# *Sorcery and nature conservation*

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# Sorcery and nature conservation

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SUMMARY

Representations of animals are diverse and can portray local understandings of nature conservation, information that is often missing from conservation debates. In Cantanhez National Park (southern Guinea-Bissau) chimpanzees (*Pan troglodytes verus*) are recognised as animals that share certain features with humans but live independently of them in the forest. However, chimpanzees are also integral to socially mediated, deep-rooted, local narratives about sorcery and nature conservation. We use results from ethnographic research to explore local interpretations of chimpanzee attacks on people. Attacks by 'bush' chimpanzees occur when an animal is provoked by someone's actions towards it. Unprovoked attacks however, are either interpreted as the act of a shape-shifted chimpanzee (i.e., a sorcerer) or as the responsibility of conservation stakeholders. In the case of unprovoked attacks, chimpanzee aggression is linked to a perceived abuse of power and to greed, with implications for nature conservation locally. Close analysis of local representations of animals contributes to a broader consideration of conservation priorities and practice.

INTRODUCTION

A rapidly growing body of conservation literature addresses various aspects of human-animal interaction, including conservation conflicts (Hill 1997; Naughton-

Treves 1998; Woodroffe et al. 2005; Dickman, 2010; Draheim et al. 2015; Redpath et al. 2015). However, little attention has been paid to symbolic meanings of animals (Hill 2015), particularly when these are linked to local criticism of conservation policies. Representations of animals can be intricately embedded within people's lived experience of a place. Therefore, to understand the relevance of these narratives around certain species requires an understanding of the tensions and power-relations associated with the *social* context in which that narrative is created and sustained. Despite the lack of representation of this perspective within the conservation literature, several studies in relevant disciplines consider animals' symbolic meaning in local people's narratives. For example, Jalais (2008) examines tigers (*Panthera tigris*) as part of the social world of people in the Sundarbans (Bengal) whose views have often been dismissed as superstition, whether by colonial administrators or today's post-colonial, urban elites. Rural people in the Sundarbans reject the 'touristic tiger' and highlight feelings of marginalization and exclusion when evoking their understandings of tigers (Jalais 2008: 34). In Japan, humans and bears (*Selenarctos thibetanus japonicus*, *Ursus arctos yezoensis*) are seen as putting each other's livelihoods at risk (Knight 2000). In this context, Knight (2000) argues, recent negative views about bear conservation stem from the indifference of urban conservationists to the costs to rural dwellers of living alongside bears. Similarly, in Norway, the anti-wolves alliance is sustained by rural people's concern to maintain local ways of life which are 'not quite threatened by the actual wolves, but rather by the protected wolves', with wolf protection being imposed on them by urban elites who neither live with wolves, understand nor value rural ways of life (Marvin 2010:76). In Cameroon, Köhler (2000) describes the symbolic representations of elephants as part of a 'cosmic economy of sharing' (Bird-David et

al. 1992) established between humans, animals and other forest beings. Baka people describe what is understood as an insurgency of hybrid elephant-men (*mokila*) against the Baka community. These *mokila* kill Baka hunters, and kidnap their women and children in revenge for the elephants killed during the period Baka hunters participated in the ivory trade (Köhler, 2000).

These case studies go beyond understanding whether local people eat, hunt, like or dislike certain animal species; rather they shed light on the importance of the symbolic constructions of wildlife across a range of species, geographical locations, and different human groups. Particularly when there is a long history of coexistence, efforts are needed to understand representations of animals socially and historically. In this paper we use insights gained through ethnographic research in Guinea Bissau to explore local representations of chimpanzees and argue that exploring these symbolic meanings of animals may contribute to a deeper understanding and possible resolution of local conservation conflicts.

Within Euro-American cosmologies, chimpanzees figure among the charismatic African mega fauna, and are commonly considered conservation flagship species. Global programs such as the Great Apes Survival Partnership (GRASP) have recognised great ape tourism as a promising conservation strategy (GRASP, 2005). In East Africa, tourism with habituated chimpanzees has been ongoing for over 30 years (e.g. at Gombe and Mahale in Tanzania, and Budongo and Kibale in Uganda); more recently, in West Africa, tourism with unhabituated or semi-habituated chimpanzees has been established at a number of sites including Taï (Côte d'Ivoire), Gola (Sierra Leone) (Macfie & Williamson, 2010) and Cantanhez National Park (Guinea-Bissau) (Sousa et al. 2013). However, whether tourism can successfully

93 achieve both conservation and development goals simultaneously remains contested
94 within the literature (Leischer et al., 2000).
95 In Guinea-Bissau, the national action plan for the conservation of chimpanzees
96 (*P. t. verus*) reports they have “recently disappeared” from certain areas (Casanova
97 & Sousa 2007). Sá et al. (2012) describe chimpanzee body parts, particularly skins,
98 being traded in the capital, Bissau. However, in Cantanhez where people live in
99 close proximity with chimpanzees (e.g. Sousa et al. 2011, 2013; Hockings & Sousa
100 2012, 2013; Bessa et al. 2015), local inhabitants perceive them as having increased
101 in number (Sousa 2014). Chimpanzees are regarded as similar to humans and are
102 therefore not hunted nor eaten (Gippoliti et al. 2004; Karibuhoye 2004; Sousa et al.
103 2013). However, because they live in close proximity to human settlements,
104 sometimes forage on people’s crops, because and women and children fear them,
105 Costa et al. (2013) advised against chimpanzees being used as a conservation
106 flagship species in Cantanhez.
107 Encounters between chimpanzees and people resulting in physical injury or
108 death (to people or apes) are perhaps the most dramatic face of human-chimpanzee
109 interactions. At Bulindi, Hoima District (Uganda), where chimpanzees live amid farms
110 and villages there are reports of chimpanzees chasing people (McLennan 2008) and
111 attacking young children, which has discouraged agencies from implementing
112 chimpanzee tourism in the area (McLennan & Hill 2010). There are also reports of
113 chimpanzees injuring children at Bossou in Guinea-Conakry (Hockings et al. 2010),
114 killing children and babies in Sierra Leone (Richards 2000), and carrying out
115 predatory attacks on children in villages close to Kibale National Park, Uganda
116 (Wrangham et al. 2000). In Kibale, three children were eviscerated and had their
117 hands and/or feet severed in the attacks which led Wrangham et al. (2000: 187) to

argue that chimpanzees “should now be regarded as occasional hunters of humans”. For a recent compilation of records on ape attacks on humans in Africa and Asia, see McLennan and Hockings (2016).

However, narratives of chimpanzee aggression are not necessarily straightforward, particularly when the violence is thought to have a human origin. As described by Richards (1996, 2000) for Sierra Leone, witches are believed to “dress” as chimpanzees, to mutilate and/or murder young people and babies and sell their body parts for the manufacture of “bad medicine”. Worldwide, there are wide-ranging interpretations of witchcraft and it has remained a broad and controversial domain of research (Geschiere 2013). However, a feature common to several studies is the accusation of witchcraft being directed towards what is perceived of as excessive individualism regarding the distribution of power and goods (Richards 2000; Sarró 2009).

This paper analyses people-chimpanzee encounters in Cantanhez National Park (Guinea-Bissau) where chimpanzee tourism has been recently developed, despite local criticism of, and antagonism towards, the local non-government organisation (NGO) that was heading the Park. We discuss the implications that narratives relating to chimpanzee violence may have for nature conservation and for tourism. The analysis framed here contributes to the wider discussion on governance and negotiations of power in nature conservation contexts.

## METHODS

### Study area

Cantanhez peninsula (Tombali region) is located in southwestern Guinea-Bissau and became part of Cantanhez National Park in 2008 (see Figure 1). The peninsula comprises a combination of mangrove, forest (at various stages of regeneration), savannah and land under cultivation. There is no obvious frontier between farming areas and forest; instead farming areas intermingle with forested areas in a temporally and spatially dynamic fashion. In 2002, a partnership of NGOs together with the chieftains and the local administration, in the presence of other members of the community, signed an agreement that approved the internal rules for the future Park (Mendes & Serra 2002). These regulations prohibited the use of snares and traps for hunting and tried to act against deforestation, by banning shifting cultivation in areas set aside for protection (Mendes & Serra 2002). As part of the settlement, NGOs agreed to (i) financially support mangrove rice farming; (ii) provide financial incentives, field material and courses to community guards; and (iii) hold regular meetings with local inhabitants (Mendes & Serra 2002). Local reports suggest that NGOs were considered to have failed to satisfactorily meet these conditions, something which caused dismay and outrage among local residents (see Temudo 2009, 2012; Sousa 2014).

## Methodological approach

This paper draws on 13 months of ethnographic fieldwork carried out by JS over five years (2009-2013) in Cantanhez (see Figure 1). Data were collected within the scope of a larger research project adopting a mix-methods approach using both ethnographic and quantitative data collection methods.

[Add Figure 1 about here]

Figure 1 – Cantanhez National Park in Guinea-Bissau.

In this paper we draw directly on information from 45 in-depth qualitative interviews conducted by JS with key informants in Cantanhez to explore local views about NGOs, the Park and sorcery. Rapport had already been established between the interviewer and local people as a consequence of JS having already completed 13 months of ethnographic fieldwork at this site. As noted by Dury et al., (2011) and Albuquerque et al. (2014), qualitative approaches can enable the researcher to access socially sensitive information, as was the case in this study.

Key informants included leaders of associations, elders recognised as knowledgeable about local oral history, people recognised as magically skilled, members of founding lineages, chieftains and village chiefs, healers and preachers, hunters, and people involved in protests, as well as those acquainted with cases of witchcraft and of people harmed by chimpanzees.

Further information was gathered during participant observation and informal conversations. Interviews were held in Guinea Kriol, the *lingua franca*. This approach to data collection provided access to a deeper understanding of existing tensions between local people, NGOs and the Park. The research was approved by the University Research Ethics Committee (UREC), Oxford Brookes University on 2 October 2009.

## RESULTS

In Cantanhez, animals were portrayed as creatures that exist independently of people, but also as actors that are enmeshed within the human social world. Local farmers often refer to chimpanzees as intelligent animals that feed on crops but do not waste harvests (see Sousa 2007, Hockings and Sousa 2013). Chimpanzees are also said to feed on crops only when they are hungry or when they like a certain crop such as orange, cashew or honey (see Bessa 2014, Bessa et al. 2015 for a study on the dietary habits of a chimpanzee community in Cantanhez). Indeed, previous studies from Cantanhez have highlighted portrayals of people-chimpanzee interactions as one of peaceful coexistence (Sousa 2007, Karibuhoye 2004, Hockings and Sousa 2012). However, the context-specific nature of these narratives becomes clear when negative views about chimpanzee crop feeding behaviour are expressed whenever the Park is evoked (see Sousa 2014). To explore this more fully, we examine local narratives about negative interactions between chimpanzees and people in this landscape.

We identify two major types of local narratives used to frame chimpanzees in their encounters with humans. In the first one, the 'bush' chimpanzee or 'clean chimpanzee' (*dari limpu*, Guinean Kriol), is perceived as a frightening but essentially predictable animal that will not attack people without provocation. Chimpanzees in Cantanhez are not specifically known for attacking people, but there were two attacks of this nature recorded during fieldwork. One involved a man being hospitalised for more than a month after he shot a female chimpanzee feeding on his orchard. The second event was a consequence of a hunter harassing chimpanzees in the forest. Both episodes were reported as a chimpanzee retaliating to persecution and the injured people had to be hospitalised for medical treatment.

However, the situation becomes more complex when an animal shows certain physical or behavioural characteristics that signal it is ‘not simple’, as people in Cantanhez say, but a human in animal form. This corresponds to the narrative of the ‘unclean chimpanzee’ (*dari ka limpu*, kl) or ‘shape-shifted chimpanzee’ (*dari bidadu*, kl). Shape-shifted chimpanzees are distinguished by their all-too-human behaviours, such as the ability to speak people’s language, or apparent groundless reasons for harassing or attacking people (Sousa et al. 2017). As an interviewee described, shape-shifted chimpanzees are ‘people who shape-shift into chimpanzees to commit crimes’. We have gathered 11 reports of chimpanzee witchcraft in southern Guinea-Bissau (Sousa, 2014): four in the Boé region and seven in Tombali region (five of these collected in Cantanhez). Each incident was confirmed by several people and all informants explained them as being attacks by a person shape-shifted into a chimpanzee. Three attacks comprised physical threat only (i.e., the recipient was not harmed), four referred to actual attacks that resulted in injury (i.e., the victim received scratches or bites), three involved human deaths, and another the disappearance of a child.

More recently, there have been reports of chimpanzee attacks on children in the Empada sector, in Quinara region. Four cases of children being injured by chimpanzee were reported in August 2006 (e-Global 2016) and the national newspaper *O Democrata* reported that there have been seven chimpanzee attacks to children between October and December 2016 and, of these, six were considered serious by the hospital doctors (O Democrata 2016). JS interviewed one of the children who had his leg, face and hands bitten and lost several toes during the attack. The child identified the attack as witchcraft. Three months had passed since

the attack, the child was reticent to talk about the episode, and indeed reports of traumatised children, prone to suggestion from adults, should be taken with caution.

For the interviewees, sorcerers (those doing the shapeshifting) were recognised as attacking members of their own family or those belonging to their social networks. Such actions allow sorcerers to benefit at the expense of others, while at the same time reinforcing their relationships within the society of sorcerers. Sorcery accusations serve as interpretations of undesired events, making someone responsible for a loss or a misfortune. For example, in Cantanhez, in 2010 an elderly woman, regarded by many as a sorcerer, was reported to shapeshift into a snake to bite her nephew who was taking care of his absent father's cashew orchard. Rumours suggested the woman wanted control of the revenue from the orchard. Another example refers to a man who was accused of belonging to a sorcerers' society and of spying on the local NGO at farmers' meetings where people criticised the Park (full report in Sousa et al 2017). Sorcery accusations work at a certain level of social intimacy in which accusations of sorcery are frequently linked to the perceptions of selfishness, excessive greed or the abuse of power.

The description below refers to a chimpanzee attack initially represented as chimpanzee sorcery by neighbours of the victim (i.e., an attack by an ‘unclean’ chimpanzee), but the victim herself (an adult woman, ≈ 40 years old) suggested a different interpretation of the event when she later recounted the event to JS: ‘I went to get bunches of oil-palm fruits, and my son saw a chimpanzee in a tree. I thought we should avoid it by going a different way. However, surprisingly, there were many chimpanzees there too. A chimpanzee hid behind a tree and grabbed me, it scratched my neck and I thought it would take me to the forest. A man was cutting

bunches nearby and he came to help me out. When the man came the chimpanzee let me go' (Aua, pseudonym, early 2011).

Upon further enquiry, it transpired that Aua was unsure whether it was a shape-shifted chimpanzee or not. However, she reported that she was going to send a message to the head of the NGO to tell him that his chimpanzees were harming people, an action consistent with her interpreting the event as being caused by a 'bush' chimpanzee. This incident of chimpanzee aggression was perceived by neighbours as the outcome of sorcery since in their view there was no reason for the attack. Initially Aua was uncertain whether the incident involved a bush or shape-shifted chimpanzee, but on reflection indicated that the attack had been led by a bush chimpanzee, but with the caveat that she held the head of the NGO responsible for what had happened to her. The head of the NGO lived and worked in the capital Bissau, only visited Cantanhez occasionally for scheduled events and was thus rarely present locally (see Sousa et al. 2017 for a detailed discussion of the social implication of witchcraft locally).

Since 2009, JS has recorded community guards asking for (though not receiving) salaries, uniforms and boots, and local people requesting meetings with the heads of conservation organisations. Nothing appeared to happen in response to these requests until 2013. In 2007, local people staged a strike, preventing tourists entering local forests, and forest signs indicating the names of the forests were removed by disgruntled local people. The Chieftains and other local leaders were accused of being in support of conservation projects and overlooking their responsibilities towards local people (Sousa 2014, Sousa et al. 2017, Temudo 2005, 2009, 2012). Additionally, only about a third of the 15 local tourist guides, originally trained by a local NGO, have generated any income through tourism, and thus direct

benefit from the Park, since 2010-2011. In 2011, in a public meeting, several farmers demanded a share of the funds generated by the local hotel where tourists are hosted, and a voice in the hotel's management; the hotel is managed by a local NGO. Perhaps not surprisingly the majority of people express dissatisfaction and exclusion because the benefits they expected to receive as a result of the initial agreement made between local leaders and NGO officials, have not been forthcoming, The following quote from a farmer, recorded in 2011, illustrates this broader sense of grievance with the Park: 'We gave them the forests. What did they give us? Nothing! Don't you ever tell me about conserving forests!'

## DISCUSSION

Local understandings of wildlife, particularly those associated with religious and ritual meanings (e.g. see Neto et al. 2011, for Brazil) and medical uses (e.g. see Benítez 2011 for Spain) can be difficult for western-trained conservationists to fully comprehend (Alves et al. 2012). Meanings attributed to animals in witchcraft, like those described in this paper, are probably not exceptional (for a discussion about culture and conservation from a conservationist's point of view, see Dickman et al. 2015). In fact, conservation may also be similarly difficult to understand, and be a cause of concern and consternation for local people. For example, in Zanzibar, a proposal to reintroduce a leopard population classified as extinct caused concerns among local people because the idea of reintroducing leopards linked to memories of leopard-keeping and witchcraft (Walsh & Goldman 2012). Similarly, Richards (2000, p.78), describes that while interviewing young people about conservation in

Sierra Leone, he encountered some who ‘expressed alarm that protection for chimpanzees provided cover’ for chimpanzee witchcraft.

Proximity between chimpanzees and people in Cantanhez is expressed through sharing of physical space, portrayals of a common past in oral history: oral tradition in Cantanhez claims that the first chimpanzee was once a blacksmith who was transformed by God into a bush animal; and through shape-shifting and thus sorcery. Despite these multiple meanings in local people’s framings, the idea of 'chimpanzee' in nature conservation discourse corresponds only to the chimpanzee as a forest (bush) animal. However, because of the intimate, secretive nature of narratives around sorcery, which often imply conflict within the family, attacks from ‘shape-shifted’ chimpanzees very likely go unreported to outsiders.

In Cantanhez, nature conservation has become politically significant and implicated in local governance. Beginning in the 1990s and continuing to the present day, there have been social tensions between the local conservation NGO and local residents (Temudo 2005, 2009, 2012, Sousa 2014). Nature conservation is seen as a restriction inflicted upon people for the sake of chimpanzee welfare, similar to what Jalais (2008: 36) described as a perceived ‘unequal distribution of resources between humans and tigers’. Nature conservation in Cantanhez is thought to defend chimpanzees at the expense of local farmers; at the same time those who belong to nature conservation circles are perceived to benefit, while local people expressed keen feelings of being disenfranchised and excluded.

There is an extensive literature on witchcraft in African contexts, and more broadly (Geschiere, 2013), and despite the differences in contexts and discourse, accusations of witchcraft are often directed towards individuals who are thought to have benefitted at the expense of others through immoral/inappropriate means,

including those challenging culturally accepted norms of reciprocity, and/or those abusing others through alliances with more powerful individuals.

Unwarranted, violent attacks by chimpanzees are subject to local interpretation and are analysed in regard to specific, social contexts. Animals are not perceived as mean or vindictive in their essence. Either the attacker is perceived as a shape-shifted chimpanzee and the sorcery narrative is invoked within intimate circles of sociability, or the attack is perceived as undertaken by a 'clean' or 'bush' chimpanzee that is protected by nature conservation legislation and then the accusation is directed at those holding senior managerial positions in chimpanzee conservation. In this sense, different natures – the bush chimpanzee (as a protected chimpanzee) and the unclean chimpanzee (as sorcerer) are both subjects in critical assertions of expropriation and violence. By creating programmes based on unequal divisions of benefits and duties, nature conservation strays into both highly stigmatised political ground and socially fraught terrain that deserves more careful consideration.

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## References


Alves RRN., Rosa IL., Neto NAL. & Vocks R. (2012) Animals for the Gods: magical and religious faunal use and trade in Brazil. *Human Ecology* **40**: 751-780.

Bessa J., Sousa C. & Hockings KJ. (2015) Feeding ecology of chimpanzees (*Pan troglodytes verus*) inhabiting a forest-mangrove-savanna-agricultural matrix at Caiquene-Cadique, Cantanhez National Park, Guinea-Bissau. *American Journal of Primatology* **77:** 651–665

Bird-David N., Abramson A., Altman J., Bicchieri M. G., Burch ES., Ember CR., Endicott KM., Grinker RR., Gudeman S., Ichikawa M., Ingold T. & Wenzel G. W. (1992) Beyond 'The original affluent society': a culturalist reformulation. *Current Anthropology* **33:** 25–47

Casanova C. & Sousa C. (2007) National action plan for the conservation of the chimpanzee, red western colobus and black and white western colobus monkey populations in Guinea-Bissau Republic.

Costa S., Casanova C. & Lee P. (2013) The good, the bad and the ugly: perceptions of wildlife in Tombali (Guinea-Bissau, West Africa). *Journal of Primatology* **2:** 1–7

Dickman AJ. (2010) Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict. *Animal Conservation* **13:** 458–466

Dickman A., Johnson PJ., Kesteren F. & Macdonald DW. (2015) The moral basis for conservation: how is it affected by culture? *Frontiers in Ecology and the Environment* **13:** 325-331.

389 Draheim M., Madden F., McCarthy JB. & Parsons C. (2015) *Human-wildlife conflict:*
390 *complexity in the marine environment*. Oxford: Oxford University Press
391 Drury R., Homewood K. & Randall S. (2011) Less is more: the potential of qualitative
392 approaches in conservation research. Animal Conservation **14**: 18-24.
393 Geschiere P. (2013) *Witchcraft, intimacy and trust*. Chicago and London: The
394 University of Chicago Press
395 Giles-Vernick T. & Rupp S. (2006) Visions of apes, reflections on change: telling
396 tales of great apes in Equatorial Africa. *African Studies Review* **49:** 51–73
397 Gippoliti S., Sousa C. & Embalo D. (2004) Guiné-Bissau. In: *Chimpanzés d'Afrique*
398 *de l'Ouest. Etat de Conservation de l'espèce et plan d'action*, eds. R. Kormos
399 C. Boesch H. I. Bakarr & T. M. Butynski, pp. 73–78. Groupe de spécialistes
400 des primates de la CSE de l'UICN.
401 GRASP (2005) Global strategy for the survival of great apes and their habitat [WWW
402 document]. URL http://www.unesco.org/mab/doc/grasp/e_globalStrategy.pdf
403 Hill CM. (1997) Crop-raiding by wild vertebrates: The farmer's perspective in an
404 agricultural community in western Uganda. *International Journal of Pest*
405 *Management* **43:** 77–84
406 Hill CM. (2015) Perspectives of 'conflict' at the wildlife–agriculture boundary: 10
407 years on. *Human Dimensions of Wildlife* **20:** 296–301
408 Hockings KJ. & Sousa C. (2012) Differential utilization of cashew—a low-conflict
409 crop—by sympatric humans and chimpanzees. *Oryx* **46:** 375–381
410 Hockings KJ. & Sousa C. (2013) Human-Chimpanzee Sympatry and Interactions in
411 Cantanhez National Park, Guinea-Bissau: Current Research and Future
412 Directions. *Primate Conservation* **26:** 57–65

413 Hockings K.J., Yamakoshi G., Kabasawa A. & Matsuzawa T. (2010) Attacks on local
414 persons by chimpanzees in Bossou, Republic of Guinea: long-term
415 perspectives. *American Journal of Primatology* **72:** 887–896
416 Jalais A. (2008) Unmasking the cosmopolitan tiger. *Nature and Culture* **3:** 25–40
417 Karibuhoye C. (2004) Mammal conservation status and prospects for community-
418 based wildlife management in coastal Guinea-Bissau, West Africa.
419 Knight J. (2000) Culling demons: the problem of bears in Japan. In: *Natural enemies:*
420 *people–wildlife conflicts in anthropological perspective*, ed. J. Knight, pp. 145–
421 169. London: Routledge.
422 Köhler A. (2000) Half-man, half-elephant. Shape shifting among the Baka of Congo.
423 In: *Natural enemies: people-wildlife conflicts in anthropological perspective*,
424 ed. J. Knight, pp. 50–73. London: Routledge.
425 Leischer C., Sanjayan M., Blockhus J., Kontoleon A. & Larsen SN. (2000) *Does*
426 *conserving biodiversity work to reduce poverty? A state of knowledge review*.
427 The Nature Conservancy; University of Cambridge; The Poverty and
428 Conservation Learning Group
429 Macfie EJ. & Williamson EA. (2010) *Best practice guidelines for great ape tourism*.
430 Marvin G. (2010) Wolves in sheep's and other clothing. In: *Beastly natures: animals,*
431 *humans and the study of history*, ed. D. Brantz, pp. 59–78. Charlottesville &
432 London: University of Virginia Press.
433 McLennan MR. (2008) Beleaguered chimpanzees in the agricultural district of
434 Hoima, Western Uganda. *Primate Conservation* **23:** 45–54
435 McLennan MR. & Hill CM. (2010) Chimpanzee responses to researchers in a
436 disturbed forest-farm mosaic at Bulindi, western Uganda. *American Journal of*
437 *Primatology* **72:** 907–918

McLennan MR. & Hockings KJ. (2016) The aggressive apes? Causes and contexts of great ape attacks on local persons [WWW document]. In: *Problematic Wildlife*, ed. F. M. Angelici, pp. 373–394. Springer International Publishing. URL http://link.springer.com/chapter/10.1007/978-3-319-22246-2_18

Mendes N. & Serra A. (2002) As medidas de Iemberém sobre a co-gestão das 14 matas de Cantanhez.

Naughton-Treves L. (1998) Predicting patterns of crop damage by wildlife around Kibale National Park, Uganda. *Conservation Biology* **12:** 156–168

O Democrata. 2016. Chimpanzés voltam aos ataques ferozes contra crianças em Empada. 7 December. Available in: http://www.odemocratagb.com/chimpanzes-voltam-aos-ataques-ferozes-contra-criancas-em-empada/

Redpath SM., Gutierrez RJ., Wood KA. & Young JC. (2015) *Conflicts in conservation. Navigating towards solutions*. Cambridge: Cambridge University Press

Richards P. (1996) Chimpanzees, diamonds and war. The discourses of global environmental change and local violoence on the Liberia-Sierra Leone border. In: *The future of anthropological knowledge*, ed. H. L. Moore, pp. 140–155. London, New York: Routledge.

Richards P. (2000) Chimpanzees as political animals in Sierra Leone. In: *Natural enemies: people-wildlife conflicts in anthropological perspective*, ed. J. Knight, pp. 78–103. Oxon: European Association of Social Anthropologists.

Sá R., Ferreira da Silva MJ., Sousa F. & Minhós T. (2012) The trade and ethnobiological use of chimpanzee body parts in Guinea-Bissau: implications for conservation. *TRAFFIC Bulletin* **24:** 31–34

Sarró R. (2009) *The politics of religious change on the Upper Guinea Coast. Iconoclasm done and undone*. Edimburgh University Press

Sousa J. (2014) Shape-shifting nature in a contested landscape in Guinea-Bissau. (PhD). Oxford Brookes University, Oxford. 245[372] pages.

Sousa J., Barata AV., Sousa C., Casanova CCN. & Vicente L. (2011) Chimpanzee oil-palm use in southern Cantanhez National Park, Guinea-Bissau. *American Journal of Primatology* **73:** 485–497

Sousa J., Vicente L., Gippoliti S., Casanova C. & Sousa C. (2013) Local knowledge and perceptions of chimpanzees in Cantanhez National Park, Guinea-Bissau. *American Journal of Primatology* **76:** 122–134

Sousa, J., Hill, CM. & Ainslie, A. (2017) Chimpanzees, sorcery and contestation in a protected area in Guinea-Bissau. Social Anthropology. ISSN 1469-8676

Temudo MP. (2005) Western beliefs and local myths: a case study on the interface between farmers, NGOs and the State in Guinea-Bissau rural development interventions. In: *Between a rock and a hard place: Africa NGOs, Donors and the State*, eds. J. Igoe & T. Kensall, pp. 253–277. Durham: Carolina Academic Press.

Temudo MP. (2012) 'The white men bought the forests': conservation and contestation in Guinea-Bissau, Western Africa. *Conservation and Society* **10:** 354–366

Temudo MP. (2009) A narrativa da degradação ambiental no Sul da Guiné-Bissau: uma desconstrução etnográfica. *Etnográfica. Revista do Centro em Rede de Investigação em Antropologia* **13:** 237–264

Walsh M. & Goldman H. (2012) Chasing imaginary leopards: science, witchcraft and the politics of conservation in Zanzibar. *Journal of Eastern African Studies* **6:** 727-746

Woodroffe R., Thirgood S. & Rabinowitz A. (2005) *People and Wildlife, Conflict or Co-existence?* Cambridge: Cambridge University Press

Wrangham R., Wilson M., Hare B. & Wolfe ND. (2000) Chimpanzee Predation and the Ecology of Microbial Exchange. *Microbial Ecology in Health and Disease* **12:** 186–188