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Article

Understanding Cosmopolitan Communities in Protected Areas: A Case Study from the Colombian Amazon

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Abstract

It is now widely accepted that research about people and their interactions with wildlife provides unique and significant contributions that enhance our understanding of interspecies relationships in tropical forests. Studying human-nonhuman relationships involves not only the gaining of in-depth knowledge about local beliefs, values, and practices, but also the examination of the cosmopolitan identities of individuals as well as the impact of social and cultural processes of globalisation. Hence, it is imperative to explore the complexity of local communities living in protected areas. In this study, I consider the impact of community-based conservation (CBC) within Amazonianist societies and discuss how Western human-centred ideals of conservation can be made complementary to existing indigenous belief systems, sometimes resulting in unique and insightful outcomes. I present a case study showing how two Tikuna communities in the Colombian Amazon adopt transcultural beliefs and display innovation and resilience in the face of environmental and cultural change, and how these processes generate attitudes towards conservation initiatives and influence local livelihoods that are transformed by conservation efforts. I suggest that acknowledging indigenous populations as changing groups with dynamic, practical understandings of humans and nonhumans is a vital step towards identifying solutions to socioecological problems, where the needs of people and wildlife are met simultaneously.

Keywords: human-nonhuman relationships, transcultural beliefs, indigenous people, protected areas, community-based conservation, cosmopolitan communities, Colombian Amazon

INTRODUCTION

Over the past two decades, the relationship between biological and cultural diversity as well as the effects of global socioeconomic processes on traditional peoples and natural landscapes have received increased attention (Bennett et al. 2017). This has prompted efforts to formalise integrated approaches to research examining the socioecological aspects of environments and communities under threat (Cocks 2006; Tapsell and Woods 2010). It is now widely accepted that research about people and their interactions with wildlife provides unique and significant contributions that enhance our understanding of interspecies relationships in tropical forests, and can be used to inform conservation policy (Parathian et al. 2018). This in-depth knowledge of animals, plants, and ecological interactions is particularly valuable when managing wildlife populations in remote locations inhabited by indigenous people and can in some cases increase biodiversity, such as Kayapo farming and forestry techniques in the Brazilian Amazon (Posey 1985) and artificial clam gardens or "*loxiwey*" built by Kwakwaka'wakw communities on the Northwest Coast of America (Deur et al. 2015). Consequently, a number of community-oriented and participatory conservation partnerships aimed at protecting biodiversity and local cultures have emerged since the mid-1990s (Conklin and Graham 1995). This has been followed by increased advocacy for the involvement of local people and the development

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of community-based conservation (CBC) partnerships (e.g., Chernela 2005; Zanotti and Chernela 2008; Deur et al. 2015).

CBC partnerships have varying success, largely due to misinterpretations and generalisations about indigenous people and their interactions with wildlife by those designing and implementing conservation initiatives (Chernela 2005). For example, Western environmentalism has promoted an image of the "Ecologically Noble Savage", which identifies indigenous people as innocent and free of corruption, in contrast to the West's destructive materialism (Redford 1991; Hames 2007). This stereotype of indigenous people as natural conservationists is highly problematic because, among other things, it neglects to take into account the effects of economic globalisation and the importance of indigenous communities as they engage with global actors (Berkes and Davidson-Hunt 2007). This establishes a precarious foundation for indigenous rights advocacy as it misrepresents the nature of native communities and their priorities (Conklin and Graham 1995).

Further presumptions are made in terms of the language used by conservationists when discussing the protection of biological and cultural diversity. 'Culture' is defined as the collective programming of the mind that distinguishes the members of one category of people from another because of their customs, ideas, and behaviours (Lindsay 2005). This assumes that every human cultural group holds a set of homogeneous beliefs and attitudes, rather than more accurately viewing people as part of communities consisting of individuals with their own thoughts and opinions, and indeed, practising behaviours and expressing ideas from a combination of cultures and beliefs (Forte 2010). Moreover, cultural transmission is a complex and active process, which relies on practical activities and engagements with other community members and the local environment, and depends on understanding in practice more than the internalisation of collective representations (Rival 1997). In terms of biological conservation, according to the United Nations Environment Programme, 'biodiversity' measures variation at the genetic, the species, and the ecosystem levels (UNEP 2010). However, biodiversity protection typically focuses on *specie*s conservation and tends not to take into account the alternative ways of perceiving and organising the natural world, which establish the foundations of local ecological knowledge for the majority of indigenous peoples (Berkes et al. 2000).

As an anthropologist coming from a biological conservation background, I aim to highlight just how complex the interdisciplinarity of tropical forest conservation has become. I discuss how the different ways that people perceive and interact with biodiversity (because of their cultural heritage and experience) can influence and inform conservation. I then consider the impact of CBC partnerships within Amazonianist societies and discuss how Western human-centred ideals of conservation can be made complementary to existing indigenous belief systems, resulting in sometimes unique and insightful outcomes (Bennett et al. 2017). Finally, I present a case study, which shows how people from two indigenous Tikuna communities in the Amazon region of Southern Colombia adopt transcultural beliefs, display innovation and resilience in the face of change, and how these processes generate different attitudes towards conservation initiatives and influence local livelihoods, which are transformed by conservation efforts. I suggest that acknowledging indigenous populations as changing groups with dynamic, practical understandings of humans and nonhumans is a vital step towards identifying solutions to socioecological problems, where the needs of people and wildlife are met simultaneously. The arguments presented are based on a literature review of research at the border of anthropology and conservation studies, supported by examples from my doctoral research in the Colombian Amazon.

Complex indigenous beliefs and practices

It is well documented that indigenous people nurture relationships with plants and animals through practices and beliefs passed down through generations (Brightman 1993; Kohn 2013). Local perceptions of nature change under different conditions and are guided by a combination of variables including community interest, local needs, personal gain, experience, and family history (Descola and Pálsson 1996). However, a common oversight when examining the coexistence of people and wildlife is the simplification of social and cultural factors surrounding environmental issues (Agrawal and Gibson 1999). Local beliefs are misunderstood, contradicted or overlooked by conservation policies (Forsyth 2004). For example, in the Central Menabe region of western Madagascar, researchers and NGOs mistakenly identified 'slash-and-burn' agriculture (known locally as *hatsake*) as an irrational practice, driven by necessity rather than choice. However, according to tradition, *hatsake* is a method known to increase the productivity of land if carried out conferring to local *fady* or taboo (Scales 2012). Moreover, policy-makers implemented a generic agricultural policy for all ethnic groups in the region, while research showed that different groups associated different narratives with their agricultural practices and therefore carried out farming in very different ways (Scales 2012).

In addition to broad-spectrum generalisations about beliefs surrounding biodiversity, conservation research that includes a social element tends to focus on the tradition and indigeneity of local people without also documenting people's innovation and social or economic entrepreneurship (Tapsell and Woods 2010). Indeed, a common apprehension shared by conservationists and anthropologists is the loss of indigeneity among so-called 'traditional communities', including changes in local cultures, values, and knowledge. While these concerns are valid where changing beliefs and practices have detrimental impacts on nature, in some cases they provide financially or otherwise beneficial opportunities to local people, such as through the provisioning of regular salaries as well as new skills and increased individual or collective resilience (McGovern 2000).

Some major causes leading to changes in indigenous cultures have been identified, like the global spread of knowledge from

Europe and the United States (as part of colonial practices) (McGovern 2000) and the conversion of subsistence economies towards increasingly exploitative and commercial activities (Gómez-Baggethun et al. 2010). Studies show that formal schooling applies market-oriented values to nature and has culturally and environmentally destructive consequences on indigenous communities and indigenous children's relationships with nature. For example, a study by Lima (1998) showed that the introduction of state education among Amazonian communities in Brazil led to children becoming disengaged from nature and having a more detached perception of their forest environment. In spite of concerns over the impact of change on people's engagements with nature, indigenous entrepreneurship is of particular relevance in areas of conservation interest, especially where access to resources is limited and local people attempt to achieve self-determination or improve their socioeconomic circumstances by acting as advocates for strengthening national and international concerns over environmental damage (Robinson et al. 1991; Lindsay 2005).

Amazonian human-nature relationships and CBC partnerships

Current assumptions based on Western logic traditionally construct social boundaries between humans and nonhuman species and establish rigid distinctions between plants and animals. These notions, however, are challenged by anthropologists carrying out ethnographic research that examines Amazonian indigenous cosmologies (e.g., The Amazonian Achuar: Descola 1996). Similarly, biologists engage with indigenous people, stemming from a need to understand from a local perspective, "what nature is, how it is valued, and at what cost?", with regard to the conservation of species whose survival is at risk due to anthropogenic factors (e.g., Hockings et al. 2015). This has led to international entities increasingly engaging in conservation collaborations with local communities in development and resource management projects in what is known as "partnering"—an activity which has come under growing scrutiny (Lele et al. 2010). In most known cases of conservation "partnering", the ecological wisdom of indigenous people is ignored and Western knowledge is given primacy over local knowledge systems (West 2005).

Cross-cultural collaborations between conservationists and local communities could enable research to be scaled up cost effectively whilst also engaging communities in conservation-oriented interests (Basset et al. 2004). However, the normative ideology which shapes prevailing environmental discourse has arguably been largely responsible for failed conservation initiatives in tropical forests worldwide (Sheil and Lawrence 2004). Indeed, Bell and Russell (2000) suggest that "deep-seated humanist assumptions" and the "discipline-specific language" of scientists and environmentalists mean that most conservation ventures are inappropriate and inaccessible to indigenous people with different worldly perceptions of environments. For example, many of the creation stories of Amazonian indigenous peoples include spiritual or 'mythological' human-animal forms, such as the Yanomami, who describe animal ancestors or shamanic spirits known as *xapiripë* (Viveiros De Castro 2007). Xapiripë spirits are *utupë* images of the animals of the forest, the fathers of all animals and the ancestors of the Yanomami people. They interact with shamans and are believed to "represent the true centre, and the core of the forest beings" (Albert and Kopenawa 2003, translated by Viveiros De Castro 2007: 14). Such concepts hold an important place in local culture, society, and ecology. They establish early ideas about nature among Yanomami children and guide interactions with wildlife that challenge Western scientific categories of species classification and management (Milliken 2006).

Western and indigenous ontologies are characteristically believed to support incompatible sources of logic—in contrast to Western knowledge, which tends to be text-based, reductionist, hierarchical, and dependent on categorisation, indigenous knowledge is learnt through individual and collective experience, conveyed by oral tradition, and guided by experiential learning, through close and complex relationships with nature often including both natural and supernatural elements (Redford and Stearman 1993; Descola 2005). Indeed, increasing numbers of anthropologists advocate for Amazonianist societies, searching for new ways of relating to, and writing about, nature and culture, as they observe an ongoing disregard for the basic needs and realities of the communities with whom they engage (e.g., West 2005; Rival 2012; Kohn 2013). Several studies have problematised the nature-culture binomial and shown that certain indigenous societies have no separate classifications for animals and humans (e.g., Howell 1996; Rival 1998), while others have highlighted the importance of context and history in understanding local nature perceptions (e.g., Ingold 1993, 2000). Take for example Rival's work among the Huaorani of Ecuador, who engage in deep and meaningful interactions with their environment through the ecological interlocking of animal, plant, and human life (Rival 2012, 2015, 2016).

Other limitations of CBC partnerships

Apart from issues surrounding the fact that conservation policy is largely defined by Western environmental logic and discourse, there are numerous practical reasons why CBC partnerships fail. These include limited time and resources, which make it difficult for conservation projects to be tailored to local contexts, cultures, and demands; biologists not having access to, or feeling comfortable with, social science literature that can provide considerable guidance on how to avoid cultural obstacles and misunderstandings; and scientists who are unwilling to forgo the comfort and customs of their disciplinary mainstreams and avoid engaging in cross-disciplinary approaches to research (Sheil and Lawrence 2004). In addition, issues surrounding

financially-laden metaphors and market-oriented values, which are common to CBC partnerships, have become key features in major conservation policies (such as the European Union's environmental policy and the United Nation's 2005 Global Millennium Ecosystem Assessment). These value systems are widely recognised as being socially, morally, and ecologically controversial, resulting in several publications critiquing this approach (Willetts 2008; Kricheff 2012; Comberti et al. 2015; Hirons et al. 2016). See, for example, Comberti et al.'s (2015) concept of 'Services to Ecosystems' (S2E) devised to address the problematic concept of a one-way flow of services from ecosystems to people through Ecosystem Services (ES), and a preview of Cultural Ecosystem Services (CES) by Hirons et al. (2016).

Even with genuinely positive intentions, CBC partnerships flounder because of unforeseen inequalities contributing to economic and social power imbalances as well as inaccurate interpretations of culturally- or locally-specific representations (Zanotti and Chernela 2008). An example of one such project is provided in Chernela's (2005) analysis of community-based resource management in Brazil's central Amazon region. Implemented by the non-governmental sector, the project set out to be highly participatory and meet the needs of local communities. However, during its implementation, project interlocutors dominated social processes by inadvertently replacing local goals with their own alternative agendas. This meant that local demands were redefined by the interests of the researchers; intended acts of mediation unintentionally undermined local community initiatives; attempts to empower local communities ended up benefitting one subgroup over other participants; local participation was reduced rather than encouraged; and the project created disputes rather than collaboration among local residents (Chernela 2005). Furthermore, there is an ongoing debate between the anthropology of conservation and conservation anthropology, which prevents meaningful collaboration from taking place. Anthropologists critique approaches to conservation that tend to be based on Western ideals (e.g., Brockington 2002; West 2005), while conservation anthropologists question the implications of anthropological ethical positioning on conservation in relation to the protection of the nonhuman subjects they represent (e.g., Shoreman-Quimet and Kopnina 2011; Kopnina 2012).

Dynamic indigenous communities

Despite the extensive literature on problematic CBC partnerships with indigenous populations, local people are not passive bystanders in these processes. Individuals and communities adapt and change in response to the opportunities with which they are presented. Local involvement is not only influenced by project methods and implementation but also dependent on individuals' interests, expertise, and experiences, often drawing on beliefs and knowledge acquired through a complex history of encounters and exchanges with people and practices from non-indigenous cultures (Rival 2016). For example, through her work with the Huaorani, Rival (2016) explores Huaorani encounters with the Texas-based oil company Maxus Energy Corporation, who have built 'oil-funded' schools and missionaries in and around Huaorani territory. The Huaorani implement contemporary strategies aimed at preserving control and autonomy in their communities, such as being involved in local environmental and activist groups as well as rallying other indigenous groups to assist them in their fight.

During my own research with the Tikuna people living in a protected area in the Colombian Amazon, I documented data, which show how a combination of ontologies can coexist and influence local environmental perceptions and notions about conservation, landscape, and wildlife. These ideas are discussed in the case study.

CASE STUDY

Human-nature interactions among Tikuna communities in Amacayacu National Park

The following case study is part of my Ph.D. research on human-nature interactions among the Tikuna people living in the Amacayacu National Park (ANP) in the Colombian Amazon, which I carried out between March 2007 and June 2009. During this time, I began to document the expansive ecological knowledge of the Tikuna people, exploring Tikuna culture, resource use, and local perceptions of nature. A number of historical and key events led to the current ethnic and demographic situation being as it was at the time of my research. Through discussions with local research assistants, I learnt that in the past the Tikuna shaman had entered an altered state of consciousness to journey through time and across species boundaries using a cognitive technique to gain access to otherwise unattainable objective knowledge about plants and animals. However, when I was there, this tradition had come to an end with the death of the last shaman only a few years before (Parathian 2015). I was interested in how this event—along with a push by the government to develop 'ecotourism' in the Colombian Amazon as well as the recognition of the ANP as a Biodiversity Hotspot (Myers 2003) (which encouraged a growing number of researchers to the area, whose knowledge like mine was based on Western logic)—had influenced people's interactions with wildlife and their ideas about territory.

During my study, six indigenous communities were living in the ANP. The main ethnicity was Tikuna, with a minority of Cocama and Yagua ethnic groups. The majority of people were also practising Christians (PNNA 2006). Due to time and funding constraints, I carried out research with just two of the communities, Mocagua and San Martín. These two predominantly Tikuna communities were of particular interest to me because of the different pressures experienced by each, and the impact that their distance from the tourist centre and transport links had on local livelihoods and people's ideas about wildlife and conservation.

Changes in the village

Traditionally, the Tikuna people led a semi-nomadic hunter-gatherer lifestyle, residing in large, multi-family roundhouses, referred to as *malocas* (Nimuendajú 1952). The maloca played a vital role in establishing social hierarchies and assisting the spread of traditional knowledge (Hugh-Jones 1995). In the 1970s, indigenous reserves were established in the Colombian Amazon and indigenous people were sanctioned by the government to relinquish their hunter-gatherer lifestyles and move to more accessible fixed settlements along the Amazon River. Consequently, the Tikuna experienced various processes of adaptation, including the restructuring of social organisations, and adopting agricultural practices accustomed to a sedentary lifestyle such as cultivating staples in home gardens or *chagras*. Visiting missions built churches and schools, which the local people were instrumentally forced to attend (Franco 2006). While the maloca reflected the communal hunter-gatherer lifestyle, the government's single-family occupancy dwellings meant authorities could easily monitor each family, administer medicines, and ensure indigenous children receive state education (DANE 2005).

Natural resources, conservation, and ecotourism

Since the 1900s, the Tikuna were visited by traders and colonialists keen to 'explore' the Amazon's wealth of resources. High numbers of local people were employed to work on expeditions, obliged to help with the exploitation of natural resources (specifically rubber and animal skins); as a result, natural resources suffered a sharp decline. At this time, locals were paid with commodities such as tobacco, diesel, and shotguns (Riaño-Alcalá 2008). This was followed by the arrival of the bushmeat industry, large-scale commercial logging, live animal trafficking, dynamite fishing, gold mining, and cattle farming (Matapí and Yucuna 2008). Subsequently, in 1975, the region was legally recognised as a protected area, and the ANP was established covering 2,935 sq. km of seasonal rainforest, with a goal to conserve Colombia's endangered species and cultural heritage. Under Colombian legislation, subsistence hunting by indigenous people was permitted, while commercial hunting was made illegal (Gruezmacher 2008).

In 2003, as part of a national regime by the government to boost the country's economy and improve Colombia's global image, the ANP was hailed as one of the most biologically and culturally rich regions in Colombia. A four-star tourist development was constructed by an international tour operator in 2006; this included a visitors' lodge and restaurant built next to Mocagua. Transport links were improved, with regular chartered flights from Bogotá (the capital of Colombia) to Leticia (the capital town of the Amazonas region) and high-speed motor boats from Leticia to the ANP. As such, researchers and tourists flocked to the region. The new tourist development was soon providing 90% of families in Mocagua with jobs as cleaners, cooks, waiters, and front of house staff. Increasingly fewer people in Mocagua had time for subsistence activities and instead used their salaries to buy meat, fish, rice, and other food stuffs. It was typically older men and hunters who had the knowledge and skills to track animals and who regularly found work as guides on research projects. However, with the new development, women and young people were also trained to lead groups of visitors into the forest; this meant that less time was spent by women in the *chagras* or at home looking after young children who were instead cared for by their siblings.

While some researchers frequented San Martín, its relative inaccessibility in comparison to Mocagua meant tourists were less inclined to visit. In addition, because of its location, people from Mocagua remained informed about employment opportunities as they developed, whereas poor satellite reception made telephone communication with San Martín's residents near impossible. Without speaking directly with Park staff, it was relatively impossible for people from San Martín to remain up-to-date with tourist agendas. Ironically, one study showed that residents from San Martín felt intentionally omitted from the very processes that had been put in place to encourage their collaboration (Gruezmacher 2008). These circumstances (among other influences discussed in the following section) meant that most families in San Martín continued to rely on traditional skills and crafts to earn a living.

Methods

Part of my research involved interviewing and observing the daily activities of local people in Mocagua and San Martín. I interviewed 55 women, 53 men, and 137 children, and lived with various families in both communities for extended periods, participating in daily chores and accompanying men, women, and children in the forest. The forest held important cultural and financial value to the local people; individuals exchanged and sold natural resources. Women wove mats and baskets, and made jewellery from feathers, bone, seeds, and palm raffia, selling their handicrafts at markets and to passing tourists. Despite these communities officially being recognised as "indigenous Tikuna communities" (PNNA 2006), each one had developed in different ways since being first established in the 1970s; subsequently they had very different opinions about some of the changes that had occurred in the region and their associations with nature.

Findings

Mocagua

In Mocagua, as a consequence of the socioeconomic processes set out above, and the relatively high ongoing frequency of interactions with tourists and researchers compared to San Martín, the majority of families found frequent and regular paid jobs in tourism or as research assistants. A number of people in Mocagua worked on long-term conservation projects, which influenced their views about biodiversity and conservation, with many people saying positive things about conservation and the benefits it provided. I spoke to several hunters from Mocagua who worked as forest guides tracking animals on research projects and for tourists. They told me it had become unprofitable to hunt certain species

such as tapirs (*Tapirus terrestris*) and large-bodied primates like woolly monkeys (*Lagothrix lagotricha*), red howler monkeys (*Allouata seniculus*), and white-fronted capuchins (*Cebus albifrons*), as it made it increasingly difficult to find wildlife that tourists and researchers were paying to see. Furthermore, forest guides said that when they failed to find animals quickly, tourists returned home disappointed, did not pay them well, and would not return the following year. As a result of the growing number of guides in Mocagua and mounting economic benefits through research and ecotourism, the chief and committee of Mocagua, alongside scientists and National Park authorities, made a decision in 2006 that it was in the community's interests to place a ban on the hunting of endangered woolly monkeys and white-fronted capuchins (Parathian and Maldonado 2010; Maldonado 2012).

Encouraged by the growing number of tourists visiting their community since the construction of the visitors' lodge, several men and women from Mocagua further exhibited their entrepreneurial skills by setting up small-scale market gardens and wood-carving businesses, producing jams and whittling small souvenirs and artisan-style kitchen utensils for tourists to buy. One man, B.C., constructed a traditional *maloca* or roundhouse, as a place for tourists to stay overnight and hear folk stories told by his mother, *Abuela* D.J. I saw local people devoting time, money, and energy to projects, as they adapted to the rapidly changing circumstances in their community. After just two years in operation, the tourist development in the ANP was deemed unprofitable and closed down by the owners. The local people who were employed by the company were put out of work with no prior warning. One researcher told me, "While ecotourism had been sold as a promising socioeconomic enterprise to local people, it brought with it negative cultural and societal manifestations" (Anonymous pers. comm. 12 February 2007). However, once over the initial shock of job losses and redundancy, noticing a gap in the market, the women's group in Mocagua showed their initiative once again. The following year, they set up their own 'traditional' restaurant, where tourists could pay to eat locally grown, freshly cooked, authentic Tikuna food, making use of skills they had learnt whilst working in the professional kitchen at the visitors' lodge.

San Martín

In San Martín, the majority of people identified themselves as "pure Tikuna". Adults and children of all ages spoke Tikuna fluently and many of the traditional practices that were no longer carried out in Mocagua were still practised in San Martín, such as regular family hunting trips, the frequent capturing of wild animals as pets, and traditional ceremonies including the *Pelazón*—a ritual which welcomes young Tikuna men and women into adulthood as they take on the responsibility to generate life and maintain equilibrium between the Tikuna and nature (Prado and Betancourt 2004). The *Pelazón* is celebrated through festivities involving feasting, drinking, and dancing, where young initiates are dressed up in ornate head gear and intricate costumes made from palm fibre decorated with natural dyes, feathers, and seeds. Their skin is painted with body paint from the *huitoto* fruit and hair is plucked or cut from the front of their scalp to allow new growth to come through (Prado and Betancourt 2004).

The chief and local committee of San Martín encouraged families to speak Tikuna at home. Also, although children attended school, it was run by a community elder and lessons were taught in Tikuna. While opportunities for work through tourism were far scarcer in San Martín compared to Mocagua (because of San Martín's remoteness from the main transport link and tourist centre), the community made concerted efforts to protect their Tikuna identity and cultural heritage. This meant that people in San Martín found their niche, profiting through work as forest guides with researchers keen to employ Tikuna "experts" with traditional knowledge about the forest and wildlife. Despite this, some people in San Martín felt it was unfair that they were not benefitting as much as people in Mocagua. This resulted in opposition towards conservation projects and tourism, and created tension between community members and National Park authorities.

One family in San Martín that was particularly influential in driving the motion to "protect the community's Tikuna identity" were the G-family. The members of the G-family made frequent hunting trips and were seasoned experts in traditional ecological knowledge. The great grandfather from this family was the last living shaman in the region, and although his sons and grandsons were not practising shamanic techniques themselves, they had gained extensive knowledge from him. The oldest brother and head of the household (L.G.) was committed to teaching his own children about their Tikuna heritage and culture. As such, shamanism played a significant role in the community and shamanic beliefs still shaped people's perceptions about the natural world in San Martín. Unsurprisingly, L.G., his father, and his brothers were well-respected hunters in the community and popularly recognised as reliable and experienced forest guides by researchers.

As I participated in forest excursions with L.G., I got a chance to observe his in-depth ecological knowledge. For example, L.G. could predict which way a tree would fall during a windstorm, where a group of monkeys would sleep at dusk, and in which fruiting tree they would be found the following day. He could prognosticate the patterns and behaviours of wild animals and their movements simply by listening to them and observing the weather and the seasons. He detected animals during the night when they were visually untraceable, by tuning into their scent and the sound or warmth of their breath. He also noted signs of danger and listened carefully to "what the forest was telling him" before, during, and after going into the forest. Whenever entering the forest, L.G. left tobacco for *la madre monte* (the spirit mother of all beings who protects the forest) in the large *ceiba* or Kapok tree (*Ceiba pentrada*), referred to in the Tikuna creation myth as the place where the spirit mother resides. L.G. explained this would keep him safe and bring him fortune on future hunting trips. On one occasion, having heard the alarm call of a black caracara (*Daptrius americanus*), our

trip was cancelled for fear of upsetting *la madre monte* and causing subsequent misfortune to the village.

On returning to the village following one of our expeditions, I asked L.G. if he could tell me how he viewed his relationship with the forest. He took a piece of paper from his daughter's exercise book and drew a diagram to illustrate the Tikuna's relationship with nonhuman entities and supernatural beings governing and residing in Tikuna territory (Figure 1).

In describing his drawing, L.G. explained that agreements are maintained between the Tikuna people and the forest through shamanic communication with spirit guardians, plants, and animals, with whom the Tikuna share and manage territory. A gift should always be given to *la madre monte* at the *ceiba* tree before hunting or extracting resources from the forest as a way of thanking and honouring the forest for providing to the community. These reciprocal relationships are represented in the diagram through double-headed arrows connecting different elements of the forest to the Tikuna person. The shaman is represented by a crown over the Tikuna's head, governing his thoughts and overseeing his actions. Humans and nonhuman entities enter into agreements and social interactions via the shaman, and together they maintain healthy abundant environments. Porous boundaries between humans and wildlife mean these exchanges and interspecies encounters open up possibilities of becoming other species and gaining profound insights into the lives of companion animals.

These ideas are rationalised through logic derived from Tikuna folklore and cosmology based on animism. The Tikuna believe that life is made up of three worlds—the world above, the intermediate world, and the world below. Although the locations of these places are known to the living, no one but the shaman can reach them. Animals referred to as 'persons' can transcend both upper and lower realms and are capable of shifting their physical form depending on the spirit they embody. The ability to shape-shift is reasoned through the animist belief that every creature has an underlying causal nature, a 'spirit' or 'soul' which is uniquely responsible for its appearance, behaviour, and characteristics. I heard women in San Martín refer to this as a *capa* or 'cloak', when describing how certain children are born wearing an animal's *capa* and therefore exhibit certain species' characteristics. For example, one child was said to wear the cloak of the giant river otter (*Pteronura brasiliensis*) as the boy was a strong swimmer and ate a lot of meat. During shape-shifting, the internal essence remains the same while the physical form is interchangeable. For the Tikuna, only when an animal becomes part human in its physical form is it considered spiritually powerful; e.g., 'Ariana', a female shaman (and spiritual form of the hummingbird) who longed to cut the 'hair' of the sun, and hence transformed into a hummingbird to dart the heat of the sun's rays.

Figure 1
Diagram of Tikuna relationships with nonhuman entities and supernatural beings governing and residing in Tikuna territory, drawn by a hunter from San Martín in May 2007

Central to these concepts is the Tikuna creation myth, which teaches the idea that the world is controlled by spirits and forces that determine the course of everyday events, centred around the *ceiba* tree. The *ceiba* tree was the only living thing in existence at the beginning of creation before there was light or water. It was rooted in the earth and tied to the sky. Then, one day when the tree was cut it fell to the ground and shone light on to the earth. Its branches spread to form the winding tributaries of the Amazon River. Its transformation into a great water system and vast forest landscape caused the world to expand and led to the creation of all living beings. Neither animals nor humans formed separate groups at this time but were clumped together from a single place of origin at the *ceiba* tree, home to *la madre monte*. The only group that stood alone were the birds, as they were messengers who travelled between the world above and the world below.

L.G. added that, among the forces at play influencing the interactions between the Tikuna and the forest, exist agreements and relationships forged between the Tikuna people and non-indigenous visitors. These interactions involve the exchange of traditional knowledge and natural resources for commodities and money, which he drew as dollar signs and a machete in the diagram. He explained that for these transactions, a balance must also be maintained in order to keep *la madre monte* content, so that she continues to provide for the community and maintain a healthy and abundant forest. As he understood it, resources taken from the forest (by large commercial companies) and knowledge shared with visitors had exceeded what had been returned to the forest and the community in terms of skills, money, and commodities. This had thrown things off balance and consequently local animal and fish stocks were in decline. Furthermore, L.G. believed that as the younger generation of the Tikuna showed little interest in learning the beliefs passed down by their ancestors, the Tikuna relationship with the forest was deteriorating; for example, young people were overhunting, hunters from other communities no longer consulted with forest spirits or left gifts at the *ceiba* tree, etc. The long-term relationship with *la madre monte,* once nurtured by the Tikuna, was now being neglected and as a consequence the forest had begun to suffer.

DISCUSSION

Tikuna environmental perceptions in the ANP

Traditional Tikuna cosmology and folklore is based on animism which conveys certain ideas about animal classification and human-nature relationships in Amazonian ecosystems (Halbmayer 2012a,b). This type of animism is described as a relational ontology with other-than-human persons, natural elements, and features in the landscape, including rivers, trees, lakes, and cultivated areas (Santos-Granero 2009). Indeed, for most Amazonianist societies human-nature relationships tend to derive from animism, as opposed to naturalism, which is the basis of Western thought and scientific theory (Descola 2005). Descola's four ontological modalities—1) animism, 2) naturalism, 3) analogism, and 4) totemism, describe the different ways that humans relate to nature, dependent on the perceived continuities and discontinuities between the interior and physical features of humans and nonhuman species (Descola 1992, 1996, 2005). Generally speaking, animist societies conceptualise a deep understanding about nature when compared to naturalism, reading the behaviours, thoughts, and feelings of nonhuman entities in human terms.

People who are animist believe that nonhuman entities are endowed with agency, intention, and intelligence, meaning every element of the natural world has an independent ability to act of its own free will. It supports the idea that besides humans, nonhuman species and spiritual beings are sentient and have souls, and yet differ in their physical forms and habitual modes of engagement with the environment (Descola 1996; Bird-David 1999; Brody 2001; Viveiros de Castro 2002, 2007; Hornborg 2006). Viveiros de Castro (2007) links Amazonian animism to what he terms "perspectival multinaturalism," whereby nonhuman beings appear outwardly different and yet see themselves behaving according to the same cultural notions as humans. For example, when a tapir drinks from a salt lick, the tapir sees itself as a human drinking manioc beer (a traditional fermented drink for many Amazonian societies). Nonetheless, animism is not merely about attributing a spiritual nature or anthropomorphic feature to nonhumans, but is fundamentally about social engagements (Cormier 2003). This is central to the way the Tikuna view their relationships with both the natural and supernatural world, which means the dividing line between humans and nonhumans is often less defined when compared to the beliefs laid down in the practice of Western science (Descola 1996; Hogan 2013).

Similarly, the Gimi-speaking people living in Maimafu village in Papua New Guinea understand "personhood" through negotiations and engagements between people and animals (West 2005). The Gimi establish a view of the forest produced through exchanges between people, ancestors, and animals. They view humans as generative of, and generated by, social relations with what the Western world (but not the Gimi) categorises as "nature." As West explains,

> "When Gimi conceptualize and use biological diversity for their subsistence and ritual needs, they are taking part in dialectical transactive relationships that produce them as persons, animals as active agents, and forests as living social arenas. What has been translated as 'environment' is not simply a place filled with floral and faunal resources waiting to be used or made into commodities, it is a place of social relations between the living and the dead" (West 2005: 633–637).

L.G.'s account of how the Tikuna relate to the natural world illustrates the significance of animism underlying much of the reasoning behind the Tikuna interactions with wildlife. It also demonstrates how new ideas and values can be woven into existing belief systems as well as how this can strengthen local cultural traditions when given a locally applicable explanation (which may differ from the reasoning provided by science or Western logic). This is a reminder that at any given time, different cultural beliefs and practices can coexist within a community, with people expressing varied opinions about collaborations, creations, and developments (Cocks 2006). As Adamson suggests, "People, citizens—indigenous or not—can still side with a mine or dam, and should choose jobs or money, depending on local needs" (Adamson 2012: 18). Indeed, presented with different challenges and opportunities, indigenous people in Mocagua and San Martín have demonstrated, to different degrees, economic entrepreneurship whilst maintaining a network of encounters with human and nonhuman entities through carefully nurtured relationships based on Tikuna culture and tradition. These data suggest that local environmental perceptions are not only shaped by 'traditional' beliefs but that the Tikuna express cosmopolitan or 'hemispheric' identities influenced by global trade, conservation initiatives, and tourism (Gellner 1993; Beroš 2016).

L.G. is a skilful storyteller who applies 'culturally appropriate' logic and context-specific language to describe processes of exchange and exploitation by non-indigenous stakeholders involving money and material goods. Detrimental human-nature interactions overseen by *la madre monte* and the shaman are explained as causing the decline of local biodiversity. These processes are thus placed within a web of relationships that situate the Tikuna and their interactions with nature at the heart of the forest environment. Figure 1 shows how animist and non-animist ontologies are combined by the narrator, as they animate those entities and elements, which would otherwise be difficult to place within traditional Tikuna explanations about the world, such as biodiversity loss and sustainability. This logic not only strengthens the storyteller's narrative, which convincingly conveys the importance of nurturing reciprocal exchanges with the forest, but also highlights the importance of protecting those components of indigenous history and culture that attribute agency and subjectivity to nonhumans, and which are perceived to have epistemological intention.

For the Tikuna, the concept of personhood and the associated social relationships which form as a result are

key to the Tikuna identity. The Tikuna people are constantly entering into new agreements and engagements with 'others' (both humans and nonhumans). In doing so, the Tikuna are making and remaking the idea of who they are at any given time. Their identity is realised through their relationships and transactions with others and the impact of social and cultural processes of globalisation. The events in Mocagua illustrate the realities faced by indigenous people living in a protected area and demonstrate how so-called 'vulnerable' communities can often find ways to adapt their lifestyles and expand their skills, building community resilience and autonomy. In the same way that the Tikuna hunters read and respond to the behaviours of wildlife in the forest, people in Mocagua and San Martín observe and react to the effects of social and cultural changes, state policies, economic and environmental transformations, and demographic pressures in their communities. These findings suggest that apart from in-depth knowledge about local beliefs and practices to inform conservation, it is imperative to explore the complexity of local communities living in protected areas.

CONCLUSIONS

Improving CBC partnerships in Amazonia

While it is true that certain types of indigenous knowledge fall outside the realm of Western understanding, it has also been found that Western and indigenous knowledge systems share fundamental attributes that are mutually supportive and reveal unexpected insights for conservation (Deur et al. 2015). In an interdisciplinary project carried out with the Matsigenka people in the Peruvian rainforest, researchers soon discovered the quality and quantity of data increased significantly when they worked with the local people. Consequently, they incorporated local classification systems and regional indigenous vernacular terminology alongside scientific vocabulary to develop their understanding of local forest diversity (Shepard et al. 2001). Furthermore, a study by Rival (2014) carried out at three sites in Ecuador and Southern Guyana demonstrates how the heterogeneity of human knowledge allows knowledge-sharing between indigenous communities and scientists. Indeed, other studies indicate that 'traditional' and 'scientific' knowledge are not necessarily categorically antithetical, and that associating the study of the natural world exclusively to the West can be highly problematic and inaccurate (e.g., Pires and Prance 1985; Rival 2014; Bonta et al. 2017), whereas allowing local spokespersons to express their own visions and versions of the world is an important step towards appreciating cultural diversity and understanding the ways different meanings inform and shape landscapes (Zanotti and Chernela 2008).

More than 25 years ago, Redford and Stearman (1993) presented a document to the non-indigenous global conservation community, on behalf of COICA (*La Coordinadora de las Organizaciones Ingígenas de la Cuenca Amazónica*), which represented 229 native Amazonian groups. The document addressed problems arising in indigenous communities in Peru, Bolivia, Ecuador, Brazil, and Colombia as a result of conservation policies implemented by non-indigenous scientists that did not support local perceptions of nature. The document concluded that the objectives of scientists were incompatible with the agenda of local community groups (COICA 1989). Indeed, where CBC partnerships have been implemented and monitored in Amazonia, findings suggest outcomes vary from site to site depending on a number of interrelated factors (Chapin 2004; West et al. 2006).

Conservation success is contingent on developing positive local attitudes in addition to providing tangible assets. Where standards are met, in some communities financial schemes become necessary and important facets of people's lives (Gordillo et al. 2008). Take for example, the small-scale trade of artisan goods by people in San Martín, and the regular salaries received by ex-hunters working as forest guides in Mocagua. Furthermore, entrepreneurial opportunities enable indigenous people to enrich and diversify their livelihoods, such as the tourism training received by employees in Mocagua, which later proved valuable when setting up community projects. In addition to these examples, there are several other cases, although not documented so well, of indigenous communities using entrepreneurship to galvanise their struggle, gain respect, and protect their territories within the dominating systems around them (Tsing 2007; Tapsell and Woods 2010).

As can be interpreted from the drawing described by L.G., the trade-off between cultural integrity and the commercialisation of nature generates an interaction with non-indigenous stakeholders that can affect the traditional beliefs and practices of indigenous communities. While tour operators may attempt to "add value" to nature through tourism, and researchers may "add value" to ecosystems through biological and cultural conservation, a successful CBC partnership is one which can provide benefits to the local people and wildlife while preserving local integrity and identity (Fuller et al. 2005). When indigenous interpretations of the environment are prioritised or given equal standing to other knowledge systems, intercultural collaborations may benefit to a greater capacity through the sharing of expertise and empowerment of local communities (Zanotti and Chernela 2008).

Embracing transcultural communities

As I have shown, different cultures, beliefs, and practices exist in communities, and are inscribed into landscapes. For indigenous communities managing the constraints of living in a protected area, this will influence how people perceive, innovate, and live with nature (Halbmayer 2012a,b; Rival 2012). Whether or not traditional knowledge systems and scientific reasoning are complementary, being accepting of different ontologies and learning from diverse ecological information has the propensity to support a variety of interpretive and explanatory possibilities. Moreover, where ideas coexist, conservation initiatives can be implemented without being constrained by one common expectation or logic (Nicholas 2018). While the hemispheric identities of indigenous people can help conceive new ways of understanding our place in the natural world (Gellner 1993), overlapping and shifting opinions

of the environment and wildlife promise great potential for the acceptance of alternative ontologies in science.

In this paper, I have demonstrated that in addition to research on human-nonhuman relationships, considering the transcultural nature of human communities has the potential to make distinct contributions to environmental practice. While establishing different societal narratives and introducing new concepts into science and society requires a change in the way we talk about and teach ecological processes and environmental issues (Bell and Russell 2000), conservation science supported by the cultural theory and detailed ethnographies of social science could offer new horizons for conservation (Milton 2013).

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