

Different Natures of Reality Inform Different Realities of Nature: What Karen Perceptions of Forest Reveal about Nature Conservation in Indigenous Contexts

Man Han Chit Htoo^a, Bram Steenhuisen^b, and Bas Verschuuren^{b,#}

^aIndependent Researcher, Myanmar

^b Forest and Nature Conservation Policy Group, Wageningen University and Research, Wageningen, The Netherlands

[#]Corresponding author. E-mail: bas.verschuuren@wur.nl

Abstract

Karen people's interactions with the forest are informed by their ontologies. Important aspects of these ontologies are the influence of spirits, the cycle of the moon and communication with nonhumans. We foreground that Karen ontologies and knowledge systems are heterogeneous yet different from other ontologies and knowledge systems informing forest conservation in Myanmar (Burma). We recognise that interaction between Karen people and other conservation actors needs to be understood in the context of socio-economic and transformative political factors and is affected by spirits and other nonhumans. Based on empirical research, we argue that Indigenous people and conservationists can better support each other if they are each understood concerning their own ontology. This way, spirits and other nonhumans can be recognised as having agency in forest management and governance. We demonstrate how spirits, nonhumans and religious beliefs affect Indigenous ontologies and prompt us to think of ontologies as heterogeneous and overlapping. We conclude that moving past Eurocentric dualisms opens up new ways to think about how different ontologies inform our ideas about what is considered important in making forest conservation in Myanmar more sustainable and socially equitable.

Keywords: forest and nature conservation, ontological pluralism, Indigenous local knowledge, sacred natural sites, modes of identification, Karen people, Karen State, Myanmar, Burma

INTRODUCTION

Current research suggests that Indigenous Peoples have tenure over approximately 30% of the earth's surface (Garnett et al. 2018). While these lands overlap with 40% of protected areas, they constitute an overall larger share of terrestrial area-based conservation than designated protected areas on all continents (Garnett et al. 2018). However, Indigenous Peoples'

contribution to meeting global conservation targets is only belatedly recognised by conservation scientists, practitioners and policymakers who have historically had a difficult relationship (Tauli-Corpuz et al. 2020). These developments have led to an increasing number of pleas for the inclusion of Indigenous Peoples in the conservation of forests, nature and biodiversity (Garnett et al. 2018; Pascual et al. 2017; Fa et al. 2020).

Respectful, equal and peaceful collaboration between mainstream nature conservation organisations and Indigenous Peoples depends on a multitude of situated factors. Globally, these range from historic legacies of colonisation to current politics of development and conservation (Tran et al. 2020). In Asia, more generally, the politics of state-building have foregrounded a focus on neoliberal economic developments that have quite often worked to the detriment of traditional

Access this article online	
Quick Response Code:	Website: www.conservationandsociety.org.in
	DOI: 10.4103/cs.cs_83_21

forest governance systems (Verschuuren and Furuta 2016). In Myanmar, foreign conservation NGOs are known to align with the vested power interests of the government and business. This resulted in a politics of conservation that has failed to put Indigenous Peoples in charge of conservation efforts in their territories (Woods 2019). In Myanmar, such politics has long been driven by resource extraction and in the case of Karen State, seven decades of armed conflict with the Myanmar military, which continues to the date of publishing this article.

The vast majority of Myanmar's remaining 16 million ha of intact forests are located in its border areas, encompassing one of Asia's most biodiverse regions (Bhagwat et al. 2017; Reddy et al. 2019). The country's third largest ethnic group after the Bamar and the Shan are the Karen, who inhabit large areas of forest. There are approximately 20 subgroups of the Karen language family that come from diverse religious, cultural and regional backgrounds (Thawngmung and Cho 2013). The people we interviewed self-identified as Bwe Karen or Geba Karen in Thandaunggyi township and Pwo Karen in Kawkareik township. In this research, we focussed on human-spirit relations and the role of agency that spirits have in forest-related practices. Since research has indicated that human-spirit relations across these subgroups appear largely consistent (e.g., Paul et al. 2021), we refer to Karen rather than these individual subgroups. We use Myanmar to refer to the country and Karen State to refer to the geographical area—with no claim or political connotation.

Our research was conducted in dual administrated territories by the Myanmar government and the Karen National Union (KNU) political organisation. We caution against linking interviewees' perceptions to the administration of the research locations. Decades of internal displacements of people means that people now live under one administration but may have grown up under another. People also appeared to frequently travel through different administered areas. Interestingly, the human-spirit relations described in studies that were undertaken in areas under KNU administration, inhabited mostly by S'gaw Karen, are remarkably similar to our findings (Paul et al. 2021). This is important because, over the past decades, our study areas have been much more exposed to Myanmar's dominant Bamar culture and state-building efforts (education, security, law) by the central Myanmar government. Communities in KNU-administered territory have been subject to an autonomous governance system that increasingly includes cultural rejuvenation as an objective.

While the governance context informs us about the relationship of Karen people with state and non-state actors, we engage with the Karen people as bearers of Indigenous knowledge in the context of their ontologies. We focus on how Karen interact with spirits and other nonhuman beings because we think that these relationships are often overlooked but play a significant role in forest practices and governance.

Using modes of identification to foreground ontological differences

Different understandings of forests by Indigenous Peoples and more 'conventional' conservationists have resulted in added layers of complexity about what these forests represent and how they can be best looked after. According to Vaske and Donnelly (1999), the root of such differences can often be found in deeper underlying cultural values and beliefs and lead to conservation conflict. What is the role of spirits in forest conservation in Myanmar? How does the moon affect forest-related practices, and how do assemblages of humans, nonhumans, plants, spirits, animals, and forests affect the way conservation is conceptualised and practised? Unfortunately, such ontological differences that permeate different beliefs and cultural values are often a blind spot in conservation efforts (Madden and McQuinn 2014). At the same time, we argue in line with Theriault (2017) that human-spirit relations can also have a profound effect on politics, in our case, the politics of conservation, especially where worlds meet. Studley and Horsley (2019) demonstrate how such intricacies manifest through behavioural practices that constitute conservation by Indigenous people. Consequently, the importance of multiple ontologies in shaping our thoughts and practices inevitably prompts us to reconsider how we think of nature and how we practice nature conservation.

Our field research undertaken with members of the Pwo-, Geba- and Bwe Karen people in Karen State in Myanmar underpins the implications of drawing on multiple ontologies and including human-spirit relations for the field of conservation. We identify the role that spirits have in the perceptions and ontologies of the people we spoke to and reflect on how these are understood and acknowledged in nature conservation. In Karen State, a key aspect of Karen ontologies is shaped by the belief in spirits that dwell in the forests. These spirits determine the relationship between humans and nonhumans and provide a key entry point to understanding Karen's ontologies in relation to nature. To understand the mental process that occurs when humans encounter nonhuman beings—be they animals or spirits, we are inspired by post-dualist anthropologist Philippe Descola's (2014) 'four modes of identification model'. Our thinking has been animated by his postulation that our body and mind jointly engage in a process of 'identification' when we notice another being's appearance and behaviour. We recognise differences and similarities between that being and ourselves. In this process, we either attribute or deny a sameness of physicality and interiority, reflecting different understandings of human-nonhuman relationships and informing different ontologies (Descola 2013).

Approaching people's understanding of reality from this starting point helps conceptualise the role of human-spirit relations among the ontologies of various groups, in particular, Indigenous Peoples and modern science-based nature conservationists. Notably, sameness in interiority (the mind, the soul and consciousness—including intentionality, subjectivity,

reflexivity, and feelings) paves the way for humans and nonhumans to share ‘humanity’ at an ethical level. Both can be capable of reason, rational thinking, and acting with intention while being logically understood to share communication, feelings, and relationships. This, for instance, is the case when forest-dwelling spirits communicate with the Karen. The Animist mode of identification recognises the sameness of interiority between humans and nonhumans, while in Naturalism, this is denied. These two modes of identification we found to inform Karen perceptions of the forest, although the Animist mode of identification appears most prominent in our work. However, the adoption of mainstream religious beliefs and thinking diversifies Karen animist ontologies and challenges Descola’s more rigid separation of modes of interpretation and its seeming lack of ability to incorporate change. For this reason, we don’t conform our understanding of ontologies to Descola’s theory of ontology—which also includes the complexity of modes of relations.

Animism, as a mode of identification, sees nonhumans and humans as possessing an identical kind of mind but having bodies that are very different. This is opposite to Naturalism, which sees nonhumans and humans as having different minds but similar bodies (in terms of DNA, organs, etc.). This animist mode of identification features heavily in Karen ontology, as evident by their perception of relationships with animals, spirits, and other nonhumans in the forest. It should be noted that the animism theorised by Descola as a mode of identification “is quite different from its earlier social evolutionist and sometimes even racist incarnations, and it has provided an important foil for critiquing Western mechanistic representations of nature” (Kohn 2013). In this article, we thus do not refer to ‘animist’ and ‘animism’ in a sociological or religious sense. We do recognise the evolving body of work on animism and how this might also have implications for understanding the way that ontologies affect how conservation is practised (Bird-David 1999; Bird-David and Naveh 2008). However, when we delineate our research to encompass Descola’s specific modes of identification of human-nonhuman relationships, we create a space that allows us to examine human-spirit relations at the interplay of multiple ontologies. Descola (2013: 129) himself comments on one defining characteristic of animism:

... the attribution by humans to nonhumans of an interiority identical to their own. This attribution humanises plants and, above all, animals, since the soul with which it endows them allows them not only to behave in conformity with the social norms and ethical precepts of humans but also to establish communicative relations both with humans and among themselves.

In Karen ontology, spirits are the most prominent nonhumans and often mediate relationships between humans and animals and plants. By exploring human-spirit relations, we built an argument for taking these serious in terms of how they affect forest conservation practices and politics (Theriault 2017). Further to how we conceive of indigeneity, we stress how Hunt (2014) forces us to reexamine our understandings

of indigeneity based on how we engaged with Indigenous ontologies, as differentiated from western ontologies of indigeneity. We do so through a lens of multiple ontologies rather than focussing on related epistemologies because we feel such an approach offers new insights into how forest conservation is conceptualised in Karen realities in Myanmar.

In what is the complete opposite of animism, a naturalist mode of identification understands humans and nonhumans to have the same kind of bodies but different minds. While a human and an animal have almost identical DNA, share similar physical features, and are subject to similar biological processes, nonhumans are seen as lacking the qualities associated with a human mind. From this perspective, nonhuman beings lack culture; they are little more than things that move in a particular direction with intention. The naturalist mode of identification informs ontology that adheres to a nature-culture dichotomy, is dominant in the West and prevails in the natural sciences. In our research, a naturalist form of identification was also discernible in Karen perceptions of the forest, seemingly linked to people’s perceptions that were influenced by formal religion, Buddhism and especially Christianity, though in both cases, the vast majority noted a strong belief in spirits. This finding diversifies our understanding of the role of Christianity and Buddhism in biodiversity conservation in Myanmar (Swift et al. 2020). Those we interviewed saw no contradiction in identifying themselves as Christian or Buddhist, only to proceed describing their perception of the forest in ways that Descola would recognise as an animist mode of identification. When inquiring with an Indigenous Karen scholar and Christian about how best to put this seeming contradiction into words, he noted: “religion is in our head, traditional spirit beliefs are in our heart” (pers. comm. 2021). This underlines our understanding of ontologies as heterogeneous and overlapping rather than describing them as singular and predominantly ethnically determined (Ludwig 2016).

Embedding traditional knowledge in heterogeneous ontologies

One has to be able to grasp the ontology to accurately understand Indigenous knowledge. An ontology concerns understanding the nature of reality to determine what exists and how all that exists relates to each other (Caillon et al. 2017). An ontology is shaped slowly in society, often across multiple generations and usually changes slowly over time. As a consequence, one’s ontology “affect[s] one’s assumptions, belief systems, decision making, and modes of problem-solving” (Honore France in Hart, 2010: 1). Therefore, Indigenous people working in mainstream conservation and western academia as well as western scientists and conservationists working closely with Indigenous Peoples both experience the lasting influence of the ontology that shaped each of them as they grew up in their families, communities and cultures. We argue that Indigenous and non-Indigenous people alike should be aware of how this lasting effect of one’s ontology influences

collaborations in conservation through—different but equally valid—contributions, insights, and understandings.

Misinterpretation caused by an ontological discrepancy can lead to miscommunication, irritation, friction, or conflict. In Karen forests, what a tiger is to a biologist, to a Karen can also be a spirit temporarily manifesting as a tiger, as was mentioned by several people we spoke to. The theory of ontological self-determination (Ludwig 2016) urges us to respect Indigenous knowledge that is rooted in vastly different ontologies. As a result, ontological self-determination “takes the goals of Indigenous communities and their domains of enquiry seriously” (Ludwig 2016). To do that, “we need to, at least in parts, adopt the ontological perspective of an Indigenous community” (Ludwig 2016). Doing so implies a re-evaluation of what counts as valid knowledge in nature conservation—for what parts of the Indigenous wealth of perceptions of nature are seen as ‘knowledge’ by natural scientific conservationists? Studies focussing on traditional ecological knowledge often focus on integration, based on overlap or complementarity with Western scientific knowledge. The many cases of attempted integration between Indigenous knowledge and scientific knowledge show that “western scientists tend to be interested in the knowledge that fits in their own frameworks and does not require a shift in ontological perspective” (Ludwig 2016). The colonial legacy and power imbalances typical of conservation may change when Indigenous ontologies and the practices through which they are enacted are understood as a form of conservation in their own right. With this research, we aim to make visible Indigenous forms of conservation and how these may contribute to establishing new understandings of conservation and how these may replace and transform dualist western approaches to conservation (Johnson and Murton 2007). Hunt suggests that such ontological shifts and transformation require knowledge that is understood within the discipline, in our case conservation, but that it also requires us to question our understanding of how we frame indigeneity (Hunt 2014).

We are not alone in our endeavour to make ontologies more central to informing conservation. Pascual et al. (2017) recognise that different ontologies lead to the development of different epistemologies and focus on better recognition of knowledge systems in biodiversity assessment and nature conservation globally. A similar approach is being implemented through consulting multiple knowledge systems—concerning the ontologies from which these derive—as part of international biodiversity assessments (Pereira and Bina 2020; Pascual et al. 2021). The importance of recognising multiple ontologies has also been receiving increased attention in the field of anthropology as the ‘ontological turn’ (Ludwig 2016; Holbraad et al. 2017). While some research has been done on this (see Blaser 2013; Hunt 2014), the ontological turn has recently started to have more profound implications for the field of nature conservation (see Saxena et al. 2018). In the words of Descola (2014: 273), this urges us to “look for the roots of human diversity at a deeper level, where basic inferences are made about the kinds of beings the world is made of and how

they relate to each other”. Recognising multiple ontologies thus enables us to move beyond the dualist worldview that informed the nature-culture dichotomy that is part of Western scientific thinking. It provides a more prominent space for Indigenous people, their ontologies and epistemologies to take a more prominent position in the academic and socio-political contexts of conservation (Todd 2016).

RESEARCH METHODOLOGY

Our findings are based on 35 semi-structured interviews involving 47 people (31 male, 16 female) who self-identify as Karen living in and/or next to the forest. Interviews were conducted over the first two months of 2020 in seven villages within Thandaunggyi and Kawkareik townships in Karen State. We accompanied and observed interviewees’ forest interactions, such as; fishing, collecting non-timber forest products, paying homage to sacred natural sites, and tending to their plots. The interviewees were selected based on the type of engagements, activities and professions that related them to the forest. The result is a set of local experts consisting of traditional healers, firewood collectors, hunters, honey collectors, herb gatherers, religious leaders, carpenters, subsistence farmers, and small-scale loggers. Primarily because we excluded people under 18 years of age, the average age of interviewees is 55 years.

About half of the interviewees were known to one or two of the authors, in most cases superficially, in an informal capacity, either as distant relatives, neighbours, former colleagues, or acquaintances of these people using snowball sampling. Two of the authors spent considerable time in Thandaunggyi township since 2016 on social and work-related visits, as well as in Kawkareik township, the birthplace of one of the authors. To ensure a variety of perspectives, we relied on snowballing to find people we did not know yet. Most interviewees referred us to people outside our circles whose main activities took place in the forest. In particular, we employed between-subject triangulation by which different interviewees were asked about the same issue (Newing 2011). All but two interviews were recorded (MP3 audio file) with prior informed consent and subsequently transcribed and inductively coded. Anonymity was promised to encourage people to speak freely.

The majority of interviews were conducted in the Burmese language, the mother tongue of one of the authors, who is Karen. All interviewees in Kawkareik township villages spoke Burmese, often as their first language. In Thandaunggyi township, most people were bilingual. With non-fluent Burmese speakers or when people preferred using local vernacular, the researchers were accompanied by female native Burmese-Bwe Karen and Burmese-Geba Karen speakers from the communities. In general, the Burmese language was the primary option. With only a few exceptions, we conclude that Burmese as a primary language does not significantly influence our findings. We do, however, cover important forest relations in multiple languages where this is essential to ensure we grasp

the ontological understanding correctly in line with the level and details of our analysis.

In Burmese, for example, the word *Nat* refers to spirits. In Thandaunggyi Township, Bwe Karen also referred to *Nats* as *Thō khō moh` khīh`* (spirit), while Geba Karen also referred to *Nats* as *Dèsidèhnè* (spirit) and the more specific *Lòhnè* (river spirit), *Khòlòhnè* (mountain spirit) and *Thomuhné* (forest spirit). In Kawkareik township, Pwo Karen also referred to *Nats* as *Htee K`Cha* (water spirit) and *Tein K`Cha* (tree spirit), literally meaning ‘guardian’. *Nats* appear to be spirits who have always been spirits. We focus on *Nats* in this article, but the reference was also made to other more-than-humans. In two cases, spirits were distinctly referred to because they had lived as (heroic) humans in the distant past. Ghosts were referred to as yet a different category, having lived as humans in more recent memory. For clarity to the reader, we name plants and animals in English and Latin rather than unnecessarily offering a complexity of Burmese, Geba Karen, Pwo Karen and Bwe Karen languages.

Karen Perceptions of the forest, the role of *Nats*

In Karen ontology, humans identify with nonhumans largely based on an animist mode of identification and, to a lesser extent, a naturalist mode. Local Karen experts describe the forest as an important part of an intricate Indigenous belief system centred around *Nats* and appear to be rooted in an animist mode of identification. Those interviewed near unanimously perceive *Nats* as the ‘guardians of the forest’. They are the main factor determining people’s behaviour and activities in and about the forest. While not unique to the forest, the *Nats*’ relationship with other beings appears strongest inside the forest. As for any significant activity in the forest, climbing a tree to collect fruits or honey, burning an area of land for agricultural cultivation, and especially logging and hunting, permission needs to be asked from the specific *Nat* who inhabits that particular area. The forest is frequently described as ‘belonging’ to the *Nats*, who preside over humans, animals, trees, plants, and inanimate entities inside it, though they are not, per definition, seen as more powerful or important than humans.

Nats are often described in human terms, a common feature of an animist mode of identification because those are features that humans are most familiar with. A Buddhist monk noted that “[*Nats*] are alive because they have eyes, a nose, ears and a mouth, and a body”. A traditional healer said that “*Nats* are just like humans; they have their own ways. They have kids, and they travel a bit”. A hunter explained the differences between individual *Nats* by saying that “they have a different name, and like humans, they have different abilities and characters. For example, you (researchers) can read and write, and me, I can climb and hunt—we can do different things”. While humans are understood only to see physical things, the *Nats* see everything. In metamorphosis, *Nats* are believed to temporarily take on different physical forms—tigers are most commonly perceived as *Nats* manifestations. Metamorphosis

is also an element in the origin stories of people. An elderly traditional healer, stressing to us that what she was about to say had really happened and was not a myth, proceeded to explain the origins of the egret and the crow, which features 13 human-animal-plant metamorphoses.

The presence of *Nats* in the forest functions as a form of discipline for people’s actions in the forest in several ways. While *Nats* are believed to be living everywhere, they make their presence known by causing accidents or unexplained phenomena. The forest is perceived as hosting the most important, powerful, feared and respected *Nats*. As one female farmer noted, “in the forest, every tree and every mountain has their own *Nat*. The bigger the tree, the more powerful the *Nat*”. Hunters, in particular, noted the apparent retreat of the powerful *Nats* into more remote and undisturbed areas of the forest, with one saying that “in remote places, there still are powerful *Nats* where I have to ask the *Nat* for permission to hunt in that area”. A wood collector listed three places in the forest that are home to such bad *Nats* that “you are not allowed to farm around there; just let it be wild, stay away from there and let the trees grow there”. Others noted that in the forest, *Nats* can also be found “in the ground, in streams, on mountain slopes, and at paddy plots”, with muddy places being frequently noted as a particularly favourite place where *Nats* like to live.

Nats effectively regulate behaviour in the forest. The local experts interviewed noted that keeping the *Nats* appeased is the duty of anyone entering the forest. As a traditional bone doctor explained, “there are lots of dos and don’ts in the forest. You can’t just do what you like, if you do so, the *Nats* will take your soul... You should refrain from doing anything. If you cut the tree, it has a *Nat*. If you do *taungya* (traditional shifting cultivation), that area has a *Nat*”. A hunter noted that one has to behave appropriately when in the forest, “you can’t just enter areas with powerful *Nats* and behave badly and pee there. If you do that, you and your family get a punishment”. A honey hunter stressed that “one cannot swear and say bad words while harvesting the honey”.

Before carrying out a significant act in the forest, permission has to be sought from the *Nats*. A hunter said he asked permission from the *Nat* “with a candle and betel nut, or a cup of alcohol, and by asking, please provide me with an animal”. *Nat*’s negative response is usually received during or after the incursion into the forest in the form of a physical injury, mechanical accident, broken motorcycle, or missing animal trap. Smooth completion of the action means that *Nat* has given a positive reply. One traditional healer, however, did state her direct communication with a *Nat* by sticking a knife head down into the soil at the base of a tree “if by the next morning the knife has fallen down the *Nat* has not given permission, if the knife is still standing then the *Nat* gives permission and the tree can be cut down”.

The clearest case of *Nats* prompting disciplinary behaviour by humans concerns hunting practices. Some hunters stated they don’t shoot pregnant, breeding, or nurturing animals. These hunters consider it futile to shoot a wild chicken with

eggs as the *Nat* will intervene, causing the bullet to miss the bird. If they shoot such an animal by mistake, they have to apologise to the *Nats*. *Nats* also appear to impose a quota of one or two animals per hunting trip and permit killing only for self-subsistence, not for commercial ends. Breaking such rules causes the *Nat* to “punish your family, one of your family members will die”.

Communication between humans and nonhumans

Besides *Nats*, animals and plants are the other nonhumans that feature prominently in people’s perception of the forest, interacting with both *Nats* and humans. One farmer noted that before clearing a piece of forest for agriculture, he visited that place for seven days straight to ask permission from the *Nat* by saying, “this is the order of the king; please go away”. Another farmer warned the animals on the piece of forest that he was about to burn down for cultivation in advance. Visiting the area two days in advance, he would tell them, “Please take yourself and your children and move away; we will be back here in two days and burn it”. A local hermit was said to be able to talk to animals and inform them of the safest areas in the forest.

The Karen we interviewed interpret certain animals to be communicating omens, signs, or warnings using unusual appearances, particular behaviour, or certain sounds. Deer, monkeys, and birds are the animals most frequently mentioned. Deer coming to a village forebodes illness or disease, hornbills (*Bucerotidae*) are a sign of peace and prosperity to come, and the presence of the ‘monkey without a tail’—most likely a gibbon (*Hylobatidae*)—is an indication that the harvest will be good. Similar to *Nats*, relationships between animals are often described in human-like terms. A deer has ‘passed the exam’ when capable of evading traps. Certain animals are described as living in a hierarchical social relationship with other animals. Particular plants are also believed to positively influence the behaviour of certain animals as well as other plants. The Laurel Clock Vine (*Thunbergia laurifolia*) is seen as the ‘sweetheart’ of honeybees. The smoke of its dried leaves deactivates the bee’s intention to sting, just like “when two people love each other, one takes out the aggressiveness of the other person”. The Plumed Cockscomb (*Celosia argentea*) is a plant seen as ‘the parents’ of the rice paddy because planting it nearby helps the rice to ‘behave better’ as grains loosen more easily from the husk.

Another characteristic of the animist mode of identification concerns the perception that there can be a continuity of interiorities across two different bodies or physicalities by the transfer of an interior power from an animal into a human body (Descola 2013). What appears to be a Karen adaptation of this characteristic concerns the belief by hunters that the power of an animal is intertwined with the power of the *Nat*. The cause of the animal’s death determines whether or not its remaining body parts hold any power. If one manages to shoot and kill an animal, that is because that animal has already been given up by the forest *Nat*, who has stripped the animal of all its protective powers. However, when the animal dies of natural causes or when a body part has fallen off by itself, then these

animal parts still contain all protective powers and are highly valued and cared for.

Beautiful large antlers obtained by shooting an animal are appreciated for beauty only, while a small piece of an antler found on the ground in the forest is believed by one Karen man to protect his house from fire. Similarly, the ivory of a hunted elephant is believed to have no power. By contrast, we observed a logging elephant working in the forest, whose tusks had broken off in a fit of rage without human intervention. These tusks are understood to hold incredible power and are kept by the *mahouts* (elephant caretaker) for themselves. Similarly, teeth from wild boars are believed only to have power after the death of a natural cause, not when shot or trapped by humans. Certain wood is also perceived to be more powerful when naturally fallen off a tree instead of being cut off by humans. Such wood is used to filter bad spirits from one’s surroundings and keep one safe during travels.

Formal religion in modes of identification

The influence of formal religion on Karen’s perceptions of the forest is also noticeable. It should be noted that we have thus far discussed the spirit-dominated ‘animist’ mode of identification as one of the four forms of human-nonhuman relations classified by Descola. This mode of interpretation should not be confused with animism as a ‘religion’. Within Descola’s model—this interpretation of human-nonhuman identification understands there to be a similarity between body but not mind, thereby elevating humans above nonhumans. In this respect, the more recent influence of Buddhism and Christianity on Karen ontology has resulted in the adoption of elements from a naturalist mode of identification, noted by Hayami as multi-layered religious practices (Hayami 2011). Some religious beliefs and practices may contribute to nature conservation, but as we will explain, this is different from how Indigenous ontologies contribute to conservation.

Since the eighteenth century, Christianity was spread across Karen State by American, European and, more recently, Korean missionaries. Amongst the lowland Karen, it was preceded by Buddhism, which spread through contact with the neighbouring Mon people during the seventeenth century. Since the 1980s, monasteries in Karen State have increasingly been incorporated in the countrywide, centralised national monastic organisation of Myanmar (Hayami 2011). This seemingly effortless merging by Karen laypersons of their formal religion with a predominantly animist mode of identification is not surprising. Everyone we spoke to in Kawkaireik township identified as Buddhist, while those in Thandaungyi township identified as Christian (Anglican, Baptist, or Catholic), only to proceed—without our prompting—to describe perceptions of the forest dominated by spirits and human-nonhuman relations. Only the senior Buddhist monk (in part) and the Catholic father (more explicitly) professed that they did not believe in *Nats*. We further discuss how our research findings show the influence of religion on forest perception based on two main examples. First, we demonstrate Buddhist relationships with

trees and second, the role of the moon. Other findings pertain to regulating hunting and blessing water which we present before concluding this section with some general reflections on how this affects Karen ontologies and perceptions of the forest.

An interesting starting point to understanding the influence of Buddhism on human-nonhuman relations concerns relationships with trees. Such relationships are not mediated by a spirit but by the Buddha. Some 19 tree species are held in high regard by local Buddhists. Their ascribed importance relates to the role these species play in Buddhism. A senior Karen monk explained that 19 trees are seen as the ‘equipment’ or ‘utensils’ that belong to the Buddha: “Under those tree species, one or more of the 28 historical Buddhas attained enlightenment or, in the case of the Maitreya Buddha, will do so in future”. Out of these 19 trees, two carry particular importance. These are the Banyan tree (*Ficus benghalensis*) under which the most recent Gautama Buddha attained enlightenment, and the Gankaw tree (*Mesua ferrea*), the tree under which the future Matreiya Buddha is believed to obtain enlightenment. A nun noted that branches from the Banyan tree can’t be broken without permission from the *sangha*, let alone cut down the tree. People are also said to put Buddha statues next to the Gankaw tree. Its wood can only be used for particular ends by people who keep their precepts, for example, the building of a monastery.

The intricate perception of the forest as a continuous balance of relations between humans and nonhumans becomes even more complex when adding the role the moon plays in Karen ontology. The importance of the moon for the rhythm of life in the forest was noted by both Christian and Buddhist Karen. Karen State follows a lunar calendar, but the influence of the moon goes much further, influencing the day-to-day actions of humans and nonhumans in the forest. A majority of Buddhist and Christian hunters in all locations note that certain positions of the moon prohibit them from going into the forest to hunt. Full moon and new moon are considered off limits for hunting because, as one hunter put it, during those days, “animals in the forest are meditating and it was considered a ‘big sin’ to shoot them during this period. Animals, including fish, are also believed to look at the moon to know what time it is” and gather in certain places at certain moments in the cycle of the moon to eat together, making them easy prey for the hunters. A honey hunter noted that he only harvests honey during new moon nights as “on those nights there is a lot of honey in the hive”.

The lives of *Nats*, too, are influenced by the moon. In one village, no offerings can be made during the new moon, quarter moon, half moon, and full moon, for “these are the days when the [big] *Nats* have a meeting”. Certain plants are said also to be influenced by the moon. Bamboo, for example, should only be harvested from the forest during a waning moon. Bamboo that has been cut during a waxing moon will be eaten by bugs and will be unsuitable for construction purposes. One medicine man only uses leaves that are harvested during the *tazaungdaing* festival, which occurs during the full moon of *tazaungmone* at the end of the rainy season.

People’s religion also influences their behavioural code of conduct in the forest. Christians can’t hunt in the mating

season, and during the period of lent, neither kill pregnant animals nor kill without a reason to do so. Buddhists, as well as some Christians, note that it is ‘bad karma’ to shoot a pregnant animal as one would kill two lives instead of one. One hunter we interviewed felt ‘embarrassed’ to go hunting “because it is not good to hunt and kill animals according to Buddhist teachings”. In Catholic villages, we observed the use of water blessed by the local Father to scare away spirits. Some Christian Karen now enter the formerly off-limits deep forest because they no longer believe that *Nats* live there. As one farmer put it, “in the Bible, it says that everything is created by God, including trees and animals. But we are not animals, we are above animals.”

The role of Indigenous ontologies concerning nature conservation

Recognising Indigenous ontologies means that natural scientists are no longer the only, nor dominant, experts on nature conservation (Johnson and Murton 2007; Peterson et al. 2010; Todd 2016; Rubis and Theriault 2020). Indigenous Peoples with an understanding not just of ecology but also of human-nonhuman relations are nature conservation experts too. By extension, not just natural science but the humanities matter in nature conservation. Therefore, knowledge of forests can no longer be found only in universities and academic publications but also inside the forest itself and in Indigenous accounts and reports of life in the forest (Bartlett et al. 2012). As Indigenous Peoples are the ultimate experts of their ontologies, they should be in the driver’s seat of nature conservation efforts in their territories, effectively through their own institutions. This is still rarely the case (Todd 2016). In wildlife management too, when institutional arrangements are developed to “advance recognition of Indigenous rights, the dominant management discourses authorise and support institutions that they recognise, institutions that conform to Eurocentric assumptions” (Howitt and Suchet-Pearson 2006).

Concerning conservation research, there is a need to go beyond the natural sciences. Turnhout (2018) studied knowledge at the interface of science, policy and society and noted that “in practice, science tends to end up in a dominant position, in charge of the facts and of the problem definition, with non-scientific actors in the position of receivers of knowledge and co-creators of solutions or options”. Blaser (2009) provides an example of this through a deep analysis of how western scientific ontologies are at odds with Indigenous ontologies, which ultimately frustrates the success of a practical conservation partnership. To achieve mutual understanding, the proverb ‘to walk a mile in each other’s shoes’, holds merit for conservation actors with multiple ontologies, Indigenous as well as scientific. Natural scientists may dwell in the Indigenous landscape and grasp the beliefs, values, and understandings that underpin Indigenous ontologies. Indigenous Peoples may dwell in the forests of the natural scientist: mainstream conservation organisations, intergovernmental conferences, peer-reviewed publications

and academic institutions—access to all of which is still severely limited by barriers of costs, language, discrimination, and prejudice.

On the ground, a growing number of agencies and initiatives focus on the importance of Indigenous Peoples as conservation actors, including Indigenous Protected Areas in Australia, Tribal Parks in North America, and most prominently, the overarching Indigenous and Community Conserved Areas (ICCAs) consortium (Tran et al. 2020). However, the remaining big issue is how this intention to recognise Indigenous Peoples as conservation actors play out in reality. There appears to be “a lack of appreciation for how different constructs of nature in different ontologies permeate our values and actions” (Caillon et al. 2017, emphasis added). What, then, does treating Indigenous knowledge on equal footing with scientific knowledge by reference to its own ontologies look like for nature conservation efforts on the ground? Paige West (2016) provided an insight into the ontological and epistemological contestation drawing from her research:

“Sooner or later, conservation-related actors come to understand that all externally conceptualised or generated conservation interventions carry with them a set of ontological propositions and epistemic practices that [fall outside] most socio-ecological systems that exist in ecological diverse places [and] that this mismatch creates conditions whereby conservation fails”.

Consequently, the practical implication of the importance of understanding and recognising Indigenous ontologies is the need for internally conceptualised and generated conservation interventions that align with the ontological propositions and epistemic practices of the socio-ecological systems in question (Bartlett et al. 2012). This has practical consequences for nature conservation efforts on the ground as, according to Rubis and Theriault (2000), too often, non-Indigenous conservation interventions lead to acceleration, enclosure, commodification, and even dispossession of Indigenous lands. These developments are all too real in the present-day context of Karen forest conservation in Myanmar (Prescott et al. 2017; Woods 2019). In terms of collaboration, how might we craft encounters across ontological differences, and how might we do this in ways that minimise violence and maximise the possibility of encounters that are as peaceful, just, and open as possible (Law 2015)?

Given Karen perceptions of *Nats* as ‘guardians of the forest’, any nature conservation programme that does not include *Nats* would be equivalent to addressing political issues of national importance without the head of government present at the table. This begs the question of which stakeholders are invited to the table (human or nonhuman) and how they can be represented. Conservation actors should explore management or governance issues from different ontological realities: scientific and Indigenous. Constructing potential scenarios based on each different ontology would be one way to do so. This should happen right from the conceptual stage of understanding a conservation area or issue to become aware of perceptions, priorities, dos and don’ts held by natural scientists

and Indigenous Peoples, respectively. A conservation scientist may categorise the quality of forest habitat in Karen State by counting IUCN red-listed animal—and plant species. From a Karen perspective, our research suggests that consideration should be given to the level of happiness of the spirits, the number of animal species that are believed to cause peace, and the abundance of species with cultural and religious significance.

Recognising Indigenous ontologies impacts nature conservation debates about whether or not Indigenous Peoples are ‘allowed’ to live on Indigenous land that falls within designated conservation areas. Karen perceptions of forests show that people should, at the very minimum, have access to Indigenous land within conservation areas. During a walk through their community forest, local Karen experts noted that “in the past, we did not control this forest, so people would cut trees everywhere. Now we are in charge [and patrol] so people cannot just cut them”. From an ontological perspective, people note the importance of having access to the forest, stressing that chaos would result if people are kept out of parts of the forest that contain powerful *Nats* since people can no longer make offerings to them to keep them appeased and prevent them from coming to the village to take revenge and cause havoc. As one man put it:

“You cannot disturb the *Nats*, but you can [also] not abandon the *Nats*. You cannot just enter the forest and do whatever you want, but you can also not abandon the place and just leave the place where the *Nats* live. You have to maintain the place and take care of it. I mean, you take care of the place and you say to the *Nat*: you stay there and you do not scare others. If you (*Nat*) behave correctly, we will let you stay here”.

Demarcating conservation areas based on perceptions rooted in Indigenous ontologies may seem like a challenge. However, interviewing just 47 people in two townships in Karen State produces a vast array of potential sites, laying out the potential coordinates from which one could draw the contours of a conservation area based on Karen spiritual and cultural significance. Karen ontologies point toward many such sites, including *Nat* hotspots—individual trees, swamps and valleys with particularly powerful *Nats*—and places rich with the sacred animal and plant species. These include trees with significance in Buddhism and large trees in which bees build hives to produce honey that some interviewees said was “made by God from the pollens of 1,000 flowers”. Others are culturally significant trees, like the local giant durian trees. According to local lore, these trees are owned by the Karen because a witty Karen boy once managed to obtain the seeds by outsmarting a Burmese king.

Protecting forests should not just pay attention to biodiversity, climate change, and livelihoods but also to the cultural and spiritual significance of forests (Verschuuren et al. 2021). Conservation from the perspective of local ontologies could, for example, work with a calendar, based on the moon and the schedules of *Nats* and animals. Such a calendar clarifies the times and dates for incursion into the forest—from research to

camera trapping to hunting restrictions. Likewise, sustainable hunting should be designed around protecting and increasing species with a positive cultural and spiritual significance and existing *Nat*-informed limitations.

CONCLUSION

Different natures of reality inform different realities of nature, and this is relevant to nature conservation. The importance of recognising Indigenous ontologies which underpin Indigenous knowledge and practice remains underestimated, under-researched, and oftentimes misunderstood in nature conservation efforts in Indigenous areas.

Karen ontologies consist of a complex spirit belief system that, together with elements of Buddhism and Christianity, heavily influences Karen perceptions of the forest. Humans perceive nonhumans mostly through an animist mode of identification, with notable naturalist exceptions that appear to be rooted in Buddhism and especially Christianity. The forest is perceived to be alive with *Nats*, animals and humans who interact and communicate with one another to different degrees, with the moon influencing the timing of forest activities. This Indigenous ontology is remarkably different from the naturalist modes of interpretation that inform the materialist-scientific ontologies underpinning scientific knowledge and conservation practice by most states and international nature conservation agencies. It becomes clear that when local Karen experts and western scientists talk about the forest, they have a different understanding of what it is that they are talking about. While *Nats* are regarded as important 'guardians of the forest' in Karen knowledge systems, they are completely absent in scientific knowledge. Acknowledging multiple ontologies and their importance in shaping our thoughts and practices prompts us to reconsider how we think of nature and how we practice nature conservation.

Indigenous ontologies matter and require careful analysis to determine how they might contribute to a better understanding of the contestations, frictions and disjunctures between Indigenous people and conservationists. It would require re-evaluating what is considered (valuable) knowledge and addressing the (in)equality between scientific and Indigenous knowledge, i.e., recognition of Indigenous Peoples as conservation actors in their own right. Moving in this direction creates common ground for strengthening dialogue, increasing collaboration, addressing misunderstandings and minimising conflict. This enables the creation of practical, just and inclusive conservation approaches that are good for biological diversity and the dignity of (Indigenous) humans as well as spirits and other nonhumans.

REFERENCES

Bartlett, C., M. Marshall, and A. Marshall. 2012. Two-eyed seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledge and ways of knowing. *Journal of Environmental Studies and Sciences* 2012(2): 331-340.

Bhagwat, T., A. Hess, N. Horing, T. Khaing, Z.M. Thein, K.M. Aung, K.H. Aung, et al. 2017. Losing a jewel—rapid declines in Myanmar's intact forests from 2002-2014. *PloS one* 12(5): p.e0176364.

Bird-David, N. and D. Naveh. 2008. Relational epistemology, immediacy, and conservation: or, what do the Nayaka try to conserve? *Journal for the Study of Religion, Nature and Culture* 2(1): <http://dx.doi.org/10.1558/jsrnc.v2i1.55>.

Bird-David, N., 1999. "Animism" revisited: personhood, environment, and relational epistemology. *Current Anthropology* 40(S1): pp.S67-S91.

Blaser, M. 2009. The threat of the Yrmo: the political ontology of a sustainable hunting program. *American Anthropologist* 111(1): 10-20.

Blaser, M. 2013. Ontological conflicts and the stories of peoples in spite of Europe: toward a conversation on political ontology. *Current Anthropology* 54(5): 547-568.

Caillon, S., G. Cullman, B. Verschuuren, and E.J. Sterling. 2017. Moving beyond the human-nature dichotomy through biocultural approaches: including ecological well-being in resilience indicators. *Ecology and Society* 22(4): 27.

Descola, P. 2013. *Beyond nature and culture*. Chicago, IL: University of Chicago Press

Descola, P. 2014. Modes of being and forms of predication, Hau. *Journal of Ethnographic Theory* 4(1): 271-280.

Fa, J.E., J.E. Watson, I. Leiper, P. Potapov, T.D. Evans, N.D. Burgess, Z. Molnár, et al. 2020. Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscapes. *Frontiers in Ecology and the Environment* 18(3): 135-140.

Garnett, S.T. 2018. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability* 1: 369-374.

Hart, M.A. 2010. Indigenous worldviews, knowledge, and research: the development of an Indigenous research paradigm. *Journal of Indigenous Voices in Social Work* 1(1): 1-16.

Hayami, Y. 2011. Pagodas and prophets: contesting sacred space and power among Buddhist Karen in Karen State. *The Journal of Asian Studies* 70(4): 1083-1105.

Holbraad, M., and A. Pedersen. 2017. *The ontological turn: an anthropological exposition*. Cambridge, UK: Cambridge University Press.

Howitt, R., and S. Suchet-Pearson. 2006. Rethinking the building blocks: ontological pluralism and the idea of management. *Geografiska Annaler. Series B, Human Geography* 88(3): 323-335.

Hunt, S. 2014. Ontologies of indigeneity: the politics of embodying a concept. *Cultural geographies* 21(1): 27-32.

Johnson, J.T. and B. Murton. 2007. Re/placing native science: indigenous voices in contemporary constructions of nature. *Geographical research* 45(2): 121-129.

Kohn, E. 2013. *How forests think: toward an anthropology beyond the human*. Berkeley, CA: University of California Press.

Law, J. 2015. What's wrong with a one-world world? *Scandinavian Journal of Social Theory* 16(1): 126-139.

Ludwig, D. .2016. Overlapping ontologies and Indigenous knowledge. From integration to ontological self-determination. *Studies in the History and Philosophy of Science* 59: 36-45.

Madden, F. and B. McQuinn. 2014. Conservation's blind spot: the case for conflict transformation in wildlife conservation. *Biological Conservation* 178: 97-106.

Newing, H. 2011. *Conducting research in conservation social science methods and practice*. London: Routledge.

Pascual, U., P. Balvanera, S. Díaz, G. Pataki, E. Roth, M. Stenseke, R.T. Watson, et al. 2017. Valuing nature's contributions to people: the IPBES approach. *Current Opinion in Environmental Sustainability* 26: 7-16.

Pascual, U., W.M. Adams, S. Díaz, S. Lele, G.M. Mace, and E. Turnhout. 2021. Biodiversity and the challenge of pluralism. *Nature Sustainability* 2021(4): 1-6.

Paul, A., R. Roth, and S.S.B. Moo. 2021. Relational ontology and more-

- than-human agency in Indigenous Karen conservation practice. *Pacific Conservation Biology* 27(4): 376-390.
- Pereira, L. and O. Bina. 2020. The IPBES conceptual framework: enhancing the space for plurality of knowledge systems and paradigms. *Non-Human Nature in World Politics*: 311-335.
- Peterson, R.B., D. Russell, P. West, and J.P. Brosius. 2010. Seeing (and doing) conservation through cultural lenses. *Environmental Management* 45(1): 5–18.
- Prescott, G.W., W.J. Sutherland, D. Aguirre, M. Baird, V. Bowman, J. Brunner, G.M. Connette, et al. 2017. Political transition and emergent forest-conservation issues in Myanmar. *Conservation Biology* 31(6): 1257-1270.
- Reddy, C.S., S.V. Pasha, K.V. Satish, A. Unnikrishnan, S.B. Chavan, C.S. Jha et al. 2019. Quantifying and predicting multi-decadal forest cover changes in Myanmar: a biodiversity hotspot under threat. *Biodiversity and Conservation* 28(5): 1129-1149.
- Rubis, J.M. and N. Theriault. 2020. Concealing protocols: conservation, Indigenous survivance, and the dilemmas of visibility. *Social and cultural geography* 21(7): 962-984.
- Saxena, A.K., D. Chatti, K. Overstreet, and M.R. Dove. 2018. From moral ecology to diverse ontologies: relational values in human ecological research, past and present. *Current opinion in environmental sustainability* 35: 54-60.
- Studley, J.F. and P. Horsley. 2019. Spiritual governance as an indigenous behavioral practice: implications for protected and conserved areas. In: *Cultural and spiritual significance of nature in protected areas: governance, management, and policy* (eds. Verschuuren, B. and S. Brown). London: Routledge.
- Swift, C., J.A. Carbine, R.P. Carbine, C. Mecklenburg, M. Ochoa, A. Blomso, and J. Davis. 2020. Religious spaces and biodiversity in contemporary Myanmar. *ASIANetwork Exchange: A Journal for Asian Studies in the Liberal Arts*, 27(1): 97-126.
- Tauli-Corpuz, V., J. Alcorn, A. Molnar, C. Healy, and E. Barrow. 2020. Cornered by PAs: adopting rights-based approaches to enable cost-effective conservation and climate action. *World Development*, 130: 104923.
- Thawngmung, A.M. and Cho, V., 2013. Karen nationalism and armed struggle: from the perspective of Zipporah Sein. In: *Women in Southeast Asian Nationalist Movements*. Pp. 250. Singapore: NUS Press.
- Theriault, N., 2017. A forest of dreams: ontological multiplicity and the fantasies of environmental government in the Philippines. *Political Geography* 58: 114-127.
- Todd, Z., 2016. An indigenous feminist's take on the ontological turn: 'ontology' is just another word for colonialism. *Journal of historical sociology* 29(1): 4-22.
- Tran, T.C.; N.C. Ban, and J. Bhattacharyya. 2020. A review of successes, challenges, and lessons from Indigenous protected and conserved areas. *Biological Conservation* 241: 1-19.
- Turner, B., 2021. The limits of culture in political theory: a critique of multiculturalism from the perspective of anthropology's ontological turn. *European Journal of Political Theory* 20(2): 252-271.
- Turnhout, E. 2018. The politics of environmental knowledge. *Conservation and Society* 16(3): 363-371.
- Vaske, J.J. and M.P. Donnelly. 1999. A value-attitude-behavior model predicting wildland preservation voting intentions. *Society and Natural Resources* 12(6): 523-537.
- Verschuuren B., J.M. Mallarach, E. Bernbaum, J. Spoon, S. Brown, R. Borde, J. Brown, et al. 2021. The cultural and spiritual significance of nature. Guidance for protected and conserved area governance and management. Best Practice Protected Area Guidelines. Gland, Switzerland.
- Verschuuren, B. and N. Furuta (eds.). 2016. *Asian sacred natural sites, philosophy and practice in protected areas and conservation*. London: Routledge.
- West, P. 2016. An anthropology for 'the assemblage of the now'. *Anthropological Forum* 26(4): 438-445.
- Woods, K.M. 2019. Green territoriality: Conservation as state territorialization in a resource frontier. *Human Ecology* 47(2): 217-232.