigenous societies

their area (Cormier 2003). The Matsigenka like howlers the least of the primates in their area, reporting that they do not taste as good as other monkeys (Shepard 2002). The Cashinahua consider howlers, as well as owl monkeys and squirrel monkeys, to be inedible, but hunt capuchins and spider monkeys (Kensinger et al. 1975).

Most avoidances or taboos of howler monkeys, and primates in general, are associated with the social or ritual status of the group members, including their age/sex and reproductive status. Age/sex related restrictions can be found among the Matses and the Desana. Among the Mayoruna, children eat howler monkeys, but adults do not (Milton 1991). The Matses believe that eating howlers may cause young people to become lazy, and it is only allowed to older persons (Voss and Fleck 2011); however, they are generally avoided as prey. For the Desana, howler and owl monkeys

are prohibited to pre-adolescent boys (Milton 1991). Among the Kayapó, all monkeys are taboo for all women (McDonald 1977). The most frequent primate taboos relate to reproductive status. A number of Amazonian groups practice the couvade, which involve restrictions, often dietary, that apply to both the mother and father during pregnancy (Rivière 1974). The couvade is often linked with what is known as plural paternity or partible paternity in a number of Amazonian groups, where fetuses are created from the build-up of their father(s) semen during pregnancy; thus a child may be believed to have more than one "biological" father (see Beckerman and Valentine 2002). The purpose of the dietary restrictions is to protect the fetus and sometimes neonates and young from plant and animal foods that could potentially pass on unfavorable characteristics to the child (Metraux 1949).

In some cases, all monkeys are prohibited to parents during pregnancy, as in the Yanomami (McDonald 1977), and the Tukano (Reichel-Dolmatoff 1971, 1989). Howler monkeys are restricted specifically to several groups with the couvade. Among the Tukano of Colombia, Reichel-Dolmatoff (1971) reported that howlers are taboo as food. They are reported to "weep" and not to howl, as well as to provoke bad luck since they are considered capable of witchcraft. For the Tapirapé, capuchins may be eaten by anyone, but howlers are prohibited for women, adolescents, and the fathers of children less than 2 years old (Wagley 1977). The Sirionó have a similar restriction; howlers and owl monkeys are taboo for pregnant women, all children, and both the father and mother of a child for the first 3 days after birth (Holmberg 1985 [1950]). In the Huaorani couvade, only the heads of howler monkeys—and woolly monkeys—are prohibited (Rival 1998). In other groups, howler monkeys are hunted, but the couvade applies to other species. For example, the Wapishana hunt eight species of monkeys, including howlers, but the couvade applies only to spider monkeys (Henfrey 2002).

A few other ritual restrictions on howler monkeys have also been reported. Among the "Jivaro," howler monkeys are not to be eaten by either males or females for 2 months after crops are sown (McDonald 1977). The Sirionó believe that if one eats a young howler monkey, one's lips will turn white and anemic (Priest 1966), though, the consumption of howler meat is a taboo for pregnant women, children, and parents of recently born babies (Holmberg 1985 [1950]). The Suyá classify howlers differently from other monkeys because they are considered to have a pungent odor and are frequently forbidden to individuals undergoing any type of dietary restriction (Seeger 1981). Even so, the Suyá classify howler monkeys as edible vertebrates, but they are prohibited as food after childbirth.

10.4 Howler Monkeys in Mythology and Cosmology

Animal myths and metaphors may involve not only symbologies and cosmologies, but a culture's view of the social relationships of humans to wild primates and other species and the relationships among non-human species. Among the Yagua, monkey species are seen as related to each another, not through a Linnaean-like taxonomy,

but through kinship (Chaumeil and Chaumeil 2005). The howler monkey is considered to be the grandfather of all monkey species, with particularly strong bonds of friendship with the spider monkey and woolly monkey. The squirrel monkey is considered to be the uncle of the capuchin monkey. Among the Guajá, howler monkeys are considered to be in a patrilineal sibling relationship with both humans and bearded sakis, but bearded sakis and humans do not share the same close relationship (Cormier 2003). Cultural views of kinship may also involve non-primate species. The Guajá consider the owl monkey to be a patrilineal sibling of the kinkajou (*Potus flavus*) because both are nocturnal and both bear long, similar looking tails.

10.4.1 Transformation

In a previous work, on the ethnoprimatology of the spider monkey, we stressed contagion and transformation as two important themes that occur in the symbolic systems of Neotropical peoples and their relationship to plants and animals (Cormier and Urbani 2008). In the Amazon, Viveiros de Castro (1998, 1999) described that a frequent theme in the cosmologies of indigenous peoples is to view animals as former human beings. South American cultures, which have myths involving the transformation of various monkey species into a human being, include the Aguaruna (Brown 1984), the Barí (Lizarralde 2002), the Bororo (Wilbert and Simoneau 1983), the Desana (Reichel-Dolmatoff 1976), the Kayapo (Wilbert 1978), the Yanomaö (Wilbert and Simoneau 1990), and the Xikrin (Wilbert and Simoneau 1984). The Guajá (Cormier 2003) and the Matsigenka (Shepard 2002) also have myths involving the transformation of howler monkeys into human beings.

Transformation may link to what Viveiros de Castro (1998) has termed "perspectival multinaturalism." He describes a common Amazonian animistic view of plants and animals as sharing a common spiritual and social nature, but due to differences in bodily forms, have differing subjective perceptions. Put more simply, he describes a peccary wallowing in the mud as seeing itself as a human swinging in a hammock or a jaguar drinking blood seeing himself or herself as a human drinking manioc beer. Both transformation and perspectival multinaturalism can be seen in a Lokono (Arawak) myth involving a howler monkey (Drummond 1977). A hunter shoots a female howler monkey, roasts her, but eats only her tail. When he returns home, the howler carcass is missing and a woman is in his hammock. She becomes his wife. The wife hears other howlers in the forest and her new husband tells her that they are her uncles, drinking cassava beer. They climb a tree and drink with the "uncles," but when the uncles realize that the true identity of the wife is a howler, they abandon the husband in a tree.

A similar myth is narrated by the Mundurucu (Murphy 1958). Here, a Mundurucu man marries a howler monkey who has taken the form of a woman. She asks her husband to visit her howler relatives, but makes him promise not to laugh at them. When the howlers begin to sing, he laughs and is abandoned on a tree. When he

escapes, he kills all the howler monkeys except his wife. She later has a son, with whom she will have an incestuous relationship that will give rise to the current population of howler monkeys.

A number of myths involving transformation also serve as cautionary tales. Rival (1996) has made that argument specifically for monkeys among the Huaorani of Ecuador. Thus, many myths involve social catastrophes created when monkeys try to behave either too much like human beings or too differently from human beings. In a Matsigenka myth, the behavior of a howler monkey and a spider monkey are contrasted. *Yaniri*, the howler was once a lazy shaman who spent all his time taking ayahuasca (see below) and singing. Instead of raising his own crops, he borrowed beans from his brother-in-law *Osheto*, the spider monkey. But because he was lazy, he ate the beans rather than planting them and returned to ask *Osheto* for more beans. In anger, *Osheto* punched *Yaniri* in the throat, creating the howler's enlarged larynx.

The Sirionó also explain the howler's enlarged larynx by means of a cautionary tale (Holmberg 1985 [1950]). Here the jaguar kills the son of *Yási*, the moon and creator divinity. As *Yási* searches for the killer of his son, he comes upon *Tendí*, the howler monkey, *Erubát*, the spider monkey, and *Seáči*, the coati, who are all drinking. *Yási* was angry at them for being drunk and grabbed the howler by the neck, causing him to howl and pulling it into the shape it is today.

10.4.2 Contagion

The widespread cross-cultural belief in contagious magic has been documented since the days of the late nineteenth century cultural evolutionists in anthropology (Frazer 1911). Contagious magic suggests that once in contact with a substance, it continues to exert an effect. In a similar way, contact with a monkey is believed to be able to confer either desirable or undesirable traits, in a number of South American cultures.

The Bororo believe that eating monkeys, in general, can confer their attributes of speed and grace (Crocker 1985). The Matsigenka make a contrast between contagion with howler monkeys and capuchins (Shepard 2002). As indicated before, eating howlers can cause one to become lazy and eating capuchins can cause one to become a thief, consistent with their mythology. Somewhat similarly, the Barí make a contrast with potential contagion with howler monkeys and spider monkeys (Lizarralde 2002). The Barí value the manual dexterity of spider monkeys. They keep them as pets and wear spider monkey tooth necklaces to confer their traits. However, howler monkeys are believed to be both slow and of low intelligence. The Barí neither keep them as pets nor do they wear howler monkey tooth necklaces.

The "howling" of howler monkeys can also evoke a kind of magical contagion or associative symbolism. The Sirionó believe in a magical contagion related to the loud territorial calls of howler monkeys (Priest 1966). If a male howler monkey is eaten, it may lead to bad dreams causing one to howl at night. The Yagua also link howlers to altered states of consciousness (Chaumeil and Chaumeil 2005). Howlers

are called *ramanuji* "ayahuasca" where their loud roaring calls serve as a metonym for the hallucinations produced by the Malpighiacea vine, *Banisteriopsis caapi* (the base hallocinogenic compound of the "ayahuasca"). Somewhat similarly, howler monkeys are considered to be shamans in Matsigenka folklore and to pose spiritual hazards (Shepard 2002). Among the Parakanã, the percussive sound of bamboo striking the ground is associated with howler calls (Fausto 2012).

The Bororo believe that supernatural contact with a howler monkey involves a kind of contagion that can also transform (Crocker 1985). Thus, they have a principle of transformation that manifests in natural phenomena called *bope*. Howler monkeys are often spirit familiars for *bope*. Becoming a shaman involves being surprised in the forest by a howler monkey, which questions the individual and demands that he smokes a cigarette. The sight of a *bope* resembling a howler may also mean the imminent death of the witness or a relative.

10.4.3 Reflexivity

Reflexivity in anthropology is a means for interpreting the ways in which a group's cultural values are projected onto others. Ohnuki-Tierney (1984) defines reflexivity as the sense of distancing from the self in order that the self becomes an object of study itself. In her own work, she uses reflexivity as a means of understanding the changing use of the monkey as a metaphor in Japanese history (Ohnuki-Tierney 1984, 1987, 1990). A similar treatment can be found of the Monkey King in China (Burton 2002) and in Haraway's (1989) critique of primatologists. Such projections can occur with any number of nonhuman species, such as roosters in the Balinese cockfights (Geertz 1973) or the multi-layered symbolism of cattle among African pastoralists (Evans-Pritchard 1940; Comoroff and Comoroff 1990). However, primates are particularly amenable to reflexivity due to their similarities to humans. The Yagua use howlers as a reflexive symbol to designate both self and other (Chaumeil and Chaumeil 2005). One of the Yagua clans is called *kandaria*, "howler monkeys." However, they refer to their neighbors, the Mayoruna, with the more pejorative *kandamununũu* "wild howler monkeys."

Howlers and other monkeys sometimes appear as dream symbols. The Ese Eja of Peru have a story of a woman who associated a dream she had of a howler monkey with her new-born child with a lump on the side of his neck (Peluso 2004). Among the Achuar, dreaming of a man with a red beard means that one will be successful in hunting a howler; if one dreams of a man with a pale face, it will be a successful capuchin hunt (Descola 1989). These signs are based on homologies of the pelt colors of the howler and capuchin species of the area. In Juruna cosmology, howlers have a dream-like quality (Lima 2000). They are said to appear like phantoms and the Juruna have no desire to hunt or eat them.

The Guajá hunter-gatherers have one of the most complex symbolic systems associated with howler monkeys (Cormier 2003). Howler monkeys are the preferred game over the other six primate species in the area. Orphaned infant howlers are

raised as pets and considered to be quasi-human beings. Howler monkeys are considered to be "true" patrilineal siblings to the Guajá people, with other plants and animals considered to be matrilineal siblings. At a meta-level, the shared consanguinity of the Guajá to howler monkeys is explained by their creation myth. Howler monkeys were once human beings who were transformed into monkeys so that other humans would be able to eat and survive. Howlers are said to be like humans because they "sing," which is intrinsically the way the Guajá travel into the spirit world. Also in Guajá cosmology, the divinity *Yu* is the master hunter and controller of all howler monkeys. *Yu* is a spiritual sibling with the *yu* palm (*Astrocaryum gynacanthum*) which the Guajá identify as an important howler food. Thus, *Yu* eats howlers and howlers eat *yu*, just as humans eat former humans (howlers) in a system of symbolic cannibalism.

10.5 Discussion

Broadly speaking, far more research is available on the role of nonhuman primates as a food source than their role in the social and symbolic domains of the lives of indigenous peoples with whom they share space. In part, this is a consequence of disciplinary specialization. In anthropology, ethnographers and primatologists typically deal with quite different primary subjects of research interests. While ethnographers tend to specialize in a specific culture or linguistically-related cultures (the language family), primatologists tend to specialize in a specific species or biologically related taxon (the genus).

Consequentially, it is not uncommon to find no more specificity among ethnographers in communicating information about wild primates than terms such as "monkey," "mono," or "macaco." These terms have little scientific value to primatologists, for the Western folk category of "monkey" does not even entail differentiation between New World and Old World species. Primatological orientation towards research that seeks to expand understanding of a particular genus or species can be equally uninformative for ethnographers who are attempting holistic understandings from a particular culture's point of view. Cultural experiences are locally based and locally informed. Broad categories of inquiry such as "*Alouatta*" include meanings and interpretations from cultures as diverse as the ancient Mesoamerican Mayan state, societies in the Brazilian grassy lands, and Amazonian hunter-gatherers. M. Lizarralde (personal communication) has suggested that even within the subdiscipline of "ethnoprimatology" that has emerged over the last 15 years, research still tends to be oriented towards *ethno*-primatology, prioritizing culture and related cultures, and ethno-*primatology*, prioritizing primate species and their related genus.

In the case of howler monkeys, the ways in which they were perceived by Pre-Hispanic societies are still little known. Nevertheless, it can be argued that since humans initiated the early colonization of the tropical Americas, probable parasite exchange appeared to link *Homo* and *Alouatta* populations. Before contact, there is

limited archaeological evidence in terms of osteological remains and representations of howlers. In Mesoamerican civilizations and indigenous of South America, howlers not only appeared to play a relevant role in their cosmologies but also as food sources, and possibly, as pets.

Howlers often have a symbolic role in indigenous mythologies and cosmologies, especially among the cultures of lowland South America where the taxon is widespread. Two commonly occurring themes are magical contagion and transformation. Magical contagion influences dietary practices, particularly the ritual couvade. Monkey to human transformation is a common theme in mythology, not only with howlers, but with wild primates in general and to a lesser extent, other animals and plants. One characteristic that sets howlers apart from other wild primates are its territorial vocalizations, which link the howler with shamanistic abilities in between the material and spiritual worlds.

The contemporary ethnographical literature of Central and South American indigenous societies presents selected information on how primates, in general, and howlers in particular, are used and perceived. In the case of hunting and meat consumption, howlers rank as one of the preferred primates consumed as food. Their large size seems to be one rationale for why they are preferentially selected as game. In addition, the territorial calls of the howlers make them somewhat easier to locate in the forest, where they are hunted not only by using bows and arrows but also shotguns. On the other hand, due to its predominant resting behavior, howlers are sometimes tabooed or avoided among different Amerindian societies. Here, it is believed that the negative attribute of lethargy may be transmitted if howlers are eaten. Certain classes of persons in indigenous communities, such as elders and shamans, are in some cases the only persons allowed to consume howlers. This human–nonhuman primate relationship reveals an intricate set of values and beliefs around phenotypically similar howlers that permit them to be represented differently by various societies across their wide distributional range in the tropical Americas.

As indicated by Cormier and Urbani (2008), the role of Neotropical primates, and atelines, as pets needs to be further studied. The limited information that refers to howlers as pets tends to indicate that they are infrequently kept in Amerindian villages. This may not so much represent a preference, but may reflect the difficulty of keeping these primates in captivity because of their highly folivorous diet. In addition, as noted by Cormier and Urbani (2008), Amerindians possess an extremely broad understanding of the ecology and behavior of primates. However, relatively few ethnographic reports provide information on the ethnoecology of Neotropical primates, or the knowledge of indigenous societies on the biology and behavioral ecology of the primates with whom they share their spaces (but see Voss and Fleck 2011; Cormier 2002, 2003; Lizarralde 2002). Even though, despite of these limitations, Neotropical ethnoprimatology is a cultural and biological cross-disciplinary area with continued potential for growth (e.g., Parathian and Maldonado 2010).

Finally, as indicated by Ford (2001), at the turn of the new millennium, ethnobiological research is at a "crossroad." In this sense, ethnobiology is confronting multiple challenges in a fast changing world. Ethnoprimatology is not exempt to those

challenges, in which biological, ecological, cultural, philosophical, sociopolitical, historical, religious, and even linguistic realms as well as global, national, regional, community, and family economies impact on multinational and domestic realities that modulate contemporaneous indigenous uses, interactions and perceptions of nonhuman primates.

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