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SPECIAL FEATURE: ORIGINAL ARTICLE

French-Japanese collaborations in primatology

Territorial and land-use rights perspectives on human-chimpanzee-elephant coexistence in West Africa (Guinea, Guinea-Bissau, Senegal, nineteenth to twenty-first centuries)

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Abstract The first part of this article compares the distribution of chimpanzee and elephant populations in reaction to human territorial dynamics of West African trade in parts of nineteenth century Guinea, Guinea-Bissau and Senegal. It answers for this specific region the question of whether present-day situations of close chimpanzee-human spatial proximity are stable or only temporary phenomena in long-term processes of environmental change, and shows that conservation policies centred on either of these two "flagship" species carry radically different ecological, political and territorial implications. The second part shifts to local-level perspectives on human-chimpanzee relationships, emphasizing the land rights contentions and misunderstandings created by the implementation of protected areas at Bossou and in the Boké region of Guinea. These case studies help to look at acts of resistance and local interpretations of primate conservation policies as opportunities to reconsider what is being protected, for what purpose, as whose heritage, and to move towards new and more legitimate opportunities for the implementation of conservation policies.

Keywords Historical biogeography · Ethnography · Chimpanzee · Elephant · Territory · Land-use rights · Conservation

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Introduction

Like many other biological and ecological disciplines, relational approaches in conservation have propelled field primatology beyond the limits of parks and reserves during the last 15 years. Humans living alongside nonhuman primates (hereafter "primates") now occupy a higher position on the discipline's agenda, in an ecological perspective as well as in consideration of primates' symbolic and economic dimensions, from folk taxonomies to their uses in material culture (e.g. Wheatley 1999; Lizarralde 2002; Cormier 2003; Fuentes and Hockings 2010; Papworth et al. 2013). These policy-oriented studies favour a socio-ecosystemic approach to the integration of primatology and social sciences, documenting the interdependence of beings and resources across borders delimiting human and non-human spaces. This systemic approach is formalized though a *spatial* perspective.

The French-Japanese collaboration presented here offers a shift in perspective by dealing with the *territorial* and *land-use rights* issues involved in living side-by-side with primates and, ultimately, conserving them. The historical "anthropogeography" (versus biogeography) of Western Guinea's chimpanzee and elephant populations in the first part of this article compares their distribution in relation to human territorial dynamics of West African trade in the late nineteenth century (Leblan 2014). This study covering parts of present-day Guinea, Guinea-Bissau and Senegal answers for this specific region the question of whether situations of close chimpanzee-human spatial proximity, now closely documented by primatologists in several regions of West Africa (e.g. Pruetz 2006; Duvall 2008; Yamakoshi 2011; Hockings and Sousa 2013; Halloran et al. 2014), are stable or only temporary phenomena in long-term processes of environmental change (Junker et al.

2012). Furthermore, it questions for this same region the ecological and social relevance of designing conservation territories in the form of protected areas, with reference to policies based on these two "flagship" species' present-day distributions (Brugière et al. 2006, 2009).

The second part of this paper shifts to local-level perspectives on human-chimpanzee relationships, examining the land rights issues which contribute to shaping a diversity of meanings about animals. It compares two Guinean case studies about local understandings and appropriations of protected areas. The first one deals with an uprising in the form of a swidden preparation campaign that took place in 2002 and subsequent years at Bossou, a major site for the long-term study of chimpanzee behaviour established by Kyoto University in 1976. The inhabitants contested institutional approaches to conservation, thereby offering another approach to "reserve design", including zoning, that states the cause of the crisis and presents a solution involving specific types of land-use and land rights (Yamakoshi and Leblan 2013). The second study was done in the Boké region, questioning what it means for some inhabitants to protect animals categorized as "wild" by conservationists, as some are actually considered the tutelary beings of the land's domesticated property (Leblan and Bricka 2013). These two cases move from the ethnoecological approach (e.g. Lizarralde 2002) and the "multispecies ethnography" perspective (e.g. Malone et al. 2014) that are gaining audience in primatology, to considering stakeholder conflicts about "nature". Questioning the legitimacy and effectiveness of unilateral policies that picture inhabitants as lacking "environmental awareness", they help to look at acts of resistance to primate conservation policies as opportunities to reconsider what is being protected, for what purpose, and as whose heritage (Richards 2000; Oishi 2013; Matsuura et al. 2013; Hill 2015; Leblan in press).

Context and origin of collaboration

French anthropology has a strong tendency to "historicize" explanations of behavioural and social dynamics (Jamard 1993). "Historical", here, refers to explanations giving priority to a detailed understanding of the social and political circumstances that motivate individuals to behave in this or that way, over those that appeal to the trans-historical laws of natural selection (this, of course, is not to say that they are meaningless and not historical in their own right). On the other hand, Japanese anthropology is globally very close to various Euro-American schools (Laurent 2008). In Africanist research, in particular at Kyoto University, it shares an affinity with French anthropology for its cultural, historical and political concerns, while maintaining a keen interest in evolutionary issues. At the same time, this evolutionary perspective is remote from sociobiology and behavioural ecology, favouring a much more historical kind of ecology instead (Ichikawa 2004). This has also been a trademark of many field primatologists in Japan for decades (Sakura 2005), which stems from their training in the same university departments as ecological anthropologists (Yamagiwa 2011). This perspective has paved the way for integrating human and chimpanzee ecology in a reflective approach that deals with the political implications of studying chimpanzee behaviour in "pristine" versus "anthropogenic" environments (Yamakoshi 2002). This approach at Kyoto University's Center for African Area Studies (CAAS) echoes the research of the Humans and Primates in Perspective (HPP) team at the École des Hautes Études en Sciences Sociales (EHESS, France), which was headed by Frédéric Joulian from 2000 to 2010. During a post-doctoral stay at the CAAS (2011–2013), our modes of ethnographic, ecological and historical data articulation on the human-chimpanzee interface were compared between our respective Guinean cases, and an editorial project involving primatologists and anthropologists based in Japan and several French-speaking countries, as well as in the USA, was carried out (Leblan 2013).

Methods and main results

Historical anthropogeography of human, chimpanzee and elephant populations

This research draws upon colonial narratives by Europeans inventorying natural resources west and north of the Fouta Djallon highlands between 1880 and 1910 (Fig. 1). I obtained their observational data on chimpanzees and elephants by surveying the journal of the Société de Géographie Commerciale de Bordeaux from 1876 to 1911 and that of the Société de Géographie Commerciale de Paris from 1878 to 1918, as well as monographs published in the same period. I retained only what can be established as direct observation by the authors in order to reduce probable errors. Some were trained at the Museum of Natural History in Paris and regularly travelled in western Guinea, attesting to the reliability of their observations. A total of two authors to the west of the Fouta Djallon and one to the north observed chimpanzees, one of them in multiple locations. By contrast, the economically valuable elephants (for ivory) are quoted by three authors to the west of the Fouta Djallon and three others to the north.

These data testify to the presence of chimpanzees in Eastern Senegal (near present-day Niokolo-Koba National Park) and western Guinea at the end of the nineteenth

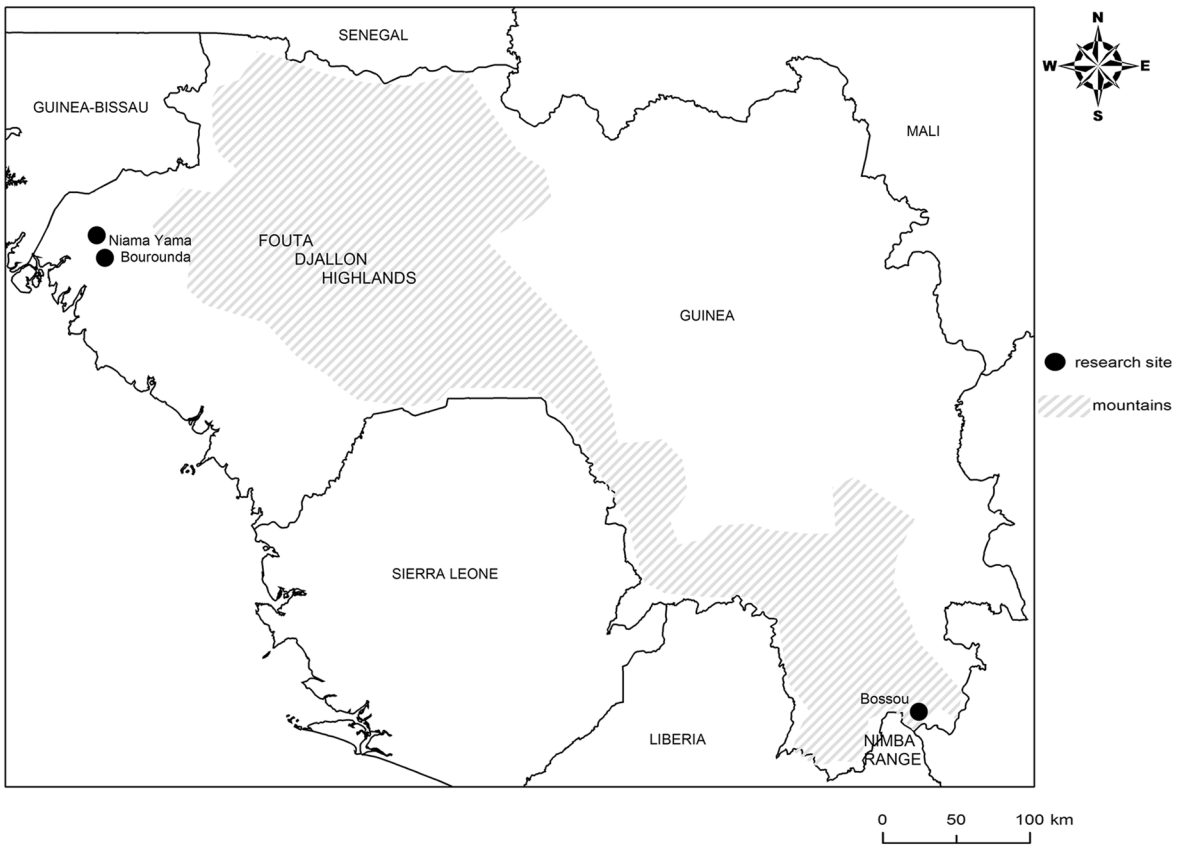

Fig. 1 Areas and research sites mentioned in the text

century, and even indicate more precisely some features of their past distribution in the latter region: they were noticeable in the forests along the upper sections of major rivers, on the slopes of lateritic plateaux, as well as in downstream sections. Peanuts, one of the main products supplied to Europeans during the second half of the nineteenth century, were intensively cultivated in the latter areas. The regional distribution and intensity of subsistence and commercial agricultures, of gathering practices (e.g. *Parkia biglobosa*, an important human and chimpanzee food in the region today, unpubl. data) and of migratory processes in war situations and under colonial rule offer enough evidence to document a sawtooth evolution of forest cover expansion *c.* 1850–1900 (Leblan 2012). This suggests that chimpanzees at times inhabited a heterogeneous environment resulting from swidden agriculture, as they do today. Later surveys at about 50-year intervals on Guinea's frontiers with Senegal and Guinea-Bissau reporting on their common presence in the vicinity of villages (Bournonville de 1967, then Casanova and Sousa 2007; Brugière et al. 2009; unpubl. data), reasonably allow us to infer a continuous chimpanzee presence in this region since the 1880s. On the other hand, elephant numbers and distribution were heavily impacted by hunting practices in the late nineteenth century. Political and economic factors (subsistence hunting, ivory trade with Europeans, intergroup conflicts) appear to be the main cause of elephant population decline. For instance, members of the 1889 French/Portuguese Guinea frontier commission reported on a Fula chief who "possessed" several villages inhabited by ivory and hide hunters (Machat 1906). This notion of possession reflects the spatial segregation between masters and captives in Fula-dominated land, the former occupying "misside", settlements characterised by the presence of a mosque, while their captives typically lived in "runnde", a separate nearby settlement. Commercial hunting was thus integrated into one of the region's dominant social organisation patterns, suggesting that it was a regular activity rather than a marginal one to the northwest of the Fouta Djallon highlands. Furthermore, contemporary ecological studies show that an increase in elephant numbers in any given region may result from movements towards uninhabited or less-farmed regions, rather than from population increase (Verschuren 1982). It is thus plausible that a process of heavy human depopulation by nineteenth century Fula slave raids and by migrations linked to the demarcation of the French/Portuguese frontier transformed this region into suitable habitat for elephants, where they

were reported as numerous, in turn attracting indigenous ivory traders. In the decade from 1900 to 1910, ivory exports from Northwestern Guinea declined while (1) those of other natural resources remained comparatively stable (Figarol 1911) (Fig. 2), and (2) the total of Guinean ivory exports increased (Roth and Douglas-Hamilton 1991), suggesting that this decline resulted from a regional reduction in elephant numbers rather than a decrease of local commercial traffic.

These results illustrate the complexity of relationships between human and large mammal populations by emphasizing species' differential adaptive capacities: while elephants decline in the face of human territorial dynamics in times of intense warfare and ivory trade, chimpanzees appear more able to thrive alongside human populations in a swidden agriculture environment for long periods, as long as they lack economic value. A recent study modelling suitable environmental conditions for African great apes asked whether the close chimpanzee-human spatial proximity observed in parts of Guinea and Sierra Leone is a stable or temporary phenomenon in long-term processes of human-induced environmental change (Junker et al. 2012). This study suggests that overall it has been stable on an arc stretching from the west to the north of the Fouta Djallon highlands, from the late nineteenth century onwards. In addition, although they often lack the spatial accuracy of GPS coordinates, these chimpanzee observations predating the creation of reserves allow us to avoid the recognized bias of using a large proportion of presence points collected inside protected areas for the modelling of suitable great ape environmental conditions (Junker et al. 2012).

Further expanding on the previous study (Leblan 2014), this research is also useful in discussing the ecological and social relevance of designing conservation territories in the form of protected areas for this specific region. A European Union conservation programme (AGIR: Programme d'Appui à la Gestion Intégrée des Ressources naturelles des Bassins du Niger et de la Gambie) delimiting protected areas on the Guinea/Guinea-Bissau border in 2000–2005 also recognized the differential adaptive capacities of chimpanzees and elephants. This led to contradictory recommendations for designing regional conservation policies. On the one hand, chimpanzee conservation on the Guinea/Guinea-Bissau border seemed to require maintaining a diversity of habitats, including fields and fallows (Brugière et al. 2009). On the other hand, the plan to save the region's last elephants (4-10 individuals) was inspired by a South African model of park management (Brugière et al. 2006). The resulting policy would involve securing a "sanctuary" for elephants that would break down the anthropic barriers constraining their seasonal movements. In light of the nineteenth century data concerning the interlocked movements of human and elephant populations, this proposal seems ecologically relevant (for the elephants). But would the restoration of this lost environmental state be socially acceptable, about a century after the near-elimination of the elephants by ivory traders? In fact, the AGIR experts' focus on these two species is far from being culturally meaningless. Conservation programmes often exploit the general appeal of species which are perceived in the West as noble, innocent and vulnerable (e.g. Wild Chimpanzee Foundation, African Wildlife Foundation) (Leblan, in press). However, we see here that chimpanzees versus elephants as conservation emblems express different conceptions of an ideal environment that seem impossible to reconcile to those involved in conservation; the two proposed options carry radically different ecological, political and territorial implications.

Local human-chimpanzee relationships, protected areas and land rights (Bossou, Boké)

The two Guinean case studies compared here are based on (human) ethnographic observations made when tracking

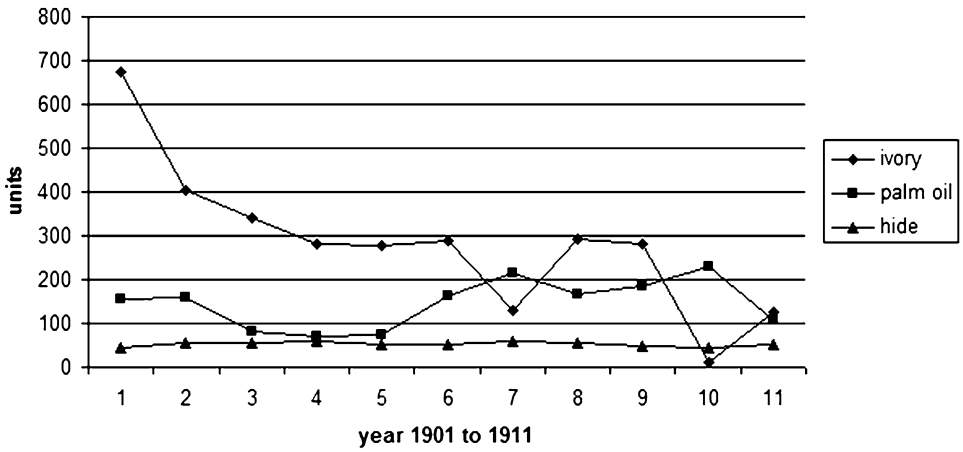

Fig. 2 Ivory, palm oil and hide exports from the Rio Nunez customs (Northwest Guinea) from 1901 to 1911—units unspecified (Figarol 1911)

chimpanzees or their traces in the company of villagers. GY had been working at Bossou since 1992 with members of a lineage entrusted by the founders' descendants to guide researchers on chimpanzee traces (Verroust 2003). This experience provided the necessary background for understanding the causes of the 2002 uprising and the meaning of the various stakeholders' statements heard during interviews and informal discussions. A complementary source of documentation to cross-check these data consisted of e-mail reports from Gaku Ohashi and Shiho Fujita, who were studying chimpanzees at the time. In the villages of Niama Yara and Bourounda (Boké region) where a protected area implementation process took place between 2000 and 2005, VL attended sessions of environmental "education" administered by AGIR agents, observed hunters' skills in situ and carried out semi-structured interviews with all concerned stakeholders between 2003 and 2005 (see Leblan 2007 for details). VL and BB obtained information through a *griot*'s narrative consisting of short animal "*Just So Stories*" aimed at entertaining an audience (Leblan and Bricka 2013).

Bossou is a few kilometres away from the Nimba range, which was designated as Strict Nature Reserve in 1944, receiving a UNESCO Biosphere Reserve status in 1981. The Bossou forest, located on a limit between the village and the local chimpanzee community range, was added to the "Core Area" of the UNESCO scheme in 1991. Although this label did not imply any real legal force, it probably contributed to modifying the context for the legitimacy of various arguments concerning the management of chimpanzees and their habitat. From a villagers' perspective, this process culminated with the establishment of the Bossou Environmental Research Institute, a national Guinean research organization, in 2001. In 2002, villagers entered into resistance against newly enforced conservation policies by launching a tree-clearing campaign inside the "core area", claiming a right to farm there transmitted from their forebears. The opening of a research institute implied that from then on, access to the chimpanzees (for research, tourism, etc.) would be controlled by the State rather than the villagers, ignoring the fact that chimpanzees were locally considered as receiving protection long before the arrival of scientists at the site, as ancestors of the village's founding lineage. In particular, a major actor of the conflict repeatedly asserted that cultivating fields surrounding the "core area" is good for the chimpanzees as they too can eat the crops: their "theft" is regarded as akin to an offering, echoing 1940s accounts already reporting on this kind of relationship (Kortlandt 1986). The villager's assertion later gained partial confirmation when it was established that Bossou chimpanzees spend about 10 % of their feeding time on cultivars (Hockings et al. 2009 who, however, mention chimpanzees chased away by farmers). A few Bossou inhabitants also expressed sceptical opinions regarding the research activity itself, pointing out that the forest had increased in size due to pressure from researchers. It seemed to them that increasing chimpanzee habituation to humans (researchers, tourists) resulted in an increase of chimpanzee attacks on humans (see Hockings et al. 2010 for an ecological perspective); something that, according to them, did not happen when fields were cultivated between the village and the forest. In sum, the view based on local experience states that by turning areas near the main chimpanzee range into fields and by accepting a certain degree of "crop theft," the chimpanzees' foraging conditions are improved, at the same time providing a sort of "buffer zone" between them and the villagers. This assertion has the form of a hypothesis relating to "reserve design", including zoning — stating the cause of the crisis and presenting a solution involving specific types of land-use and land rights. Expanding on the previous study (Yamakoshi and Leblan 2013), it also appears that both villagers and researchers working at the site claimed chimpanzees to be their heritage, i.e. entities inherited from their ancestors and transmitted to descendants, which mobilize a certain number of values, representations, discourses and practices with political, territorial and identity-related connotations (Cormier-Salem and Basset 2007). Members of the founding lineage protect the chimpanzees because they descend from their forebears; this provides legitimacy for controlling access to them (Verroust 2003). By contrast, research since 1976 has ascribed new values and meanings to the Bossou chimpanzees. "Outsiders" do not view them through knowledge of the local kinship network, which extends to chimpanzees, but as part of a larger regional chimpanzee population known to be increasingly fragmented under the pressure of local resource uses. The creation of a UNESCO Biosphere Reserve removing agricultural fields from the edges of the chimpanzee range is hoped to help them recover their habitat. Bossou chimpanzees have thus been turned into a "world heritage" to be transmitted to the world's future generations, i.e. far beyond the local kinship networks, further contributing to turning the latter into subjects of contention.

The Niama Yara and Bourounda context is different but leads to the same kind of confusion about the meaning and the exercise of power over the environment. There, villages and fields are presumed to be human territory gained on land belonging to the genies, i.e. the tutelary beings that play active roles in organizing land tenure, and that are known to grant protection to some animal species by making them invisible to hunters. The reasons for this protection may be understood through analogies with human domestication practices; for instance, a hunter explains that if he owns chickens, he lets them out in the

daytime and brings them back inside at night. From this, it may be said that animal species are caught in a dual relationship, as the genies' domesticated property and the hunters' prey, a common scheme in West Africa (e.g. Larrue 2010 in Senegal). The *griot*'s narratives mentioned above single out the chimpanzee in the animal kingdom, pointing out both morphological and behavioural similarities with humans (group solidarity, communication through gestures…), which is consistent with a myth about the origins of chimpanzees according to which they once were humans transformed into animals after transgressing a ban imposed by God (Leciak 2006; Leblan, in press report on identical narratives in other localities of the Guinean coast). At the same time, they also reinstate an essential difference: the chimpanzee belongs to the world of the bush, as opposed to the village, implying that it is also protected by genies as are several other species (see Leblan and Bricka 2013 for the whole narrative's transcription). In this context, when enquiring about the local conceptions of AGIR's activities, one hunter interlocutor surprisingly answered that the programme was setting aside areas for itself in order to breed the animals that lived there. According to AGIR managers, this statement reflected the importance of further raising local "environmental awareness". However, the idea of reserving pieces of land that would benefit an entity known as "nature" is strange enough in itself for someone who considers that any area claimed by a human being is locally meant to be transformed into a living-place or an agricultural field. But the idea of reserving such portions of land for the protection of animals perhaps looks even stranger to a Northwest Guinean since many of them, including chimpanzees, are not categorized as wild; as we have seen, institutional conservationists have entirely missed the point that that they are not only likely to be potential prey for hunters, but the genies' domesticated property as well. This gives sense and meaning to the local consideration of AGIR's protected areas as the plan for a breeding programme. We may go one step further and suggest, as a hypothesis, that AGIR has been perceived as entering a competition with genies for the control of "wild" animals. Given the genies' ownership status, there appears to be little chance that villagers would ever recognize chimpanzees and other animals as "their" heritage, as the programme managers would like.

Conclusion

The kind of historical observations usually referred to in primatology are internal to the discipline, allowing us to retrace the demographic history of particular primate populations (Isbell and Chism 2007), or to account for behavioural variation on durations which exceed personal research projects (Nishida et al. 2009). Some studies have exceptionally resorted to historical ecology to analyse patterns of long-term primate habitat use and transformation processes (Duvall 2008), or to a "four fields" anthropological approach to trace their past distribution (Baker 2013; see also Deputte and Anderson 2009; Gruber 2013 for ecological uses of historical data). This study shows that written sources as well may productively address issues of prime concern to primatology, such as dynamics of past primate and other large mammal population distribution in relation to long-term anthropogenic environmental change, in this case driven by international market forces. Indeed, international trade in natural products (elephant ivory) and commercial agriculture (the nineteenth century Guinean peanut trade) that are likely to impact wildlife are not only recent phenomena as assumed in much of the chimpanzee literature. The evidence presented here is an incentive to be more cautious about the historicity of environmental change, looking for patterns of sawtooth rather than unidirectional long-term environmental change. Several potentially useful social science and historical studies that consider forest cover dynamics as being as much the expression of changing social and political relationships as the outcome of ecological dynamics and carried out in the chimpanzee range remain unexploited in the primatological literature (for West African examples, see Fairhead and Leach 1996; Nyerges and Green 2000; Temudo 2009).

Through ethnographic enquiries carried out while tracking chimpanzees with local people in two regions of Guinea, this article further contributes to identifying the long-term social, political and ecological constants involved in the production of environmental contingencies. This appears as a prerequisite for setting debates with conservation stakeholders, from lineage-level politicians to public authorities and international development agencies exhibiting competing heritage claims. In the West (and in primatology), nature is essentially conceived as flows of living beings and natural resources to steer towards "positive" outcomes (e.g. Halloran et al. 2014; Hockings et al. 2015). However, the important issue of resource *allocation* should become a major focus of primate conservation policies as recalled by the land-use rights issues documented here. On the other hand, chimpanzees are imbued with other meanings that contribute to shaping their relationships with humans (i.e. human ancestors at Bossou, the domesticated property of genies at Niama Yara and Bourounda). These meanings and experiences with primates are taken into account in the "multispecies ethnography" vein of "ethnoprimatology" (Malone et al. 2014), but in a problematic way for primatology/ethnology collaborations since multispecies ethnographers grant out of

principle a same or "symmetrical" intentionality to humans and nonhumans (see Leblan 2013 for a discussion of this issue; Servais 2013 and Takada 2013 for alternate social anthropological approaches to primate minds). These experiences, including acts of resistance to protected area management plans, actually represent new and probably more legitimate opportunities for the implementation of conservation policies. This report on a Franco-Japanese collaboration suggests that a thorough documentation of such conflicts at various chimpanzee research sites would enable a major step in that direction and also strengthen collaborations with the social sciences.

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Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

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