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## Locating Human-Wildlife Interactions: Landscape Constructions and Responses to Large Carnivore Conservation in India and Norway

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### Abstract

People's reactions to large carnivores take many forms, ranging from support and coexistence to resistance and conflict. While these reactions are the outcome of many different factors, in this paper we specifically explore the link between social constructions of landscapes and divergent responses to large carnivore presence. We compare case studies from four different landscapes shared by people and large carnivores, in India and Norway. We use social construction of landscapes as a key concept to explore responses to large carnivores in the context of ecological, economic, social, and cultural changes in these areas. Based on this comparison, we argue that the process of change is complex, with a plurality of responses from the groups affected by it. The response to large carnivore presence is influenced by many different factors, of which the interpretation of change—particularly landscape change—plays a significant role.

**Keywords:** change, social construction, landscape interpretations, large carnivores, human-wildlife interactions, India, Norway

### INTRODUCTION

Humans and large carnivores have historically shared a complex relationship, shaped by a wide range of beliefs and factors (Saunders 1998; Knight 2000; Madhusudan and Mishra 2003). Persecution and habitat loss in the last 200 years has led to a dramatic decline in large carnivore populations worldwide. Even as they make a tentative comeback in some areas through conservation efforts and changing land-use patterns (Linnell et al. 2001; Treves and Karanth 2003), they have simultaneously faced resistance and enjoyed support.

These responses are influenced by a diversity of factors, including processes of biological, economic, political, and cultural change. In this paper, we locate human-large carnivore relations in the context of change, and focus on processes that impinge on the social constructions of landscapes shared with large carnivores. We build on previous research on the socio-cultural context in which people's interpretations of large carnivores develop. However, we argue that a specific landscape perspective has been largely lacking, despite the fact that some publications have introduced people's relations to the landscape as one factor influencing views on large carnivore presence (Figari and Skogen 2011; Sjölander-Lindqvist 2007).

Much of the general literature on human-wildlife interactions focuses on biology, and the term 'conflict' is often used as a synonym for the material impact on agriculture and livestock (Treves and Karanth 2003; Inskip and Zimmermann 2009). Social science studies often concentrate on attitudes towards specific species (Bruskotter et al. 2007; Ericsson et al. 2008; Gusset et al. 2008), without necessarily accounting for the social and cultural contexts that shape them. People's views are measured

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as ‘negative’ or ‘positive’, ‘for’ or ‘against’, ‘believe’ or ‘do not believe’, etc., e.g., negative and positive perceptions of benefits and losses from living around protected areas (Allendorf 2007; Karanth and Nepal 2012), attitudes towards large carnivores (Bjerke et al. 1998; Ericsson and Heberlein 2003), and the material impact of their presence (Saberwal et al. 1994).

However, people’s views on large carnivores—in general, their presence in a specific place or their conservation—are more likely characterised by ambivalence, internal dilemmas, and ambiguity rather than stable valuations; especially as “societal and policy agendas are often contradictory, paradoxical and highly controversial” regarding environmental issues (Macnaghten 1995: 136–137).

Another strand of research has taken a different approach to situate people’s opinions of large carnivores, and the conflicts that often surround them, in a wider social and cultural context (Saberwal et al. 1994; Bagchi and Mishra 2006; Peterson et al. 2010b). A number of qualitative studies of human-large carnivore interactions have been carried out, particularly in Scandinavia, USA, France, and Spain<sup>1</sup>. Focusing on wolves, these studies suggest that controversies are deeply embedded in wider societal conflicts especially over economic, social, and cultural change in rural areas along with shifting class and power relations (Wilson 1997; Skogen and Kränge 2003; Sjölander-Lindqvist 2007; Figari and Skogen 2011; Kränge and Skogen 2011).

One of the significant insights that have emerged from these studies is the influence of people’s relationship to the land on the interpretation of large carnivores (Figari and Skogen 2011). However, this body of research has not fully engaged with the rich literature on the social construction of landscapes (Bender 1993; Cronon 1995; Olwig 1996; Ingold 2000) to explore its links with reactions to large carnivore presence.

In this paper, we attempt to remedy this by comparing sites outside protected areas in India and Norway. While many factors influence the interactions between people and large carnivores, we specifically explore the impact of social constructions of landscapes—how the land is perceived and attributed meaning—on responses to large carnivores. We do not claim that social constructions of landscapes alone account for these responses, and recognise the significance of the material impact of changes in land use and conservation policies. This obviously includes economic and other practical problems that large carnivores may cause, e.g., to livestock herders and—as in the case of Norway—hunters. However, our aim in this paper is not to provide a full account of human-large carnivore interaction, but rather to highlight one dimension of people’s valuation of large carnivores (and potentially other wildlife)—one that is crucial to understanding human-carnivore interactions, but has received limited research attention. Thus, we attempt to provide a new piece in a puzzle where other contributions dealing with economic, social, and cultural aspects of human-carnivore relations have already laid the ground.

## Conceptual framework

To explore the links between interpretations of species and social constructions of landscapes, we lean on a conceptual framework that treats landscapes as embodied practice, i.e., landscapes being constructed through tasks and activities performed on the land (Bender 1993; Olwig 1996; Ingold 2000). This perspective contrasts with conceptualisations of landscapes as mere physical spaces (Karanth et al. 2011) and ones that regard them as cultural abstractions of individual experiences (Vaccaro and Norman 2008). While we avoid geographical determinism and strong constructivism, we do recognise Stedman’s (2003: 682) argument that “landscape characteristics ‘matter’; they underpin both place attachment and satisfaction, but in very different ways” (emphasis in original).

Of the scholars who see landscapes as embodied practice, Tim Ingold is perhaps the most evocative. He conceptualises landscape as a qualitative and complex reality of the lives and the work of past generations who have lived in it and shaped it through tasks performed on the land, thus constituting a “taskscape” (Ingold 2000). Other scholars have used political, historical, social relational and gendered perspectives to explore how physical landscapes are constructed through experiences, engagement, and negotiations (Bender 1993; Olwig 1996). Our paper draws on this rich body of work, which sees purposeful, motivated and value-laden interaction with the materiality of the land, in the form of tasks, as a source of meaning. Such motives and values are central to the social construction of landscapes. Thus, while the physicality of the land and its biology certainly influence different interpretations, there are also important social, cultural, and historical factors that shape the landscape as a social construction. These constructions then become something different from the land itself.

In this context, the main question we ask is: *How do local constructions of landscapes influence the responses to the presence—and conservation—of large carnivores?* To answer this, we investigate how landscapes are socially constructed (as well as physically altered) in the study sites, and how these constructions are tied to tasks performed on the land. Against this background, we explore the responses to large carnivore presence.

## Why compare?

One rationale for comparative research is to identify ‘social mechanisms’ by juxtaposing different social contexts, and look for similar social processes that lead to similar outcomes. A social mechanism in this sense may be described broadly as a constellation of factors that regularly—but not necessarily—produce specific outcomes (Hedström 2005). If such outcomes are observed under different social conditions, we may assume that factors—economic, institutional, cultural, and ecological—that can be identified as similar, interact in ways that amount to a ‘social mechanism’. We use the term

‘mechanism’ in a broad sense, without linking it to any specific theoretical perspective. It underpins the rationale for our comparative design, as we compare sites that present a range of contexts for human-large carnivore relations. It provides a tool to identify factors that tend to lead to certain outcomes across contexts. In this paper, the outcomes are interpretations of large carnivore presence.

The four sites—Akole and upper Nilgiris in India, and Trysil and Halden in Norway—host large carnivores in multi-use landscapes, with a complex mix of distinct and shared features. Each of these sites records relatively limited material damage from large carnivores but different levels of conflict. There are strong anti-predator sentiments, with more or less open conflicts in Trysil and Nilgiris. The other two sites present a mixed picture—Akole has the lowest conflict level, whereas strong pro-carnivore sentiments are present in some groups in Halden.

We compare these sites to explore the links between localised social constructions of landscapes and the interpretations of large carnivore presence, and to identify relevant processes—social mechanisms—that contribute to an explanation for the diversity of responses to large carnivore presence.

## METHODOLOGY

The Norwegian research was conducted in 2007–2008, though it also draws on earlier research being carried out since 1999, which were re-analysed from the perspective employed in this paper. The Indian research was carried out between 2008 and 2011, as part of a larger interdisciplinary project studying human-wildlife interactions (Thomassen et al. 2011).

The Norwegian material is derived from 20 focus groups with an average of six participants, representing a cross-section of the population in the two sites. Relatively homogeneous groups (hunters, farmers, conservationists, neighbours, colleagues at randomly selected workplaces, etc.) were recruited for each session to avoid heated and gridlocked discussions. This is akin to what Morgan (1997) terms “segmentation”, though a few groups did have a variety of positions on the issue of large carnivores.

The Indian data come from semi-structured interviews, 35 of which were conducted in the Nilgiris and 55 in Akole, covering a cross-section of the population. During many of the interviews, neighbours, friends, and family members joined in, which would turn the interviews to ‘natural’ focus groups, rather than formal focus groups that are specifically arranged according to predefined social categories (Frey and Fontana 1993; Morgan 1997). In both areas, informants were recruited through various social networks and also using compensation records for livestock depredation. Interview guides were used as topic checklists but not to structure the interviews. This approach was also used in the Norwegian focus groups (like the Indian interviews) where a free-flowing conversation was an important goal.

In all the sites, sampling strategy rested on the concept of saturation (Bertaux 1982; Bertaux and Thompson 1997). When

the researcher reaches the point where new informants add little to the observed variation, the informants can be taken to represent others that belong to the same situational category. However, Bertaux (1982) recommends that this research strategy should be limited to the study of social milieus that can be relatively clearly demarcated, e.g., professions or local communities.

While focus groups capture more of the social dynamic in meaning production, individual interviews provide more depth and detail. However, in both cases it is the ‘meanings’ attributed, by individuals and groups, to large carnivores and their habitat that are of interest to this paper. Hollander (2004) argues that both focus groups and individual interviews provide insights into complex processes of meaning production and representation, without either being better or more true. The researchers spent considerable time at all four sites. Data generated through interviews and focus groups were validated through observations and informal conversations. Taken together, the data from each site is rich enough to produce what Geertz (1994) referred to as “thick descriptions” of the study sites, and allow for meaningful comparison of prevailing interpretations of landscapes and large carnivores. Throughout the paper, we draw on direct quotes by the people who live in these areas to illustrate their perspectives firsthand, in support of our arguments.

### The research sites

#### *Akole*

Akole is located in Ahmednagar district in northwestern Maharashtra. It is spread across a 100 sq. km valley, drained by the Pravara river, and surrounded by the Sahyadri mountains of the Western Ghats. It is socially heterogeneous, with several ethnic communities and distinct social stratification, with an estimated population density of about 357 per sq. km (Athreya 2012). At the time of this study, this area was a mosaic of privately-owned croplands interspersed with low hills, and included Akole town. However, historically the valley was arid and supported subsistence-level agro-pastoral livelihoods with a low density of leopards (based on archival records and views expressed by different actors during interviews, as there are no reliable historical data available). In the 1980s, Akole witnessed major socio-economic and ecological changes—permission to use the Pravara river for irrigation and the establishment of a local sugarcane processing factory. This led to intensification of agro-pastoral activities, dominated by the cultivation of sugarcane, whose benefits are unevenly distributed across communities and groups. These changes also resulted in a perceived increase in leopard numbers, with livestock and dogs serving as prey and sugarcane providing ideal cover. Athreya (2012), who carried out biological research on leopards in the area, estimated a minimum of 5 leopards that are resident in the area as part of a stable breeding population. There are no formally protected areas in the vicinity, though parts of the valley are managed for non wildlife-related forestry activities.

### **The Nilgiris**

The Todas are a pastoral community of 1,500 people who live in 56 ‘munds’ (hamlets) on the upper plateau of the Nilgiris in Tamil Nadu. In 1893, 2,948 acres of land were configured as ‘Toda patta land’—common-hold tenure—by the colonial government (Fort St. George Gazette 1893), and managed under the Madras Forest Act, 1882. Todas traditionally herded buffalos on the undulating plateau, which was historically dominated by grassland and shola (stunted-rainforest thickets). This landscape has been subject to intensive monoculture plantations and agriculture since colonial periods (Prabhakar and Gadgil 1998). Eucalyptus, wattle, and pine plantations were official forestry projects. Encouraged by colonial and post-independence administrations, vegetable and tea cultivation also expanded. As a result, tree cover increased dramatically, with wattle turning invasive.

Toda lands and the reserve forests adjoining them have not attracted as much conservation attention as the protected areas of Mukurthi and Mudumalai that are located nearby. Conservation managers confirm the presence of 50–56 tigers in Mudumalai, 10 in Mukurthi, and 14 in the reserve forests of the district (Ravichandran 2011). While there are intermittent reports of tigers and leopards preying on Toda buffalos, there are no official records as Todas rarely report them or claim compensation, due to time constraints and bureaucratic hurdles. Besides tigers and leopards, sloth bears have also been recorded on the upper Nilgiri plateau. Incursions by wild elephants from the plains, though rare, have also been reported in the area.

### **Trysil and Halden: southeastern Norway**

The study area is within the present distribution range for wolves in southeastern Norway. Conflicts over wolf presence in Norway are intense, engaging many rural people and reaching into national politics. The present analysis focuses on two municipalities, Trysil and Halden. As we shall see, their social makeup differs in ways that are relevant to our analysis. Trysil is spread across 3,014 sq. km along the Swedish border in the northern part of the wolf range. It includes vast tracts of forests, marshes, and mountains, and is Norway’s largest timber-producing community in terms of logged volume (Statistics Norway 2011). But mechanisation has diminished the logging work force, and the wood-processing industry is shrinking. Agriculture is limited and farm abandonment is increasing despite government subsidies. The population continues to drop—6,700 in 2011 compared to 8,400 in 1951 (Statistics Norway 2011). Trysil has seen massive tourism development in the form of a large ski resort but it generates few year-round jobs. Recreational activities based on harvesting natural resources, particularly hunting and angling, engage a substantial part of the population. Trysil has long held the Norwegian record for the number of moose hunted in a year (Statistics Norway 2011).

Halden, at the southern tip of the wolf range and also bordering Sweden, is smaller in size (642 sq. km), but has a larger population of 28,000 (Statistics Norway 2011). It has a long industrial history, and around 85% of the population lives in urban or semi-urban districts. It nevertheless has sizeable

forest areas, with several smaller communities retaining close ties to traditional land use, where hunting and leisure pursuits with a harvesting ethos are culturally significant. Importantly, there has been substantial in-migration in some rural communities from urban areas. This has created enclaves quite different from the traditional resource-dependent communities, with a different social basis and different relations to the land. The same phenomenon is observed in Trysil on a smaller scale.

Large carnivores are present in both municipalities; bears, lynx, wolverines, and wolves in Trysil, and wolves and lynx in Halden. Sheep farming plays a limited role in Trysil and is practically absent in Halden, so livestock loss has been minimal. Still, wolves feature prominently in local debates (Figari and Skogen 2011).

## **ARGUMENT**

### **Constructing landscapes**

Superficially, the sites seem very different. The socio-economic contrasts between India and Norway are in many ways extreme, and cultural diversity in India (particularly in Akole) is very different from rural Norway. However, this adds greater depth to the comparison, as Stedman (2003: 682) suggests: “studying other settings that are more diverse in both environmental quality and the mode of interaction (i.e., some people recreating, other people working) may help us to more fully understand” the relationship between space and constructed “sense of place”. There are some shared features too, especially in being rural but not disconnected from urban areas. In the Nilgiris, Wenlock Downs—the colonial designation of grasslands that contained most Toda hamlets—is a recreational zone, earlier for game-hunting and now a popular tourist attraction. In the Norwegian sites, urban in-migration and cultural influx, as well as tourism development, may entail different value systems and relations with the land (Kaltenborn and Williams 2002). In Akole, most households have relatives living in urban centres like Mumbai, Pune, and Nashik, which offer better educational and career opportunities. Also, Akole economically interacts with these urban centres through trade in vegetables and milk. Such linkages are important interfaces for knowledge and drivers for change (Tacoli 1998; Masuda and Garvin 2008).

Historically, people in Akole were materially impoverished and engaged in subsistence and seasonal agro-pastoral tasks. The landscape was interpreted through moral and religious tasks, which helped negotiate socio-economic and ecological challenges. Leopards featured prominently in this moral landscape. While recent changes have improved material conditions through more intensive agricultural practices, social constructions of the land remain largely unchanged. Further, the material benefits are not spread evenly, with complex political, socio-economic, and historical processes and narratives that divide and bind people, rooting identities to the land and livelihood. Several people—especially along the river with ready access to water—have decreased their

pastoral practices to focus on agriculture. Tribal groups, living in peripheral areas with no irrigation and seasonal agriculture, continue to herd livestock.

There is general agreement that Akole is a production landscape (though ‘production’ itself has variable interpretations), which is acknowledged even by conservation managers. The changes since the 1980s have only reinforced this view. One resident said: “Earlier it was dry... barren... and agriculture was less widespread. Farming has increased now and is everywhere... now there has been a lot of progress [in everything]... education, poverty alleviation, politics...” As mentioned earlier, leopards continue to feature prominently in this landscape construction. A middle-aged farmer said: “Earlier, we had rain-fed agriculture but now with irrigation, we cultivate round-the-year, including water-intensive crops like sugarcane... sugarcane provides leopards with a hiding place... they [leopards] no longer live in the forest [in the hills]... there is no drinking water there... yes, they [leopards] do kill our animals but do not harm us, unless provoked.”

The demographic profile of the upper Nilgiri plateau is complex; the state government repatriated Tamil refugees from Sri Lanka in the 1970s, adding to other historic migrant groups. The Tamils, skilled in tea plantation, along with parallel efforts by the local tea board, facilitated a shift from small-scale vegetable cultivation to growing tea. Few Toda munds, however, engage primarily in tea cultivation. While Toda youth are generally reconciled to being farmers, and elders express nostalgia about their pastoral past, they do not translate to neat ‘generational’ depositories of tradition and modernity. Some elders are reconciled to an agricultural economy, while numerous youngsters yearn for a pastoral life. The physical alteration of the plateau has fused the sense of a ‘lost buffalo-herding landscape’ with an idealised past. The Toda ‘taskscape’ emerges not only from agro-pastoral tasks they perform today, but also from pastoral tasks they are unable to perform in the drastically altered physical landscape.

In Norway, the dominant narrative among people with cultural ties to the resource-based economy is one of economic decline, leading to depopulation and dismantling of private and public services. The forest industry employs only a handful of people, and agriculture is disappearing. Farm abandonment leads to spontaneous reforestation of fields that were highly valued for opening up the landscape. Importantly, this happens in an age when conservation ethos has achieved a hegemonic position in public discourse, and increasingly manifests itself in practical land management—restrictions on land use, new protected areas, and protection of species previously persecuted. Some social groups interpret these changes in the cultural valuation of nature (of which wolf protection is one expression) as driving forces behind the decline in resource industries, and as threats to a traditional rural lifestyle that rests on harvesting resources (Kränge and Skogen 2011).

However, the picture is not clear-cut, as the population is diverse even in Trysil, and pro-wolf attitudes are certainly present. This is more apparent in Halden, where—even in

small rural communities—a construction of the landscape that embraces wilderness is strongly present. From this perspective, resource extraction, as performed today, is seen as harmful. This view prevails among people who are generally not culturally-rooted in traditional land use. To them, the wolf is a strong symbol of an authentic, wild nature that preceded the human-dominated landscape (Figari and Skogen 2011). A rural Halden resident stated: “To experience something so authentic, in this [modern] society of ours—to me, that’s incredible... but also a vital necessity! Everything is becoming so artificial. Things keep disappearing and disappearing. So, to be able to... be in touch with something so... it must have been like that for an eternity!” Their interpretation is informed by a different interaction with the land, valuing it through non-consumptive recreation, and symbolic of something unspoiled that should be revered and left in peace. This deviates from a traditional landscape construction, where human appropriation of nature is seen as necessary and benevolent—not only to people, but also to wildlife and the land itself.

Just as the concept of wilderness is tied to the idea of an imagined past, the notion of productive nature is associated with continuity and a heritage from earlier generations. For people rooted in traditional, resource-based land use, the traces of ancestors’ hard work and efforts to tame the wilderness express the inherent meaning of the physical environment, and must be preserved through continuation of traditional practices. This cultural landscape must be saved from ‘re-wilding’. Domestic animals as well as huntable game must be protected against predators. From such a perspective, humans and nature are not separate—traces of human activities are no more negative than traces of other beings that belong on the land (Figari and Skogen 2011).

### Interpreting change

In Akole, change is interpreted as intensification of historic resource use and so represents continuity. Though benefits are not evenly spread, the change is valued as desirable for having lifted people from ‘abject poverty’ and ‘backwardness’. This perception is located within larger narratives of progress. Significantly, the very landscape changes welcomed by people also improved its ecological potential for leopards.

In contrast, afforestation of grasslands on the upper Nilgiris has been a cause for concern. Toda lands were included in afforestation efforts and were not resisted, as forest personnel told Todas they could benefit from felling mature trees; a decision many regret given the bureaucratic delays in obtaining felling permits. Todas are nostalgic about the openness and visibility that characterised their landscape. Even as they adapt to the afforested land and its predatory risks, some Toda elders recall the British hunting tigers in Wenlock Downs. They complain that plantations have shrunk grasslands, desiccated swamps, and drastically reduced visibility. A Toda farmer said: “More pastures means buffaloes can graze. We can see the buffalos even from a distance and if there are tigers in the area, we can monitor its movements. Now, once the buffalos

go beyond the pines, we will be sitting here without knowing what is happening there”.

This fear of ‘losing the landscape’ is observed in Norway too. Farmers and local hunters claim that conservation measures—in concert with a negative economic development—are ruining the beauty of their managed landscape. They fear that if the land is not managed, it will soon be overgrown. While Trysil is a naturally forested area, the open spaces created by agriculture and grazing are all the more cherished. They are seen as aesthetically pleasing, and as strong symbols of the relationship between people and nature, and the toil of the ancestors. Like the Nilgiris, many people talk about the possible loss of open landscape, which would be replaced by forest—not a beautiful, mature forest but impenetrable brush. One farmer said: “What scares me about the large carnivores is that the land will not be used. Then it will just become overgrown, and we will have the forest right up to [our doorstep]. That’s exactly what we don’t want! We want it to be an open landscape... that is used.” This is interpreted not as the return of true wilderness, but the onslaught of chaos. But as much as people fear the physical landscape changes, they are even more concerned by—to borrow a phrase from Ingold—‘taskscape’ changes. While the physical changes to the landscape in southeastern Norway is limited compared to the Nilgiris, many people feel that the land management rationale has shifted dramatically, from production to protection. They see the ‘wilderness’ paradigm as having achieved hegemony, so that traditional ways to use and manage their land gradually become impossible.

Thus, we have four sites for comparison, which present contrasting changes with contestations and continuities in landscape constructions. In the Nilgiris and Norway, we find contested interpretations of changes, and corresponding threats to ‘taskscape’, while changes in Akole maintain continuity and intensification of earlier interpretations, and are widely regarded as desirable. In these emotionally-charged landscapes, we locate the large carnivores.

### Interpretations of large carnivores

In the Nilgiris, shrinkage of grasslands and agricultural adaptation has contributed to a decline of Toda herds, while also providing tigers and leopards cover to hunt buffaloes. Open landscapes helped protect buffaloes as carnivores were conspicuous, while the forests now serve as habitats for tigers and leopards. A Toda farmer explained: “Earlier you would know what is in an area in a single glance. Now if you go and look for your buffaloes, you know they are there but you have to first find one, get it to one place, then go looking for the others. As a result, you really do not know what’s happening in there”. An elder said: “everything has become darkness... [earlier] there was light and openness. Wild animals, if they saw us would move away. Now everything is closed”.

The Todas acknowledge that tigers have historically been present in the Nilgiris but claim that depredation was occasional. They say the forest department released tigers and leopards in the area during the 1990s and 2000s. Some

youngsters are said to have witnessed these clandestine acts. Zoos and the Mudumalai Tiger Reserve emerge as source areas. Authorities could no longer feed the zoo animals, so they released them in Toda lands. The ‘zoo hypothesis’ along with the ‘closing of pastures helps predators hunt’ conjecture are important factors that the Todas identify to claim an increase in depredation by tigers. The Todas also point to an apparent behavioural difference between old forest tigers and the introduced ones. The forest tigers were shy, while the ‘new’ tigers are extroverted, easily observed and do not fear people. An elderly Toda said: “Today’s tiger is not a tiger but a dog. It will suddenly jump on humans. Those days the tiger would go for the neck of the buffalo but nowadays they bite the feet and legs. Since they are habituated to eating limb meat in zoos, they do not go for the neck”. A youth recounted: “Those days there was the forest tiger... when it came, it killed a buffalo...”. There are references to states of ‘naturalness’ and ‘wildness’ in such invocations of tigers.

There are similar accounts of leopard releases in Akole too, along with an acknowledgment of the link between the intensification of agricultural practices and increase in leopard numbers. Conservation managers admit that leopards have been trapped and relocated locally under political pressure. Popular accounts attribute these releases to various factors, ranging from leopards being released to prevent collection of firewood from forestry plantations to lack of infrastructure to accommodate trapped animals. These narratives are employed to explain a perceived increase in leopard numbers and their ‘tameness’. One informant said: “Nowadays leopards are domesticated and used to people. They pose no harm to us”. Interestingly, the ‘tameness’ is interpreted very differently in Akole as compared Nilgiris, where lack of fear was deemed as dangerous. Like the Nilgiris, leopards have historically been present in Akole too, even if their numbers were relatively lower. Elders recount that earlier they rarely encountered leopards and when they did, it was always in the forested hills. The forests have disappeared and leopards now live in the valley. The difference in interpretations can partly be attributed to specific predators (tigers in the Nilgiris and leopards in Akole) in these areas. However, our research suggests that other factors have also contributed to these differences, of which we discuss one in this paper—the social construction of landscape.

These rumours provide important insights into the dynamic relationship between residents and the state, especially conservation managers, in the context of changes being negotiated in both landscapes. For instance, people and leopards continue to be intertwined in complex social relations in Akole. On the one hand, they are integrated in the relationship between people and the state, which protects and manages leopard populations. On the other hand, tribal groups living in peripheral areas of the valley, with marginal political influence, have institutions that socially integrate leopards as village deities—*Waghoba*. Here leopards play a sacred-moral role in the form of *Waghoba*, the benign deity “who never harms the righteous”. These groups are aware of

leopards in the area and diligently protect their livestock on which they depend for their livelihood. In both cases, leopards are regarded as an integral part of the landscape. In tribal communities, rare depredation losses are regarded as moral acts, which allows them to exert a degree of control over the situation. One respondent said: “It is only when we are not respectful or have done something wrong that *Waghoba* will kill our animal... but after we ask for forgiveness and carry out the rituals properly, we experience his blessings.” Others claimed it was an act of benevolence: “It can also be a good sign if *Waghoba* takes our animal. It means he is happy with us [and our rituals]... our herds will grow in the future. He never takes an animal from those who cannot afford the loss.” Though these beliefs are dominant amongst tribal communities, others also invest time and energy in them. A non-tribal farmer explained: “This is blind superstition... but we do participate in it... for social reasons”.

Leopards, like humans and other animals, are recognised as being social actors, i.e. humans and leopards can share reciprocal social relations. An example of this perspective comes from an interview with a young woman who said: “They are living beings like us... they need to eat too... are they going to eat vegetables? No! They never take animals from the same house every day, do they?” Most of these people are primarily engaged in agricultural activities (and work directly with the land) in an area where leopards feed on small livestock and dogs. As long as leopards do not harm humans, they are tolerated. One pastoralist explained: “This landscape belongs to leopards as much as it belongs to us.” There is widespread awareness that leopards are legally protected. Managers face different degrees of pressure, the most intense being in the wake of an attack on a human. While people do fear leopards, they also recognise relations of reciprocity—that leopards do not harm humans unless provoked.

However, there are exceptions to this in Akole town, especially amongst a small group of social elite involved in large-scale sugarcane farming who interpret the situation differently. They agree that leopards must be conserved, but argue that this must be done in protected areas and not in Akole. One individual said: “Leopards are beautiful... but should they be living around people? They are ok as long as they live in the forest but not to the extent that they start coming to our villages...” They regularly petition the department to trap leopards and demand compensation for depredation losses. These individuals no longer work the land themselves and form part of a socio-political elite. They subscribe to certain aspects of local belief systems, but acknowledge a ‘disconnect’ from tasks they (and their ancestors) once performed. Thus, leopards present a socio-political challenge, which the local elite address by exercising their greater access to political influence. While they interpret change in Akole positively, having derived relatively greater benefits from it, and agree that leopards must be conserved, they insist leopards should be kept away from humans.

In Norway, wolf supporters and sceptics actually speak about the wolf in ways that are similar to each other

(Figari and Skogen 2011). Nobody sees themselves as wolf haters. Wolves in their natural environment are seen as impressive and fascinating, they are intelligent, social—and above all—*wild*. So the disagreement boils down to whether wolves belong in Norway today, and whether those present now are real, wild wolves. One farmer said: “They belong in Siberia, where there are no people. People and wolves do not go together. We have a populated countryside in Norway, unlike Sweden. We agree on that, there are generations of agreement about that in Parliament.”

Those who adhere to traditional landscape constructions see a symbolic mismatch between (wild) wolves and the (humanised) local landscape. Consequently, the wolves living in the forests of eastern Norway cannot be understood—or treated—as ‘natural’. Many informants were even convinced they were hybrids, or “bastards”. One hunter said: “[A hybrid] will have both the properties of a wild animal, plus it lacks its natural fear of people. That’s definitely the most dangerous sort.” These wolves, when observed in the neighbourhood and approaching buildings and people, come far too close and are not shy enough to be real wolves. Instead, they are perceived as unnatural animals with unnatural behaviour, showing all the signs of being polluted by humans. Because of this, they are perceived as dangerous, like in the Nilgiris. There are rumours about how captive-bred wolves have been secretly introduced by the government (Skogen and Krange 2003). These rumours are strikingly similar to the tiger introduction stories in the Nilgiris and serve the same purpose—to underscore that current large carnivore presence is unnatural, and to place the responsibility firmly on actors of flesh and blood, rather than on diffuse and remote bureaucratic systems (Skogen et al. 2008).

### Landscape constructions and large carnivores

While there are diverse interpretations of large carnivores across the sites, the present research suggests that the perception of conflict may not primarily be directed at the carnivores alone. Instead, as the Nilgiris and Norwegian examples illustrate, the conflicts seem to be rooted in negative interpretations of changes in the physical landscapes, and power structures that are seen as drivers behind that change. We are not denying that predators may cause material damage, or that the physical change (particularly in the Toda case) has a substantial economic impact. Instead, we argue that the responses to these tangible effects may be more fully understood in the context of social constructions of landscapes that define people’s relations to the environment.

The large carnivores thus find themselves in an environment fraught with competing interpretations as well as socio-economic and cultural conflicts. However, since all four sites have undergone considerable change, how do we explain the divergent responses to large carnivores? Those dwelling in these places have historically engaged with change and the forces behind it. At a simplistic level, the perception of conflict observed in the Norwegian sites, particularly Trysil, and in the Nilgiris can be traced to overtly negative



interpretations of change. These are conflicts arising from historical discontinuities in the activities performed in the landscape. Supporters of wolf presence in rural Norway engage with the land in new ways. Their landscape is also connected to tasks, namely their own low-impact, non-commercial practices, supported by narratives of a more sustainable, small-scale resource use in the past. They use the forest for recreational outdoor activities. For them, the landscape is a wilderness in which the wolves belong. Interestingly, people with cultural ties to the resource economy, and who oppose wolf protection, also use outdoor activities as a bridge to the past. The typical case is hunting, which symbolically links contemporary rural culture to the managed production landscape that formed the basis for settlement. Hunting as a mass leisure activity is only a few decades old (Brottveit and Agedal 1999), but is socially constructed as an ancient tradition in rural areas. One explanation is that there are few other culturally significant harvesting activities for people to engage in, and fewer people are economically dependent on the forest today. So hunting becomes an “invented tradition” (Hobsbawm and Ranger 1992) of great significance. Wolves also threaten typical Scandinavian hunting with free-ranging dogs, and so become an even stronger symbol of threat to traditional rural culture.

For Todas, pastures hold similar recreational value, given their past range-herding practices. Men still go to look at remaining pastures and even to watch sacred buffaloes, which have now turned feral. Todas value the recreational aspects of annual activities like collecting grass from swamps to thatch their temples. The changed land curbs these activities while seeming to facilitate the presence of large carnivores. While this change is desirable and positive for large carnivore conservation, Todas locate it within their lost past. Thus, disagreements are not only much about large carnivores or their conservation, but also about where they belong.

On the other hand, a positive interpretation of change in Akole encourages a more benign interpretation of large carnivores, especially since leopards were already integrated into social constructions of the landscape. A middle-aged farmer, a week after he and his wife had a close encounter with a leopard, which pounced on their motorbike before disappearing into adjacent sugarcane fields, had this to say: “There are bad elements in every society, why would leopards be different. Our village has four leopards, three don’t cause trouble but one fellow is always doing mischief!” The interpretation of the minority, who claim leopards do not belong to Akole, can partly be traced to their changed relations with the land and their political engagements with the state. According to them, Akole is meant for humans alone and leopards should be kept in protected areas. This echoes conservation practice in India, which seeks to create neat divisions of natural and social spaces, with leopards belonging to the former and humans to the latter (Ghosal et al. 2013).

This may be a rather simplified interpretation of a complex reality, but it provides a useful starting point to understand the differing responses to the presence of large carnivores.

Communities and social groups have inherent power dynamics, which favour specific ideas of nature—linked to general worldviews—that shape or even drive conflicts over the specific interpretations and use of the land (Peterson et al. 2010). The Nilgiris and Norwegian sites illustrate how unresolved conflicts of interpretation and their physical expressions have deep implications. Akole provides a contrast, where change has benefited both people and leopards. Changes do affect the social construction of the landscape, but the ‘new’ interpretation is benevolent, accommodating leopards and institutions built around them.

## CONCLUSION

In this paper, we argue that the experience of physical landscape change, as well as perceptions of changing management regimes and shifting power relations, will influence social constructions of the landscapes in different ways, and determine whether changes are seen as desirable or undesirable. Agrarian change in Akole entailing ‘afforestation’ with sugarcane is considered beneficial. But afforestation in the Nilgiris and Norway causes economic and cultural concern and signifies a sense of loss. These interpretations of change are related to production and recreational tasks performed or hindered, but indeed also to how broader processes of economic and cultural change are experienced by different social groups. Constructions of the landscape at all the sites resemble “act[s] of remembrance, of engaging perceptually with an environment that is itself pregnant with the past” (Ingold 2000: 189). Disconnection from traditional understanding of the past as is most evident in Halden, is tied to the emergence of new, partly in-migrant or socially mobile groups, whose constructions of the landscape have a different basis.

How change relates to landscape constructions influences responses to large carnivore presence. In the Nilgiris and Trysil, notions of belonging, polluted identity, and behavioural anomaly in animals also suffuse contestations of carnivore presence. Rumoured relocation of captive carnivores helps explain behavioural anomaly. Negative interpretations of physical—and cultural—change thus bear upon similar interpretations of carnivore presence. Nostalgia prevails for a more aesthetic past that was also a controlled past, where hunting and monitoring were possible in an open or benevolent landscape. In Akole, positive interpretations of the physical landscape are accompanied by benign responses towards leopard presence. Co-beneficiaries of the transformation, leopards have historically been integrated with several communities in Akole as a village deity.

While material damage inflicted by carnivores generally has substantial bearing upon conflicts, we argue that responses towards carnivores need not be driven by material loss alone. It has been documented in Norwegian research that strong anti-carnivore sentiments may develop independently of material damage (Figari and Skogen 2011; Skogen and Kränge 2003), and this is evident in the Indian cases too under certain

conditions. Such conditions can be discussed in the conceptual context of social mechanisms. Here we may perhaps claim to be on the track of a very simple social mechanism; albeit one that needs considerably more comparative research across diverging contexts.

If the changes that brings predators are seen as threatening, and also as imposed by malevolent outside forces, then predators will not be welcome, and easily become symbols of the wider processes of change, even if material damage is limited.

If the changes that bring predators are seen as benevolent, regardless of their origin, then predators may be tolerated, as long as material damage is limited.

If social constructions of the landscape are already contested, the presence of large carnivores will become embedded into these conflicting ideas.

The opposition to large carnivore conservation in specific areas is rooted in historical, socio-economic, and physical engagements with the land, and hence cannot be separated from the social constructions of the landscape that emerge from these engagements. Conservation laws impose a “new set of meanings on the land, a landscape of nature consumption, devoid of human history, that clash with locally constructed meanings” (Neumann 1998: 202). While applying perspectives such as ours is no guarantee of success, we are convinced that treating so-called ‘human-wildlife conflicts’ exclusively as that (i.e., conflicts between people and animals) is a certain road to failure.

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### NOTE

1. While the French and Spanish research has rarely been published in English, see Skogen et al. (2008) for a comparison of France and Norway.

### REFERENCES

Allendorf, T.D. 2007. Residents' attitudes toward three protected areas in southwestern Nepal. *Biodiversity Conservation* 16: 2087–2102.

Athreya, V.R. 2012. *Conflict resolution and leopard conservation in a human dominated landscape*. Ph.D Thesis. Manipal University, Manipal, Karnataka, India.

Bagchi, S. and C. Mishra. 2006. Living with large carnivores: predation on livestock by the snow leopard (*Uncia uncia*). *Journal of Zoology* 268: 217–224.

Bender, B. (ed.). 1993. *Landscape: politics and perspectives*. Oxford: Berg Publishers.

Bertaux, D. 1982. The life course as a challenge to the social sciences. In: *Ageing and life course transitions: an interdisciplinary perspective* (eds. Hareven T.K and K.J. Adams). Pp. 125–150. London: Tavistock.

Bertaux, D. and P. Thompson. 1997. *Pathways to social class. A qualitative approach to social mobility*. Oxford: Clarendon Press.

Bjerke, T., O. Reitan, and S.R. Kellert. 1998. Attitudes toward wolves in southeastern Norway. *Society and Natural Resources* 11(2): 169–178.

Brottveit, Å. and O. Agedal. 1999. *Jakta på elgjakkulturen* (Hunting for the moose-hunting culture). Oslo: Abstrakt forlag.

Bruskotter, J.T., R.H. Schmidt and T.L. Teel. 2007. Are attitudes toward wolves changing? A case study in Utah. *Biological Conservation* 139: 211–218.

Cronon, W. (ed.). 1995. *Uncommon ground: toward reinventing nature*. New York, NY: W.W. Norton and Co.

Ericsson, G., G. Bosdet, and J. Kindberg. 2008. Wolves as a symbol of people's willingness to pay for large carnivore conservation. *Society and Natural Resources* 21: 294–309.

Ericsson, G. and T.A. Heberlein. 2003. Attitudes of hunters, locals and the general public in Sweden now that the wolves are back. *Biological Conservation* 111(2): 149–159.

Figari, H. and K. Skogen. 2011. Social representations of the wolf: a core of shared understanding. *Acta Sociologica* 54(4): 317–332.

Fort St. George Gazette. 1893. *Toda Patta Lands on the Nilgiris*. March 21, 1893.

Frey, J.H. and A. Fontana. 1993. The group interview in social research. In: *Successful focus groups: advancing the state of the art* (ed. Morgan, D.L.). Pp. 20–34. Newbury Park, CA: Sage Publishers.

Geertz, C. 1994. Thick description: toward an interpretive theory of culture. In: *Readings in the philosophy of social science*. (eds. Martin, M. and L.C. McIntyre). Pp. 213–232. Cambridge, MA: MIT Press.

Ghosal, S., V.R. Athreya, J.D.C. Linnell, and P.O. Vedeld. 2013. An ontological crisis? A review of large felid conservation in India. *Biodiversity and Conservation* 22(11): 2665–2681.

Gusset, M., A.H. Maddock, G.J. Gunther, M. Szykman, R. Slotow, M. Walters, and M.J. Somers. 2008. Conflicting human interests over the re-introduction of endangered wild dogs in South Africa. *Biodiversity Conservation* 17: 83–101.

Hedström, P. 2005. *Dissecting the social. on principles of analytical sociology*. Cambridge: Cambridge University Press.

Hobsbawm, E.J. and T. Ranger. (eds.). 1992. *The invention of tradition*. Cambridge: Cambridge University Press.

Hollander, J.A. 2004. The social contexts of focus groups. *Journal of Contemporary Ethnography* 33: 602–637.

Ingold, T. 2000. *The perception of the environment: essays in livelihood, dwelling and skill*. London: Routledge.

Inskip, C. and A. Zimmermann. 2009. Human-felid conflict: a review of patterns and priorities worldwide. *Oryx* 41: 18–34.

Kaltenborn, B.P. and D.R. Williams. 2002. The meaning of place: attachments to Femundsmarka National Park, Norway amongst tourists and locals. *Norsk Geografisk Tidsskrift* 56: 189–198.

Karant, K.U., A.M. Gopalaswamy, N.S. Kumar, S. Vaidyanathan, J.D. Nichols, and D.I. MacKenzie. 2011. Monitoring carnivore populations at the landscape scale: occupancy modeling of tigers from sign surveys. *Journal of Applied Ecology* 48: 1048–1056.

Karant, K.U. and S.K. Nepal. 2012. Local residents perception of benefits and losses from protected areas in India and Nepal. *Environmental Management* 49: 372–386.

Knight, J. (ed.). 2000. *Natural enemies: people-wildlife conflicts in anthropological perspectives*. London: Routledge.

Krange, O. and K. Skogen. 2011. When the lads go hunting: the ‘Hammertown mechanism’ and the conflict over wolves in Norway. *Ethnography* 12(4): 466–489.

Linnell, J.D.C., J.E. Swenson, and R. Andersen. 2001. Predators and people:

- conservation of large carnivores is possible at high human densities if management policy is favourable. *Animal Conservation* 4: 345–349.
- Macnaghten, P. 1995. Public attitudes to countryside leisure: a case study on ambivalence. *Journal of Rural Studies* 11(2): 135–147.
- Madhusudan, M.D. and C. Mishra. 2003. Why big, fierce animals are threatened: conserving large mammals in densely populated landscapes. In: *Battles over nature: science and the politics of conservation* (eds. Saberwal, V. and M. Rangarajan). Pp 31–55. New Delhi: Permanent Black.
- Masuda, J.R and T. Garvin. 2008. Whose heartland? the politics of place in a rural-urban interface. *Journal of Rural Studies* 24: 112–123.
- Morgan, D.L. 1997. *Focus groups as qualitative research*. Thousand Oaks, CA: Sage Publications.
- Neumann, R.P. 1998. *Imposing wilderness: struggles over livelihood and nature preservation in Africa*. Berkeley, CA: University of California Press.
- Olwig, K.R. 1996. Recovering the substantive nature of landscape. *Annals of the Association of American Geographers* 86: 630–653.
- Peterson, M.N., J.L. Birckhead, K. Leong, M.L. Peterson, and T.R. Peterson. 2010a. Rearticulating the myth of human-wildlife conflict. *Conservation Letters* 3: 74–82.
- Peterson, R.B., D. Russel, P. West, and P.J. Brosius. 2010b. Seeing (and doing) conservation through cultural lenses. *Environmental Management* 45: 5–18.
- Prabhakar, R. and M. Gadgil. 1998. Maps as markers of ecological change: a case study of the Nilgiri hills of southern India. In: *Nature, culture, imperialism: essays on the environmental history of south Asia* (eds. Arnold, D. and R. Guha). Pp. 152–184. New Delhi: Oxford University Press.
- Ravichandran, B. 2011. Number of tigers up in Nilgiris. *Deccan Chronicle* March 29, 2011.
- Saberwal, V.K., J.P. Gibbs, R. Chellam, and A.J.T. Johnsingh. 1994. Lion-human conflict in the Gir forest, India. *Conservation Biology* 8: 501–507.
- Saunders, N.J. (ed.). 1998. *Icons of power: feline symbolism in the Americas*. Abingdon: Routledge.
- Sjölander-Lindqvist, A. 2007. Local identity, science and politics indivisible: the Swedish wolf controversy deconstructed. *Journal of Environmental Policy & Planning* 10: 71–94.
- Skogen, K. and O. Krange. 2003. A wolf at the gate: the anti-carnivore alliance and the symbolic construction of community. *Sociologia Ruralis* 43(3): 309–325.
- Skogen, K., I. Mauz, and O. Krange. 2008. Cry wolf! narratives of wolf recovery in France and Norway. *Rural Sociology* 73(1): 105–133.
- Statistics Norway. 2011. *Statistics Norway*: www.ssb.no.
- Stedman, R.C. 2003. Is it really just a social construction? the contribution of the physical environment to sense of place. *Society and Natural Resources* 16(8): 671–685.
- Tacoli, C. 1998. Rural-urban intractions: a guide to the literature. *Environment and Urbanization* 10: 147–166.
- Thomassen, J., J.D.C. Linnell, and K. Skogen. 2011. *Wildlife-human interactions: from conflict to coexistence in sustainable landscapes*. Trondheim: NINA.
- Treves, A. and K.U. Karanth. 2003. Human-carnivore conflict and perspectives on carnivore management worldwide. *Conservation Biology* 17: 1491–1499.
- Vaccaro, I. and K. Norman. 2008. Social sciences and landscape analysis: opportunities for the improvement of conservation policy design. *Environmental Management* 88: 360–371.
- Wilson, M.A. 1997. The wolf in Yellowstone: science, symbol, or politics? *Society and Natural Resources* 10: 453–468.