

RESEARCH ARTICLE



The leopard that learnt from the cat and other narratives of carnivore–human coexistence in northern India

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Abstract

1. This study explores the diversity of factors that influence human–leopard relationships in Himachal Pradesh, India. Looking beyond the socio-economic and ecological dimensions of human–leopard conflict, it documents the multifaceted nature of human–wildlife relationships.
2. We carried out a qualitative analysis of human–leopard interactions based on interviews conducted during an ethnographic study of various stakeholders in the vicinity of a village in Hamirpur district, Himachal Pradesh, an area with a long history of co-habitation between leopards and rural inhabitants.
3. We propose that the unique ways in which our participants relate with non-human beings arose from both culturally informed and experience-based knowledge systems. Based on the narratives of the everyday interactions between humans and leopards, we propose that the people in the landscape relate to leopards with an underlying belief that leopards are thinking beings.
4. We explore the influence of myth and storytelling in the production of narratives that define the image of the leopard in the landscape. We also underline the possible shortcomings of looking at human–animal dynamics only through the narrow lenses of ecology or socio-economics during the production of policy and illustrate the consequence of discounting the significance of coexistence-promoting narratives in shared landscapes.

KEYWORDS

carnivore, Himachal Pradesh, India, human dimensions of wildlife, human–human conflict, human–wildlife interaction, leopard, perception, stakeholder

1 | INTRODUCTION

Different cultures around the world conceptualize nature, and wildlife in particular, in ways that can be radically divergent from the formalized, modern, urban, academic understanding of the same concept (Aiyadurai, 2016; Gebresenbet, 2017; Govindarajan, 2015; Hill &

Webber, 2010; Knight, 2003; Lescureux et al., 2011; Saunders, 1998). Currently, as reflected in conservation literature, the approach to studying wildlife–human interactions usually lies in the domains of the ecological and socio-economic sciences, often reducing very complex issues to metrics like economic damage or resource value that can be easily quantified in monetary terms (Inskip & Zimmermann, 2009).

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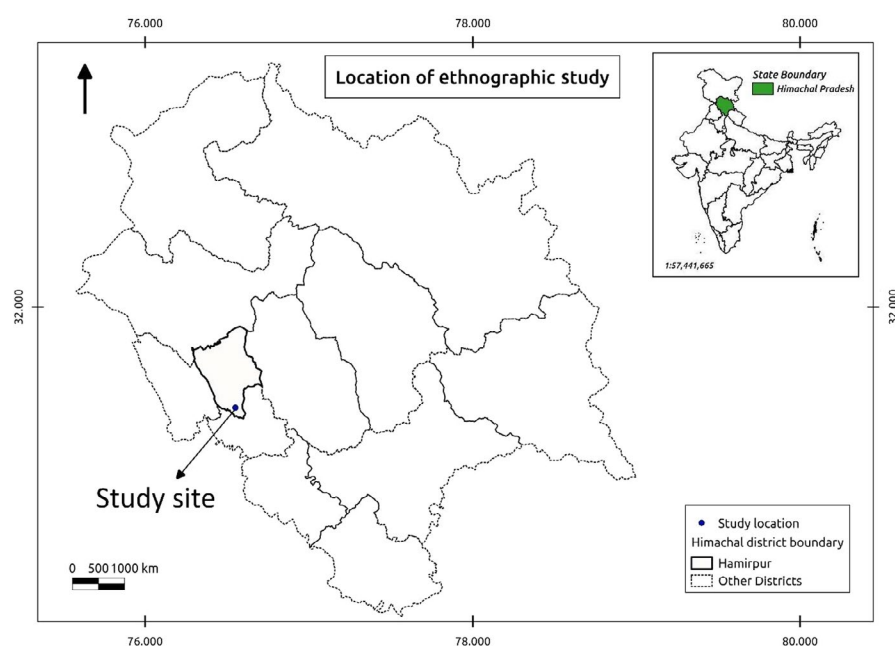
The positivism associated with western science was inherently an exodus in thought, away from religious explanations and towards the use of empirical, falsifiable and observation-based knowledge (Comte & Bridges, 2007). It promoted verifiability as the yardstick to produce a system based on scientific knowledge, consequently decreasing the significance of subliminal and subjective truths that are culturally informed through myth, religion and tradition (Morris, 1991). As positivist modes of knowledge production gained importance in the modern world, it supplanted culturally informed knowledge in moulding social processes including the political, economic and interpersonal. It has taken conservation many decades to recognize the relevance of culturally informed knowledge in the diversity of cultures that are not wholly entrenched in modernity. However, it is increasingly being recognized that human–wildlife interactions are more complex, taking on myriad forms (Pooley et al., 2017). Humans and wildlife interact with each other in ways which can range from reverence to extreme conflict (Hunt, 2008). Furthermore, it has been argued that what we term as conflicts between humans and wildlife are often reflections of underlying human–human conflicts between groups of people that view wildlife in different ways (Redpath et al., 2013). Understanding these complex human–human and human–wildlife relationships is essential, because humans predominantly determine the fate of wildlife.

Humans and animals have historically shared space, and anthropological accounts provide a glimpse into the rich diversity of interactions between people and wildlife, including large, potentially dangerous predators (Aiyadurai, 2016; Athreya, Odden, Linnell, Krishnaswamy, & Karanth, 2013; Newman, 2012; Saunders, 1998). Such narratives are often absent in ecologically designed studies of human–wildlife interactions. However, in the field of anthropology, recent developments have led to what is known as ‘the animal turn’,

which gives significance to culturally informed knowledge systems in the understanding of non-human beings (Weil, 2012). Many researchers, especially within the fields of geography, anthropology and animal studies recognize the existence of multiple societies across the world that understand and relate to non-human beings in a manner which differs from current academic discourse (Das, 2014; Faier & Rofel, 2014; Kohn, 2013; Weil, 2012). Recently, this insight is also gaining the attention of ecologists and conservationists. In addition, some emerging philosophies of post-humanism, such as the writings of Haraway (2008), extend the notions of morality, empathy and companionship to encompass beings other than human. While such emerging philosophies predominantly pertain to the animal rights tradition, which is often viewed as impractical in real world settings and perhaps incompatible with the process of wildlife conservation, the ideas may well have a broader relevance.

Furthermore, the discourse surrounding animism within the discipline of anthropology recognizes the plurality of cosmologies that exist in different parts of the world and takes particular interest in societies that understand the world as inhabited by human and non-human ‘persons’ in intersubjective and interagentive communication with one another (Arhem & Sprenger, 2016). While the structuralist approach understands animism through ontological categories, the phenomenological approach understands animistic beliefs as emerging out of a different way of learning about the world wherein some indigenous societies understand the world through interacting with it rather than as passive observers (Bird-David, 1999; Descola & Pálsson, 1996; Ingold, 2000; Vivieros de Castro, 1998). But theories surrounding animism predominantly pertain to indigenous communities and fails to encompass cosmologies of societies that are neither modern, nor quintessentially indigenous (Morris, 1998; Vivieros de Castro, 1998). The participants interviewed in this study

FIGURE 1 Location of ethnographic study in the Hamirpur district, Himachal Pradesh



are predominantly belonging to a rural Hindu community and are not traditional animists or a part of any indigenous community. Therefore, in this study, rather than trying to use the frameworks provided by animism, we use an inductive methodology to build an empirical understanding of the cosmologies present in this social landscape.

Over the last few years, such approaches have allowed researchers in India to discover unique interplays of human–wildlife relationships in a variety of landscapes across the country (Aiyadurai, 2016; Athreya, 2013; Barua, Bhagwat, & Jadhav, 2013; Ghosal & Kjosavik, 2015; Govindarajan, 2015; Kshetry, Vaidyanathan, & Athreya, 2017). In this study, which was carried out alongside an ecological study of human–leopard interactions in the state of Himachal Pradesh, India, we looked at the relationships local people have with leopards in shared spaces. We explore issues that are often overlooked in ecological studies but are very relevant to the conservation of large cats in human-dominated landscapes. Our study used in-depth, semi-structured interviews to explore narratives rural people possessed concerning their interactions and relationships with leopards and the authorities who manage them.

1.1 | Study site

The ethnographic research was centred around a village in the Hamirpur district of Himachal Pradesh, India (Figure 1). Himachal Pradesh is a Himalayan state with a population density of 123 people per km². Being a predominantly agricultural state, small scale farming and livestock rearing are the main sources of income for the majority of the population (<http://hpsamb.nic.in>, 2013). Hamirpur lies on the Shivalik range of the pre-Himalayas with elevations varying between 400 and 1,100 m (<http://hpsamb.nic.in>, 2013). The river Beas and its tributaries are the main source of water in the region, and they wind through the landscape forming small channels with seasonal flows of water that often have a dense undergrowth (called *nullahs*), and large and steep channels with perennial water flow (called *khuds*). The forest areas in Hamirpur primarily consist of Chir Pine (*Pinus roxburghii*) that are periodically harvested. The landscape also contains large stretches of grass, which is gathered for fodder by local communities between October and January. Anecdotal evidence suggests that leopards have been a constant presence in the region as far back as people remember and have been known to visit villages sporadically.

As per the most recent India census data (2011), the village contains ~2,050 people of whom about 80% are literate. The village population is predominantly Hindu, with ~27% of people belonging to the schedule castes category and less than 1% belonging to the schedule tribe (ST) category. A study by Sharma (2011) indicates that agriculture in Hamirpur is predominantly subsistence and cereal based and crop diversification towards the cultivation of cash crops has been minimal. While ~75% of women in the study village do agricultural work, only ~13% of the men are presently involved in agriculture. This is in keeping with the trend of men across Hamirpur increasingly diversifying into non-agricultural work over the past few decades (Sharma, 2009).

According to compensation records from the Himachal Pradesh Forest Department, the district of Hamirpur has recorded 74 instances of leopard attack on humans, three of them fatal, between the years 2004 and 2015. Furthermore, there were 239 instances of leopard attack on livestock between 2010 and 2016. Notably, there are no protected forests in the district of Hamirpur and the entire leopard population resides in multi-use landscapes (<http://hpsamb.nic.in>, 2013).

The interviews with villagers and migratory shepherds were conducted within a 5-km radius around the village. The study area was chosen due to the availability of a co-interviewer who could speak the local dialect (Pahari), as well as the presence of pre-established social connections with multiple individuals in the village.

2 | MATERIALS AND METHODS

The ethnographic approach firstly comprised of several unrecorded and unstructured conversations and observations, which created a foundation for more intensive follow-up. The primary interviewer, who is also the first author of this paper, spent 4 months between October 2016 and January 2017 in the district, interacting with local people whilst collecting leopard scat for a separate ecological study, concerning diet. Afterwards, between February and April 2017, semi-structured interviews were conducted with key stakeholders, using a list of deliberated questions as reference points (Appendix S1). Ethical approval was received from the Ethics Committee of the Centre for Wildlife Studies and informed oral consent was gained from all the participants to audio-record the interviews. No personal information was recorded that could potentially be used to trace the respondent.

A total of 23 semi-structured interviews were conducted. Six interviewees were seasonal migrants: of these four were shepherds, who drive their sheep to Hamirpur for the winter from higher altitudes, and two were horse-loggers (people who transport timber within wooded areas using horses) from the neighbouring state of Uttarakhand. 11 interviews were conducted with local villagers including: two former village heads (*sarpanch*); one Hindu priest; and one person who is occasionally called upon by the Forest Department to kill 'man-eating' leopards. Four interviews with territorial forest guards of Hamirpur, and two interviews with higher officials in the Forest Department, were also conducted. Of the 11 interviews conducted with local villagers, female participants were present in six interviews. One of the four interviews conducted with forest guards was with a female participant. As there was no noticeable difference between themes that emerged from male and female participants, no distinction will be made with regard to gender in this paper.

Due to the ethnographic nature of the study, the interviewer spent a substantial amount of time involved in everyday activities such as farming, cooking and travelling in the landscape. The participants selected were those who liked to talk and share stories, regardless of their apparent 'positive' or 'negative' attitude towards leopards. Some participants were interviewed more than

once as they required more time to grow comfortable talking to the interviewer, or desired to share further stories and knowledge. The interviewer was accompanied by a local, Pahari speaking co-interviewer to interview villagers and shepherds. The duration of the interviews varied between 15 and 100 min depending on how much the participants wanted to share. Also, interviews with individuals often spontaneously transformed into group discussions, as family members, neighbours and passers-by took interest in the conversation.

The questions were selected and organized according to opportunistic discretion exercised by the interviewers. Consequently, questions were often asked which were not on the list, but emerged out of the interview itself. The questions started out exploring the nature of interactions that each participant had with leopards, and then went on to detail the narratives that existed around them in the landscape through myth, stories and the observed behaviours. In addition, some questions that touched upon culture, policy, and other factors which influenced human–animal dynamics in the landscape were also explored.

Audio-recordings of the interviews were directly translated into English and transcribed. An inductive qualitative approach was used to arrive at an understanding of the human–leopard dynamics within our study site. Thematic analysis was conducted on the transcribed data, whereby the emergent themes and narratives related to leopards were identified and relevant data was manually coded into each theme. Hermeneutic methods were used to bring out the dominant narratives of how humans relate to the presence of leopards in their landscape. Hermeneutic methods focus on interpreting meaning from written or spoken sources, and place emphasis on interpreting them within the context of the environment from which they are collected (Mugerauer, 1994). As such, our results try to represent the depth of the relationship between leopards and humans within our study site. We present our results as a series of narratives that emerged from the interviews. The five main themes/narratives that emerged from the data have been organized into the five subheadings within the discussion section of this paper. Specific excerpts from the interviews have been used to exemplify significant insights gained during the ethnographic

study. However, in order to make them understandable, we have had to paraphrase and edit them considerably because of the challenges of direct translation between languages.

2.1 | When the leopard is an everyday reality

The co-habitation of humans and leopards in close proximity leads to frequent encounters; these interactions contribute to how humans perceive leopards and how they behave towards each other. This provides scope for examining the nature of their everyday interactions and the way in which the participants interpret and understand these interactions.

Interviews revealed that our participants had numerous experiences with leopards and these rarely resulted in human injury or human death, indicating that non-aggressive human–leopard interactions are more a norm than a rarity in this landscape. The interviews also showed how these non-aggressive interactions, contributed significantly to participants' understanding of the leopard as a multi-faceted animal beyond the unidimensional images of a 'aadam khor' (man-eater) or menace that is often presented in the media and popular literature (Hathaway et al., 2017). Rather, the participants described the leopards as shy natured, fearful, quick, elusive and clever creatures.

The frequency of neutral interactions between humans and leopards is revealing; not only of the leopard's nature but also of the humans in the landscape. During the interviews, the shepherds and villagers gave detailed descriptions of leopards and their behaviours, demonstrating the keen observations that they had made of the animal (Table 1).

Above are just some of the observations that are described by most participants and constitutes a body of knowledge that has arisen due to the frequent interactions with leopards in that landscape. It appears as if the participants are interested in the animal and observe it and learn about it in return. Their intimate knowledge of their wild neighbour is in itself a very powerful contributor to the inter-species relationship 'negotiations'.

Every participant we interviewed described the leopards as fearing human beings, although they recognized that they could be protective of their prey if disturbed on a kill:

TABLE 1 Observations about leopard behaviours detailed by the participants

Sl no.	Observation
1	They always bite at the neck of the prey animal
2	They drag away the prey and eat it somewhere else
3	They are solitary animals, females and males only stay together during the mating season, and females remain with their cubs until they grow up
4	They stay in the cover provided by <i>nullahs</i> (forested stream beds) during the day and emerge to hunt during the night
5	They don't have a specific home/den but wander from place to place
6	They have a distinctive call, scat and scent (Though the description of the scent they leave varied – from odours of sheep, meat, basmati rice and burnt hair to something rotten)
7	They walk very quietly and are well camouflaged in the surrounding
8	They hide while hunting (stalking), not revealing themselves until the last minute

Shepherd 1: Yes, he fears humans, but if you go in the middle of his hunt, he will attack you

Shepherd 4: Everyone fears humans. Everyone is careful about their safety. If he is eating something and we interfere, we will get attacked by the leopard

Such an understanding of the leopard, as an animal that is naturally scared of humans and usually has justification for attacking humans when people interfere with it, perhaps makes it easier for people to share space, as they recognize that leopards are not just a bloodthirsty predator out to kill people. It also indicates that the participants understand these animals as having rules or patterns to their behaviour. In the quotes above, the reason for the leopard to potentially attack humans lies with the action of the human and specific circumstances rather than the will of the leopard. It not only removes the 'blame' of the attack from the leopard by producing tangible reasons that justify the leopard's actions, it also ascribes a degree of predictability to the animal.

Unlike the western cosmology which believes that humans possess attributes that no other species possess, theories on animistic cosmologies propose that animistic cultures perceive humans and other beings as ontologically equal. They therefore endow non-human beings with attributes such as consciousness, self, and soul that are otherwise considered as uniquely human (Arhem & Sprenger, 2016; Descola & Pálsson, 1996). Humans are understood to be embedded within a network of non-human beings, all interacting together in various ways and cohabiting in the landscape (Kohn, 2013). According to a Nayaka community in southern India a person is defined as 'one whom one shares with' (Bird-David, 1999). Notions of 'personhood' are thereby extended to include animals, plants, and occasionally even inanimate objects (Ingold, 2000). For example, according to Kohn (2013), the people of Avila, a tribe in the Amazonian rainforest, 'grant selves' not only to other humans but all the beings with whom they share space. Such extended notions of 'personhood' allows for relationships of interagentivity between humans and non-human beings. Even though the people of rural Hamirpur are not traditional animists the images of the leopard as described by the shepherds we interviewed was extremely vivid and their understanding of leopards held an essence of what Kohn calls 'granting selves' and Ingold calls 'notions of personhood'. The participants spoke of leopards as thinking beings that consciously make decisions to behave the way they do.

For example, in one interview, the shepherd described how the leopard may wait to see if it gets an opportunity to take livestock when they release them from their night-time pens to graze during day time. The shepherd also described an incident when he was sitting among the pine trees and saw a barking deer, and a leopard caught it but when the shepherd ran towards the leopard, it ran away. The shepherd then described how he left the barking deer behind because he believed that if he took it away the leopard would come and take a domestic animal from his herd. He also mentioned that the leopards eat whatever they find, be it a dog or a deer.

Such descriptions indicate that there are many human characteristics that the participants ascribe to leopards including the abilities to process individual situations and respond to each specific circumstance.

Shepherd 3: About 40 sheep were taken in one night this year! Once the leopard gets a taste for sheep, he will come every day. But when we chase him away from our sheep he will understand that he will get harmed if he comes back in this direction. Therefore, he will be scared and stop coming our way.

The shepherd chases the leopard away not only to save his sheep in that instance but in the hope of instilling fear in the leopard so that he would be scared of returning. As the leopard is an integral part of this man's everyday life, he is in the habit of constantly and actively negotiating with the leopards to minimize livestock depredation.

A human being typically navigates relationships with other human beings with an underlying assumption that the other can think, learn and respond. Can we consider the possibility that humans in some communities navigate relationships with non-human beings such as leopards without assigning a static predetermined behaviour to the leopard and instead granting the possibility that the leopard can learn, understand and respond to situations and environments? What kind of human-wildlife dynamics does this produce? Ghosal and Kjosavik (2015) discuss the problems that arise when the concept of 'actors' (defined by the possession of agency in a landscape) is limited to humans. The description of leopards in the interviews seemed to indicate that our participants consider leopards to be 'actors' rather than objects. Speaking to the participants introduced us to the leopard, not as a wholly instinct-driven creature but as a thinking being with whom they constantly negotiate space and access to shared resources.

2.2 | The role of mythos in facilitating shared spaces

Greek philosophers rationalized the difference between mythos and logos as referring to different kinds of meaning. Objective reality would be approached through logos, the accumulation of observable empirical knowledge, while mythos would provide insight into that which is not tangible. Aristotle distinguished between Truth with the capital 'T' and truth with the lower case 't' and used the nomenclature 'T'ruth to refer to objective truth and 't'ruth to refer to subjective truth. Science defined by its positivist intentions has always been in the pursuit of 'T'ruth. In extension, it is the 'L'opard (with the capital 'L'), which has been the focus of most scientific studies so far. But in this paper, we are attempting to explore the subjective leopard as experienced, perceived and understood by the people of a landscape (the leopard with the lower case 'l').

Mythology is a process of constructing meaning from the world around us and has been used by human-kind for millennia to try and explain the nature of human existence (Armstrong, 2006). The human mind, with its capacity to think beyond the 'reality' of what

is and imagine that which has never been sensed or experienced, is constantly in pursuit of making sense of the world that surrounds it. The mythologies of a landscape provide the mental frames for communities to function effectively in their environment. As explained by Armstrong (2006, p. 4) in *A Short History of Myth* 'A myth is true because it is effective, not because it gives us factual information. If, however, it does not give us new insight into the deeper meaning of life, it has failed'. Human imagination which has more recently allowed for scientific enquiry and technological progress has also facilitated the complex mythologically oriented thought processes (Armstrong, 2006, p. 1).

Mythology is inherently nonlinear, multifaceted and dynamic. Unlike scientific theories, myths are not created in a manner that follows a logical trail of thought but are rather influenced heavily by cumulative leaps of imagination and insight that are sporadic and untraceable (Armstrong, 2006). Asking questions about the attitudes formed in people as a consequence of myth might therefore be far more fruitful than attempting to trace the origins of the myth (Armstrong, 2006). Myth is influenced by many factors including politics, social structure, religion, power and history, therefore a myth about a leopard reveals insights not only into leopards but also about the society in which it resides. As Armstrong (2006) explains, there is no right, wrong or original version to a myth. It is constantly in flux as it responds and reflects on the world in which it presides, it changes through time, in accordance with the transitions of society (Armstrong, 2006). As such, myths represent valuable insights into the adaptations that a society adopts to cope with external issues that influence their lives, such as leopards.

The strong presence of myth in our study area made it possible for there to be multiple narratives of the leopard rather than just one. When we began to examine the subjective leopard as perceived by the participants, we found that each participant understood the leopard slightly differently from the others. The myths about leopards that had captured each person's attention were different and the meaning that they had derived from each of these stories also differed between participants. But this difference seemed subtle in comparison to the stark contrast between the 'Leopard that we researchers had until then learnt about and the 'leopards that the participants introduced to us.

The title of the paper refers to a myth that we encountered across the study landscape. The simple statement 'Billi uski masi hai' (The cat is the leopard's aunt), perplexed us every time we heard it. From the shepherd to the forest official, everyone except the researchers, all of who were from urban India, seemed familiar with the phrase and it was often brought up while describing the leopard. Asking further questions about this statement produced associated statements such as 'Usko shikar karna billi ne hi sikhaya' – Shepherd 1 (The cat taught the leopard how to hunt) and 'Wo billi ka sir nahi khata' – Villager 10 (The leopard does not eat the cat's head). Eventually we got a complete story about the leopard and the cat from the wife of a villager we interviewed. According to the story, the leopard initially did not know how to hunt. That cat taught the leopard the hunting technique of catching the prey by its neck. The

cat is personified as the leopard's aunt, specifically *massi* – a mother's younger sister.

Villager 8: The leopard asks the horse, 'Uncle (chacha) if I want to hunt a horse, from where should I attack?' The horse told him that he has to attack from behind, but when the leopard attacked the horse from behind the horse kicked him and the leopard went flying 8-10 feet and fell in the ditch. Therefore, horses never get caught by leopards, wherever the leopard tries to attack from, the horse will turn and kick from that side.

The leopard then went to the cat and asked, 'Aunt (massi) how do you attack your prey?' Unlike the horse that led him astray, the cat showed him the right way to hunt. The cat explained to the leopard 'Child, you must attack at the neck (kukri)'. The cat is also of similar colour to the leopard. The cat is his aunt (massi).

In the context of India where large and extended families are strongly significant in the social landscape (Nayak & Behera, 2014), the specific relationship of aunt (massi) and nephew ascribed to the relationship between the cat and the leopard can be considered noteworthy. These relations ascribe a system of interconnectedness between the beings that the people share their space with. Specifically, it shows a belief that species barriers are permeable, and that individuals of different species can be both closely related (family members) and can communicate (Govindarajan, 2016; Kohn, 2007; Morris, 1998).

Some participants indicated a far greater reliance on myths in their understanding of leopards, as compared to others. Among them was an elderly migratory shepherd, who told us a great deal about the 'leopards as he knew them. A story that integrated detailed insights into leopard behaviour and some of the origin myths of Hinduism.

Shepherd 1: When Lord Shiva was distributing food to all the different organisms in the world, the leopard hid behind the yam leaf (arbi). He can be very small when he wants, but when he is about to attack, he can become very big as well. After Shiva distributed food to all the living creatures, the leopard came out from hiding and complained to Lord Shiva that he did not get any food. To appease the leopard's complaint, Lord Shiva generously made all the best food in the world available to him. So, he can eat whatever he wishes to eat, but he is very protective of all that he manages to catch.

2.3 | The double-edged sword of religion

In most parts of India, the perceived will of the gods and the rules and ethics dictated by religious institutions encircle people's

lifestyles, educational and professional choices, relationships, and even eating habits! When this is the case, it is not a long stretch to postulate that the attitudes of people towards institutions, society and perhaps leopards can be influenced by religion (e.g. Li et al., 2014).

Some animals gain great significance due to their symbolic representation in religion. In India apart from the cow which has gained paramount importance nationwide, especially in the present socio-political context, many other wild animals are also considered to be important from the religious standpoint. Rhesus macaques as *Hanuman* (Saraswat, Sinha, & Radhakrishna, 2015), tigers and leopards as *Wagh Devta* (Ghosal & Kjosavik, 2015), elephants as *Ganesha* and bears as *Jambuvan* (Kosambi, 1966) are just some examples of Hindu and tribal representations of wild animals in India that justifies their existence through the religious realm. If represented in a positive light, they could persuade local communities to ensure that these species are protected or at least not directly harmed.

Large cats are associated with gods in a variety of ways across India. *Wagoba* is a tiger/leopard deity worshipped across Maharashtra out of fear and reverence (Athreya et al., 2013). In the Sundarbans of India and Bangladesh, both Hindus and Muslims associate tigers with the deity *Bonbibi* who is considered to be the protector of the forest (Jalais, 2008). Anthropological accounts across South Asia reveal representations of leopards and tigers as protectors of people; following people home on dark, dangerous nights and keeping them safe against evil (Boomgaard, 2001; Newman, 2012). Speaking to the local priest in our study area revealed a similar belief.

Villager 9: The leopards would walk behind people as if to accompany humans. Like dogs they used to keep walking behind. But the person is not supposed to turn and look back. If you turn and look, he will attack. If you don't turn, he will keep walking. He will stay with you all the way till your destination. Stay with you as in, no one can surround you or steal from you, dacoits [bandits] can't surround you, and if someone gets to you the leopard will face them.

The leopards are also regarded as the vehicle of the Goddess (*Devi Maa*) that is commonly worshipped in Himachal Pradesh. We found that the belief of leopards as protectors is profound, and it provides a positive attribute to the species. Such beliefs could lead to people considering leopards as being not only accepted but also wanted and appealing in their landscape. Ultimately it could lead to a positive interpretation of human-leopard interactions and therefore contribute positively to human-leopard relationships.

However, the label 'protector' attributed to the leopard could also be the reason for the use of leopard claws and teeth as a protective device worn around the neck to ward off evil and take away fear. Interviews with forest guards in Hamirpur, Himachal Pradesh revealed instances of dead leopards found in forested patches near villages that had their claws and whiskers missing.

Thus, in this landscape, the belief that leopards protect people and the belief in the protective powers of leopard nails are two sides of the same coin. The sentiment of protection associated with leopards can contribute to a willingness in people to share space with leopards while simultaneously leading to a demand for leopard body parts, which can potentially lead to poaching. Therefore, caution needs to be exercised when using religious or cultural beliefs to promote conservation.

2.4 | How did the leopards come here? It's a conspiracy!

Mythology is still actively used in the modern world to help people cope with the world around them, and many of the narratives that people share with each other can be viewed as a modern-day mythology (Armstrong, 2006). It is increasingly understood that human-wildlife conflicts often have their roots in human-human conflicts (Redpath et al., 2013). Pooley et al. (2017) explains that human-human conflicts, conflicts between different institutions and individuals within society, can be major drivers of human-wildlife conflict. For example, retaliatory killing of wild animals could be understood as an act of aggression by local people revealing their strained relationship with the government, rather than a direct reaction to the economic loss faced due to incidents of livestock depredation (Gandiwa, Heitkönig, Lokhorst, Prins, & Leeuwis, 2013). Mathur (2014) describes the bureaucratic atmosphere in the neighbouring state of Uttarakhand, India surrounding the events of leopard/tiger attacks on human beings. The processes of economic and political pressures that define the institutional response to the events, the policies that bind the Forest Department, the ways in which these responses are then interpreted by the local people, and the conflicts that arise from the strained relationships between the different segments of society all redefine the relationship that people have with tigers and leopards (Mathur, 2014).

We found that there were popular conspiracy theories (modern-day myths) in our study area pertaining to the presence of the animals in the human-dominated landscapes. These theories proposed that the Forest Department has allegedly released leopards from zoos into the surrounding landscape. Participants explained that the leopards were perhaps released as a security measure that had been implemented to prevent timber extraction from the forested areas in the landscape. Interestingly, Bhavishkar (2000, p. 113) describes a similar belief she encountered in Kullu District of Himachal Pradesh, indicating that such beliefs are perhaps present across the larger landscape rather than restricted to the study site. According to the participants' understanding, the leopards were released by the forest department with the intention of scaring the villagers out of the forested areas. The villagers and shepherds we interviewed almost unanimously referred to the present leopards in the landscape as '*paltu*' meaning 'domesticated' as opposed to the 'junglee' or 'wild' leopards that have always existed in the landscape (also see Doubleday, 2017).

Shepherd 1: The leopards are released here from the zoo. They have a chip in their ear through which the government tracks the leopard's movements. It is used to identify the people who are killing the leopards. But there is no record of it. The first time leopards were released by the Forest Department (janglat), some people used poison or guns to finish them off. But as the leopard numbers reduced, the government released more of them from the zoo. The government leaves them here so that the forests are cared for/protected. Due to this, women won't go alone into the forest. (Buta) trees will keep growing if the leopard is in there.

As such descriptions of a 'conspiracy theory' made us curious, we asked the Forest Department personnel whether they had heard similar accounts and how they understood such claims. We learnt from the interviews with the forest department officials and guards that although there has never been an instance of a zoo leopard being released into the wild in Himachal Pradesh, there have been some instances where a leopard that was captured when found in a human-dominated area had been released elsewhere. Partial knowledge about such incidents could spread across the landscape over time and eventually morph into the conspiracy theory that presently exists.

The belief that the present leopards have been released by the Forest Department, attributes the 'ownership' of the leopards to the department. The animal therefore becomes an instrument of the government's intentions, thereby placing the blame of any harm done by the leopard in the hands of the Forest Department. The argument made by most of the villagers and shepherds we interviewed is that the 'domesticated' leopards are habituated to human beings and are therefore not scared of humans. The human attacks by leopards are often ascribed to this difference in the character of leopards.

Through such narratives the participants reveal co-existence of not just human-animal or nature-culture but also of complex and contradictory perceptions of leopards. The same person can hold within himself/herself contrasting and indistinguishable images of the same being, metonymically represented as the *jungle* leopard that protects and the *paltu* leopard that attacks.

It is possible that this is a way the participants have found to make sense of the dissonance they are experiencing due to the difference between the leopard that their myth, religion and culture tells them about and the leopard that they are currently encountering in their lifetime. Such conspiracy theories of large predators (and snakes) being secretly released by governments or conservation NGOs are becoming global and represent a fascinating insight into how people give expression to their conflictual relationship with authorities and explain perceived changes in animal behaviour when they return to landscapes after periods of absence (Skogen, Krange, & Figari, 2017; Skogen, Mauz, & Krange, 2008).

2.5 | Bureaucratic discretion

In our interviews it was also apparent that hunting, timber extraction, encroachment into forests, and many other such illegal

activities persist, despite awareness in the villages about the illegality of such activities. The participants hesitated to talk about incidents of hunting because they were aware of the fact that it was a punishable offence. However, during the interviews it also became clear that even though the incidents of hunting or timber extraction do not get officially recorded, their occurrence is well known within the rest of the community.

On one of the days during fieldwork, we came across a band of people moving within Demarcated Protected Forest land in Hamirpur with a pack of dogs. Speaking to participants in the vicinity revealed that they were hunters from a nearby area who had probably gone in search of wild meat. Conversations with the participants in the area over the period of the day revealed that almost the entire village that surrounds that patch of forest was aware of the hunting and knew who the hunters were. Neither a plan nor a need to report the hunting/hunters to a government authority was mentioned by the participants during any of the conversations on that day. A few people also mentioned during this incident, that the Forest Department guard is also usually aware of such incidents since he or she belongs to the very same village/community but does not choose to report it to higher authorities. For instance, the local Forest Guards explained that even though the public knew that activities such as hunting and felling trees were illegal, in the circumstance wherein the entire village was willing to carry out the illegal activity, it could be kept secret to prevent anyone from the outside knowing about it.

Although the leopard is viewed as the goddess' vehicle, is associated with the deity and considered a protector, its status as a protector has led to people believing that wearing the claws of the leopard can protect them as well. They are aware that it is illegal to wear the claws, and there is no evidence to indicate that leopards are being poached to procure the claws. Nevertheless, the seemingly widespread possession of leopard claws in the region is indicative of a willingness in the community to carry out behaviour that is illegal as per the formal law but sanctioned by social and cultural norms (Von Essen, Hansen, Nordström Källström, Peterson, & Peterson, 2014). This indicates that awareness about the illegality of certain behaviours and actions is perhaps not sufficient in curbing that behaviour. Furthermore, field level implementation of the hierarchically disseminated policy by the forest guards is complex and layered with interpersonal and social dynamics, since they live as part of the same communities over whom it is their responsibility to enforce the law (Vasan, 2002).

3 | CONSERVATION IMPLICATIONS

Two broad approaches can be considered in response to the present circumstance of conservation revealed in our study. The first approach involves a replacement of the present hierarchical system of policy enforcement with Community-Based Conservation interventions wherein local populations participate in the management and governance of their ecological landscape (Dressler et al., 2010; Peterson, Russell, West, & Brosius, 2010). The success of

Community-Based Conservation interventions has been questioned repeatedly, but a reorientation towards the inclusion of culture and social institutions within the framework has been proposed to increase its effectiveness (Berkes, 2004; Waylen, Fischer, McGowan, Thirgood, & Milner-Gulland, 2010). The second approach, as articulated by Vasan (2002) involves the reconceptualization of policy and implementing mechanisms within the existing hierarchical systems such as the forest department, recognizing the compulsions and requirements of the implementers. Both the approaches converge in recognizing the need to consider the specific socio-cultural context in the process of conceptualizing and implementing the conservation framework for a landscape (Berkes, 2004; Vasan, 2002).

Conservation action addressing issues related to human-leopard interaction has so far been predominantly techno-managerial involving measures such as trapping the leopard, killing it, setting up rescue centres and providing monetary compensation. This study raises questions about whether these techno-managerial strategies are sufficient to address the multifaceted complexities in the way people who share space with the leopards respond and live with the animal (Naughton-Treves, Grossberg, & Treves, 2003). This question becomes more pronounced in rural landscapes such as that of Hamirpur, Himachal Pradesh which are strongly influenced by culturally informed knowledge systems (as opposed to formalized scientific knowledge systems). The values ascribed to each being were not always stated or discussed explicitly in any structured manner. The relationship with leopards that the people in Hamirpur describe is not solely based on the prescription of the Wildlife Protection Act or the formal academic descriptions they learnt in books or via television. Rather, they display attitudes that reside implicitly in their society, and which are apparently governed by personal experience and the dynamic, constantly evolving, myths and stories that are pervasive in the landscape.

The most important finding for conservation lies in the way that participants generally viewed leopards as complex individuals with whom they could 'negotiate' the sharing of space. This interaction was also similar to how these participants acted towards local representatives of the management authorities in terms of informally negotiating access to forest resources. In both cases there appeared to be a willingness to coexist, given the existence of some flexibility and scope for reciprocity. This is a classic example of the need to balance top-down objectives with bottom-up approaches (Redpath et al., 2017). Such approaches have been institutionally hindered in India both by a lack of tradition for it and a lack of resources and training among Forest Department staff (Miller, 2017). However, it is becoming increasingly apparent that conserving wildlife in multi-use shared landscapes in India will require the adoption of a wide range of diverse and locally adapted approaches. The villagers in our study landscape demonstrated an amazing degree of acceptance for their wild and potentially dangerous neighbours. The main challenge for authorities is to understand the nature of this acceptance and cultivate it. The integration of the modern myth about the recent release of leopards into the landscape

with a much older mythology that touches on some of the central elements of mainstream Hinduism illustrates how dynamic these cultural relationships can be. Conservationists are thereby challenged with comprehending the contradictory imaginations of the leopard as they coexist within a landscape, and perhaps even within an individual. In the face of rapid social change in India there will be a need for continuous efforts to understand and react to changes in the cultural relationship that rural people maintain with the wildlife that shares their landscape and the authorities that regulate this relationship. While the findings from our site are broadly similar to those documented further south in a study in Maharashtra (Ghosal, 2013), it is hard to say how generalizable they are to other settings.

Our study shows how complex the underlying factors can be. Far more research of a similar type is needed, and it underlines the importance of studying human-animal relationships through the complimentary lenses of multiple disciplines. This approach to the study of human-animal relations should be more widespread in conservation, and not merely restricted to 'traditional' or 'indigenous' societies.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORS' CONTRIBUTIONS

Dhee, Vidya Athreya, John D. C. Linnell, Shweta Shivkumar and Sat Pal Dhiman conceived the ideas and designed methodology. Dhee and Shweta Shivkumar collected the data. Dhee analysed the data. Dhee, Vidya Athreya, and John D. C. Linnell led the writing of the manuscript. All the authors have contributed critically to the drafts and have given final approval for publication.

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