



Understanding People's Relationship With Wildlife in Trans-Himalayan Folklore

Saloni Bhatia^{1,2,3*}, Kulbhushansingh Suryawanshi^{1,2}, Stephen Mark Redpath⁴, Stanzin Namgail⁵ and Charudutt Mishra^{1,2}

¹Nature Conservation Foundation, Mysore, India, ²Snow Leopard Trust, Seattle, WA, United States, ³Manipal Academy of Higher Education, Manipal, India, ⁴School of Biological Science, Zoology Building, University of Aberdeen, Aberdeen, United Kingdom, ⁵J&K Higher Education Department, Jammu, India

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*Correspondence:

Saloni Bhatia
saloni86@gmail.com

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People's views and values for wild animals are often a result of their experiences and traditional knowledge. Local folklore represents a resource that can enable an understanding of the nature of human-wildlife interactions, especially the underlying cultural values. Using archival searches and semi-structured interviews, we collected narratives about the ibex (*Capra sibirica*) ($n = 69$), and its predators, the wolf (*Canis lupus*) ($n = 52$) and the snow leopard (*Panthera uncia*) ($n = 43$), in Ladakh, India. We compared these stories to those of a mythical carnivore called *seng ge* or snow lion ($n = 19$), frequently referenced in local Tibetan Buddhist folklore and believed to share many of the traits commonly associated with snow leopards (except for livestock depredation). We then categorized the values along social-cultural, ecological and psychological dimensions. We found that the ibex was predominantly associated with utilitarianism and positive symbolism. Both snow leopard and wolf narratives referenced negative affective and negative symbolic values, though more frequently in the case of wolves. Snow leopard narratives largely focused on utilitarian and ecologicistic values. In contrast, snow lion narratives were mostly associated with positive symbolism. Our results suggest that especially for snow leopards and wolves, any potentially positive symbolic associations appeared to be overwhelmed by negative sentiments because of their tendency to prey on livestock, unlike in the case of the snow lion. Since these values reflect people's real and multifarious interactions with wildlife, we recommend paying greater attention to understanding the overlaps between natural and cultural heritage conservation to facilitate human-wildlife coexistence.

Keywords: attitudes, culture, human-wildlife, narrative, stories, storytelling

INTRODUCTION

People's relationship with wild animals is rarely simple or static. It covers multiple states from reverence to fear, sometimes simultaneously. However, the term human-wildlife conflict has assumed centerstage, leading to the belief that most forms of interaction with wildlife result in damage to life and/or property (Redpath et al., 2014). Human-wildlife interactions are instead better viewed along a spectrum ranging from negative to positive (Bhatia et al., 2019). One way to understand how people build and sustain complex and multifarious connections with wildlife is to examine folklore and narratives in which the two are intertwined (Hughes et al., 2020).

Folklore is defined as a traditional dramatic narrative that is primarily (though not necessarily) transmitted orally (Fischer, 1963). Throughout history, myths, fables, anecdotes and legends have provided a window to understanding the interconnections between the human and more-than-human worlds (Fischer, 1963). Animals in folklore allow us to think about and make sense of social structures and moral codes (Levi-Strauss, 1963; Aas, 2008; Herrmann et al., 2013) and can also enable us to participate in political discourses about nature and its management (Woods, 2000).

Knowledge, experience and beliefs iteratively feed into each other and affect how people relate to wild animals. In India, for instance, carnivores like the leopard (*Panthera pardus*) and the tiger (*Panthera tigris*) are associated with powerful deities and are thus worshipped in some parts of the country (Athreya et al., 2018). In many Asian and African cultures, primates are culturally revered. This is presumed to make people more tolerant toward crop damage caused by them (Knight, 1999; Baker et al., 2014; Saraswat et al., 2015). Cultural taboos and beliefs can also have negative impacts on wildlife. For example, local communities have been reported to associate the Zanzibar leopard (*Panthera pardus adersi*) with witchcraft and sorcery and are thus afraid of this feline (Walsh and Goldman, 2007).

Stories can be contradictory, mirroring the ambiguity and heterogeneity in people's sentiments. In rural Iberia and Mongolia, for example, folk legends describe the wolf (*Canis lupus*) as a diabolical or dangerous creature, a totemic animal reflecting courage and fearlessness, as well as a savior (Hunt, 2008; LeGrys, 2009). Similarly, folklore around the kodkod cat (*Leopardus guigna*) and puma (*Puma concolor*) show that both felids are associated with a range of positive and negative values (Herrmann et al., 2013).

As demonstrated above, folklore frequently juxtaposes humans and animals, pointing to similarities and differences between the two, thereby conveying salient cultural values (Tapper, 1988). Human values are considered the cornerstones of culture (Hofstede, 1984). Values are defined as "conceptions of the desirable that guide the way social actors (e.g., organizational leaders, policy-makers, individual persons) select actions, evaluate people and events, and explain their actions and evaluations" (Schwartz 1999, p. 24). Values are the defining feature of ethics and morality (Fox and Bekoff, 2011).

A study of wildlife values and attitudes toward wolves and coyotes (*Canis latrans*) in the United States noted that certain set of values were closely tied to positive and negative responses toward the two predators (Kellert, 1985). Values such as love for the outdoors, concern for the environment and the ethics of animal welfare were correlated with positive responses whereas values like animal use and aversion or fear of wildlife were associated with negative responses. Kellert (1985) further suggested that the negative responses could be a result of legends and myths that framed the predators in an unfavorable light. Understanding the links between folklore and human values could, therefore, enable conservation practitioners to incorporate biocultural heritage into conservation messaging, which is likely to resonate with communities sharing space with wildlife (Fernández-Llamazares

and Cabeza, 2017). However, this remains an understudied field in academia, especially in the context of conservation.

We therefore sought to understand the values ascribed to high altitude mammals in local folklore. While we were open to stories on any wildlife species, we found an adequate number of stories on the primary wild prey, the ibex (*Capra sibirica*) and its top predators, the wolf and the snow leopard (*Panthera uncia*). Together, the two carnivores are responsible for most of the livestock predation by wild animals in the Central and South Asian high mountains (Jackson et al., 2010; Mishra and Suryawanshi, 2014). People's attitudes toward these carnivores, however, are not defined by livestock losses alone but are influenced by socio-cultural factors like perceptions of risk as well as social norms (Bhatia et al., 2020). We also contrasted values associated with these real-life, damage-causing predators with a mythical predator, the snow lion or seng ge, that is not responsible for livestock predation. This allowed a better understanding of whether and how values differed based on people's lived experiences.

MATERIALS AND METHODS

Study Area

Previously located in the Indian State of Jammu & Kashmir and now a Union Territory, Ladakh is a cold-desert where elevations exceed 3500 m above msl with temperatures ranging from -30°C to 30°C in winter and summer, respectively. The region is inhabited by wild ungulates like the ibex, blue sheep (*Pseudois nayaur*), Tibetan argali (*Ovis ammon*), Ladakh urial (*Ovis vignei*), and Tibetan gazelle (*Procapra picticaudata*), and predators like the snow leopard, wolf, and lynx (*Lynx*). There is a widespread belief in the existence of a mythical creature called the snow lion or *seng ge*, frequently referred to in Tibetan Buddhist folklore. This carnivorous animal is believed to reside in remote glaciers. Its image is often carved or sculpted outside monasteries in Ladakh. It has a white body and a turquoise mane. The snow lion shares many traits with the snow leopard, for example, it has the ability to hunt and survive in the cold. It also possesses a camouflaged coat and a bushy tail. However, unlike the snow leopard it does not cause livestock depredation.

Ladakh has had various cultural influences especially from Central Asian, Balti, Kashmiri and Tibetan cultures, owing to its prominent place on the historic Silk Route (Rizvi, 1999; Sheikh, 2010). People's customs and practices have been influenced by Bon (animistic religion), Buddhism and later, Islam. At present, people practice either Mahayana Buddhism or Twelver Shi'i Islam (Gupta, 2012; Bhatia et al., 2017). Most Ladakhis (Buddhists and Muslims) believe in the presence of protective deities (*lhas* and *klus*) at the level of the family, the village, and the mountains (Dollfus, 1997; Butcher, 2013). There is a widespread belief in shamanism in which deities are believed to communicate through designated oracles (female oracles are known as *lha-mo* and males as *lha-pa*, translated as "divine persons") (Kressing, 2003). People occasionally consult astrologers (*onpo*) for advice and predictions, or to appease the deities. Buddhist communities

seek the advice of monks as well as Tibetan medical practitioners (*amchis*) for their emotional and physical well-being. As in neighboring high-altitude landscapes, Ladakhis, too, engage in agriculture and livestock rearing for subsistence. Some of the socio-political drivers of change in this landscape include a period of colonialism, the presence of the Indian army post-independence, and increasing levels of domestic and international tourism in recent years (Bray, 2007).

Data Collection

We collected folklore around wildlife using a combination of online and library searches, and field-based interviews. Targeted online literature searches were conducted using the Pahar database (www.pahar.in, accessed on December 16, 2018), and publications uploaded by journals like International Association of Ladakh Studies (www.ladakhstudies.org/ladakh-studies-journal accessed on April 01, 2016), and Himalaya (www.himalayajournal.org, accessed on April 01, 2016), with a focus on articles on Ladakh and/or Jammu & Kashmir. The keywords broadly included terms like “Ladakh,” “Jammu & Kashmir,” “Wildlife,” “Folk,” “Culture.”

Simultaneously, book searches were conducted in 3 libraries—one in New Delhi (Tibet House) and two in Ladakh (District library and Central Institute of Buddhist Studies) (March to May 2016). These included books written in English by colonial travelers, explorers, hunters, missionaries, religious leaders, cultural researchers, and Tibetan medical practitioners—all in the context of the high Himalaya, especially Ladakh. The written archives dated from as far back as 1844 to 2013. The literature search was intentionally unstructured so that we could document as many stories as possible.

With relevant ethics (including BREB) clearance from the host institution, we then identified and interacted with 13 historians, researchers and practitioners working locally in the field of cultural preservation to identify general themes, relevant literature, and knowledgeable individuals who we could interview. We formulated a series of questions to guide our interviews with these individuals (**Supplementary Material S1**). Two of us (SB and SN) traveled to parts of central, western, and eastern Ladakh and using snowball sampling or chain sampling (Naderifar et al., 2017), interviewed a total of 90 elderly individuals (approx. age >60 years), including folk artists, herders, Tibetan medical practitioners, astrologers, and monks. The interviews were carried out from May to September 2016. We ensured that free, prior informed consent was obtained at the beginning of the interviews. We conducted the interviews in Hindi or Ladakhi (with assistance from an interpreter), depending on the preference of the individual.

Even though we welcomed stories around all animals, we found a reasonable sample of folklore/narratives around four species, namely the ibex, the wolf, the snow leopard, and the snow lion. We recorded stories that discussed their role in traditional medicine and rituals, as well as popular beliefs, sayings, anecdotes, and legends surrounding them (please see **Supplementary Material S1** for the list of themes that were

covered). We expected to find more negative values associated with carnivores as compared to their prey.

The interviews were transcribed into English by professionals hired for the purpose. Due to personnel issues, we could only transcribe 48 of the 90 interviews (41 men and 7 women) that were included in the present study.

Data Analysis

In all, we shortlisted 16 oral and 53 written narratives for the ibex, 29 oral and 23 written narratives for the wolf, 23 oral and 20 written narratives for the snow leopard, and 5 oral and 14 written narratives for the snow lion.

Using these narratives, we identified the predominant value(s) ascribed to the three wild species and the mythical snow lion with the help of a pre-defined typology adapted from Kellert (1985). Kellert's typology has been tested extensively in the context of North America and Europe. However, the scale can be considered universal in that the fundamental value structure is unlikely to change significantly between regions (Kellert, 1995). Our value typology touched upon ecological, socio-cultural as well as psychological dimensions enshrined in the text as well as the interviews (**Table 1**). We first split the values into sub-categories and then combined similar sub-categories to reflect the predominant value (Krippendorff, 2004). We created frequency distribution of each to understand what values were most referenced for each animal. We carried out our analysis in R version 3.5.0.

RESULTS

Ibex

The predominant value ascribed to the ibex was utilitarian (50.7%). A large part of the narratives were about its utility as a game animal (**Figure 1**). Other utilitarian values associated with the ibex were those that described their role in rituals, for example, ibex horns were offered to deities to appease them (**Figure 2**); their role in trade and domestic use, for example, the undercoat (known as *asali tus*) was a valuable trade item (**Figure 2**); and their role in sustenance, for example, ibex meat was consumed in the winters when there was a scarcity of food. Images of ibex hunt were common in prehistoric petroglyphs found locally (**Figure 2**). Some examples of folklore highlighting utilitarian values are presented below.

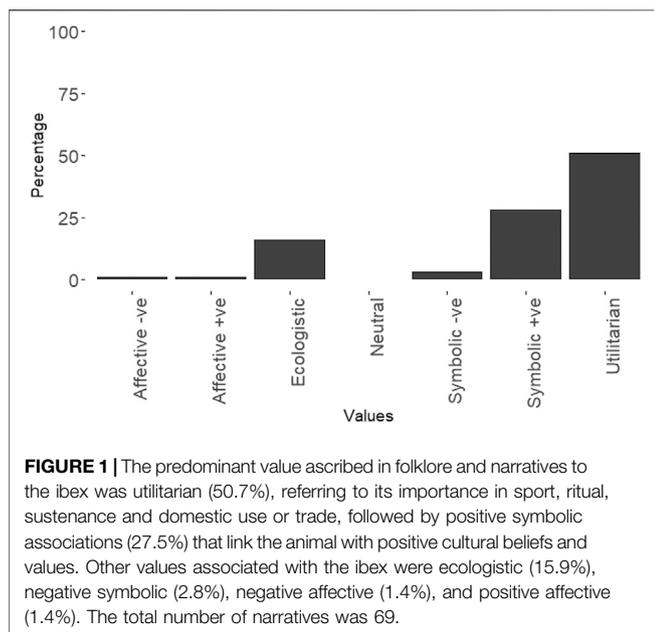
A popular wedding folksong made references to ibex hunting:

“When an arrow flew to high heaven,
it brought back the wings of the bird-king.
When the arrow flew to the high cliff,
it brought down the muscles of the ibex.”
–Ribbach (1986, p.88)

Similarly, another folk song described the process of ibex hunting in the following manner:

TABLE 1 | Affective values focus on emotions while symbolic values focus on religious, spiritual or cultural beliefs; ecologicistic values refer to ecological observations and utilitarian values focus on the use-value of the animal (adapted from Kellert, 1985).

Predominant value	Value subcategory	Description
Affective +ve	Empathetic	Focus on empathy/love/pity for the animal
	Esthetic	Focus on aspects of the animal that bring pleasure to society/human (e.g. curiosity, beauty, wonder)
Ecologicistic	Ecologicistic	Focus on numbers, populations and/or the ecological role of the animal
Neutral	Neutral	Does not ascribe any value to the animal
Symbolic +ve	Symbolic—positive cultural beliefs	Focus on positive religious, spiritual, or cultural beliefs about the animal
	Symbolic—positive social values	Association of the animal with positive religious/social values such as kindness, compassion, fearlessness, courage, etc
Symbolic -ve	Symbolic—negative cultural beliefs	Negative religious, spiritual, or cultural beliefs about the animal
	Symbolic—negative social values	Association of the animal with negative religious/social values such as greed, ignorance, anger, etc
Utilitarian	Utilitarian—sustenance	Focus on the use of the animal for food
	Utilitarian—trade and domestic purposes	Focus on the use of the animal for trade or domestic use
	Utilitarian—sport	Focus on the use of the animal for sport
	Utilitarian—medicine	Focus on the use of the animal in medicine
	Utilitarian—ritual	Focus on the use of the animal in rituals
Affective -ve	Affective negative	Focus on aspects of the animal that bring displeasure to society or on retaliatory killing (e.g. fear, economic loss, nuisance value)



“Take the arrows then the bow,
 The arrow-shafts and the heads
 O boy that art clever at hiding!
 O boy that art clever at climbing;
 O boy, clever at getting out of sight,
 An ibex can be seen,
 Ibex can be seen in a herd!
 Now take the arrow, O boy!
 Then take the arrow-shafts and heads,
 O boy that art clever at driving them together;

O boy that art clever at driving them heaps;
 Thou that art clever at singling out the best; Thou that
 art clever at shooting them!”

–Francke (1907, p. 37)

Hunting songs often described the fate of the ibex:

“Seven men had a discussion with each other, Hundred
 men assembled to go hunting,
 Prepare the jaggery,
 Prepare the barley flour and butter
 Prepare the tip of the arrow, Prepare the bow made of
 sandal wood,
 Prepare the sapphire-like dog,
 Then send the men to the mountains,
 Dispatch one group to the peak of the mountain,
 Dispatch the other two on either side,
 Then let loose the hunting dog
 Drop a rock from the peak.
 Then stealthily follow the ibex
 The ibex was killed.
 The hunters praised the gods,
 Now you men descend from the mountains,
 Then the flesh was cut with the knife.
 Then the meat was roasted,
 The roasted meat was distributed,
 All the men received an equal share.”

–Phuntsog (2000, p. 225)

Apart from utilitarian values, narratives also associated the
 ibex with positive symbolism (27.5%). For example, the ibex,



FIGURE 2 | Clockwise from top left: Image of a *lhato*—a structure dedicated to local protective deities consisting of ibex, *asali tus* or ibex undercoat, petroglyphs depicting the ibex and people, ibex figurines made of dough prepared as an offering to the deity during Losar (New Year) and at the time of birth of a male child.

known for its nimbleness, was a mascot of the Ladakh Scouts infantry regiment of the Indian army. Ibex figurines made of dough were displayed during Losar (new year) and at the time of the birth of a child, especially a male child (Figure 2).

Positive symbolism vis-à-vis the ibex can be seen in the following song where the ibex is considered “pure” and therefore, the livestock (sometimes also referred to as a “horse”) of the protective deities:

“In my father’s place of (hunting) the ibex
There gather hundreds and thousands of large ibex
If the lhas and klus do not enjoy (this spectacle) who
would enjoy it?
If the deities do not enjoy it, who would enjoy it?”
—Francke et al., (1899, p. 36)

Other values associated with the ibex were ecologicistic, which focused on ecological and behavioral observations (15.9%), negative symbolic like negative cultural beliefs or stereotypes (2.8%), negative affective, that is, negative emotions like fear, dislike or desire to harm (1.4%), and positive affective, that is, positive emotions like compassion, love or empathy (1.4%).

Wolf

Narratives about the wolf frequently focused on the negative affective (34.6%), negative symbolic values (23%). These were followed by ecologicistic (19.2%), utilitarian (7.6%), positive symbolic (5.7%), neutral (5.7%) and positive affective values (3.8%) (Figure 3).

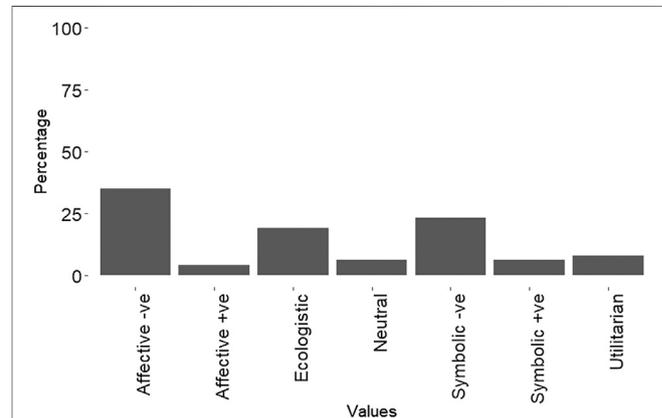


FIGURE 3 | The predominant values associated with the wolf were negative affective (34.6%), referring to emotions like fear, hatred, aversion or to retaliation, and negative symbolism (23%), associating the animal with negative cultural beliefs and values. These were followed by ecologicistic (19.2%), utilitarian (7.6%), positive symbolic (5.7%), neutral (5.7%) and positive affective values (3.8%). The total number of narratives was 52.

Wolf was referred to as *chanzan* meaning a predator causing “menace.” Interviewees described many ways to trap and kill the wolf including snare and bait traps (Figure 4). Until recently, wolves that were killed would be paraded in the village by the hunters for a reward. If there was persistent depredation by wolves on livestock, communities would set out to locate wolf dens and pups and either set them on fire or seal the den or both.

Fear, aversion and hatred for wolves was evident in many narratives. A saying used to describe the transitory nature of



FIGURE 4 | A bait trap used for killing wolves. A goat or a sheep would be tied inside a deep pit surrounded by the circular wall seen above, which would attract the wolf. The wolf can jump in and access the bait but is unable to jump out due to the concave walls of the trap.

happiness invoked the relationship between the lamb and the wolf, where wolf was equated to trouble (Francke et al., 1899, p.111):

“Thinking, it will become happy and fat,
They sent the lamb to the meadow.
The thought, that the wolf would come.
That thought did not enter their minds.”

The lyrics of a song about aging and the virtue of humility contained the following stanza:

“On top of the mountains there is an arrogant wolf, But
when it gets old it won’t be able to kill a lamb.”

Similarly, greed was another quality associated with the wolf evident in the proverb: “The wolf’s mouth is bloody through much eating” (Hamid, n.d., p.89) An interviewee narrated a long story of how a fox who was upset with the death of his friend, an ox, at the hands of a wolf, decided to seek revenge in the most gruesome. His means involved gluing the wolf’s eyes shut, locking it up in a box, sticking its tail into ice, loading its back with sacks of hay and a mattress, riding the wolf and finally, informing the villagers of its presence so they would kill it.

Another story in which goats sought revenge from a wolf was narrated to us:

“A wolf encountered the first goat and asked her, “What is on top of your head?” The goat answered, “These are my horns.” The wolf asked, “What is it that covers your

body?” The goat said, “My wool.” Then the wolf asked, “What is it on your feet?” The goat replied, “My hooves.” Unsatisfied with the answers, the wolf killed the goat and ate her up. He then proceeded to the second goat, who gave similar replies and met the same fate. Finally, he faced the last goat, who was also the youngest. Ready to pounce, he asked the goat, “What is on top of your head?” “A knife to kill you,” she said. “What covers your body?” enquired the wolf. “It is a rope to tie you,” retorted the goat. The wolf, a bit suspicious now, proceeded to ask another question, “What covers your feet?” “My hooves to kick you,” replied the goat, and with this, she pierced her horns through the wolf, bound him with her wool, and knocked him dead with her hooves.”

We were informed that bad spirits (*rolang*) could manifest themselves as wolves, as could angry deities who had the ability to destroy their livestock. There was also a belief that a wolf howling while a body was being cremated was bad omen. A wolf walking in front of an individual on the road was also considered bad omen as was dreaming about the wolf. Calling someone a wolf usually amounted to a taunt and indicated that the person was cunning or untrustworthy. A popular saying demonstrating the wolf’s slyness was, “When the wolf falls into the pit, he is obliged to say “please sir” [or “dear sister”] to the goat [to escape].” Similarly, another saying about a wolf’s apparent untrustworthiness was explained to us, “Despite all the efforts to domesticate a wolf, you cannot make it a home-guarding dog.”

Though rare, we found some evidence of positive symbolism in the context of the wolf. For example, there were beliefs like “If

one encounters a wolf then it is considered auspicious,” “Killing of wolves invites bad luck as they are protective deities.” Further, there were communities whose family names were based on the place they originated from, their occupation and sometimes, the relationship they had with predators. For example, it is possible that the family name *Shan-pa* refers to an individual/family who is believed to have descended from snow leopards whereas *Shanku-pa* could indicate a wolf lineage. This possibility, however, was not confirmed by the interviewees.

Snow Leopard

The predominant values ascribed to the snow leopard were utilitarian (28.5%) (Figure 5). Among the utilitarian narratives, most stories were about the domestic use or trade of its body parts, followed by stories about trophy hunting, and their use in traditional medicine and rituals.

An interviewee explained that their fur was traditionally used to make shoes, bags, as well as line the jackets for warmth. Our interviewees told us that snow leopard organs and bones were used in traditional medicine while its skin was used in certain rituals. Stuffed snow leopards or their skins were kept in monasteries as an offering to the deities and in some cases, to enhance their power. Snow leopard fur was also traded locally, nationally and internationally. For instance, (Doughty, 1901, p. 226), wrote:

“Leopards are scarce in the valley, the snow leopard (ounce) almost unknown . . . Somewhere beyond the limits of Kashmir their skin is very handsome and makes a beautiful trophy.”

Utilitarian values were closely followed by ecologicistic values (23.8%), which focused largely on observations about its behavior and ecology. For example, the snow leopard was referred to by different names such as *jatpo* (one who stalks), *salapo* (one who eats grass—not uncommon among felines), *shengan* (used to refer

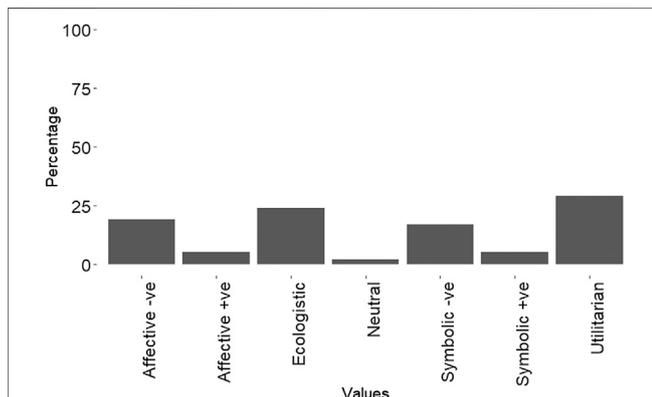


FIGURE 5 | The predominant values ascribed to the snow leopard were utilitarian (28.5%), referring to its importance in domestic use or trade, sport, medicine and ritual, and ecologicistic (23.8%), referring to observations about its behavior and ecology, followed by negative affective (19%), negative symbolic (16.6%), positive affective (4.7%), positive symbolic (4.7%) and neutral values (2.3%). The total number of narratives was 43.

to old individuals), and *nama perka* (animal with a stick-like tail). Interviewees also believed that it was addicted to the blood of its prey and got a high after killing it and consuming the blood.

Some of the narratives comprised negative affective (19%), negative symbolic (16.6%), positive affective (4.7%), positive symbolic (4.7%) and neutral values (2.3%). An example of positive symbolism was contained in statements like, “Killing a snow leopard is a sin. Even if you light butter lamps [for atonement] equivalent to the number of hairs on its body, you won’t be able to overcome the bad *karma*.”

A popular local legend described an encounter of a meditator with the snow leopard as follows:

“Once a yogi was meditating in a cave for several years. At the end of his meditation the deity he was praying to manifested itself in the form of a snow leopard. He fed the animal as an act of kindness not knowing that he was, in fact, offering food to the deity. The next day, the snow leopard rewarded his kindness by leaving a freshly killed ungulate at the entrance of his cave.”

Snow Lion

The mythical snow lion was predominantly associated with positive symbolic values (84.2%) (Figure 6). Most of these narratives discussed how the snow lion represented desirable cultural values such as fearlessness, pride, strength, etc. Positive symbolism was followed by ecologicistic (10.5%) and positive affective values (5.2%).

A prominent Buddhist leader told us that the snow lion was the undisputed king of the animal world. He explained that people would often liken strong, famous or courageous men to the snow lion. The snow lion is believed to confer good fortune on the country of its residence (Aggarwal, 2004). Referring to the good fortune one of our interviewees said, “Where there is snow lion thunder [that is, calamity] cannot occur.”

References to the snow lion were common in folk songs:

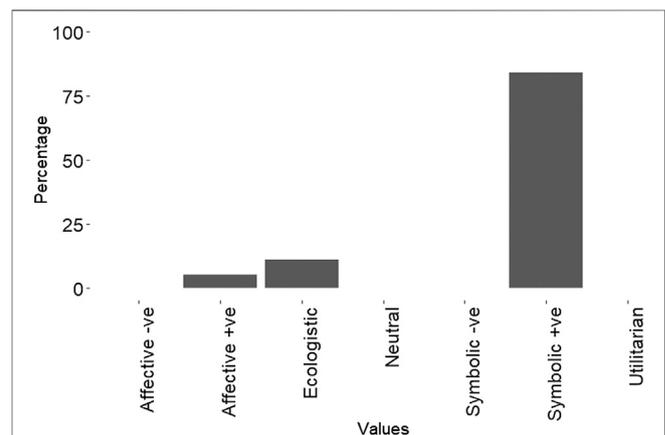


FIGURE 6 | The mythical snow lion was predominantly linked to positive symbolism (84.2%), which associated the animal with positive cultural beliefs and values, followed by ecologicistic (10.5%) and positive affective values (5.2%). The total number of narratives was 19.

“See how many good dreams there now are.
 See how many good dreams of good days there now are.
 See boy, yon beloved snow mountain.
 See upon that snow mountain a great lion proudly
 posing.”
 –Dinnerstein (2013, p. 212)

In another one:

“In the dark blue sky
 There are thousands of stars
 In the dark blue sky
 There are thousands of stars.
 ‘When Venus rises
 I am happy
 When Venus rises
 Silver breaks over the palace
 ‘On the high mountain ice
 There are thousands of lions
 When the Sun, the Father of the lions rises
 Gold breaks over the palace.”
 –Harvey (1983, p.101)

DISCUSSION

Examining folklore to understand the diversity of values associated with wildlife can enable conservation practitioners to identify areas where societal or individual motivations are complementary to biodiversity conservation, and the areas where motivations contrast with the goals of conservation. Such knowledge can be useful in designing culturally meaningful strategies to facilitate human-wildlife coexistence.

With this aim, we sought to explore Ladakhi folklore to understand the values that were ascribed to three high altitude mammals, the ibex and its predators, the wolf and the snow leopard. We found that the values associated with all the wild animals were complex, contradictory and diverse as has been reported in Mapuche and Chilean narratives around the puma and the kodkod cat (Herrmann et al., 2013). One of the cross-cutting themes was the association of all four animals (including the mythical snow lion) with protective deities, indicating varying levels of sacredness. The second prominent theme was the tangible and intangible benefits that some of the animals offered to humans. For example, in the case of the ibex, even though people traditionally hunted them for sport (like most ungulates), their utility was not limited to trophies alone but also linked to several economic and cultural dimensions (Nordbo et al., 2018).

We had expected that narratives about carnivores would most frequently be associated with negativism owing to their preying on livestock. We found that the wolf was, indeed, frequently associated with negative values as has been reported elsewhere in

Europe and North America (Kellert, 1985; Skogen and Krange, 2003). Attitudes and behaviors toward wolves are also negative in other parts of the world, which have been attributed to negative stereotyping in folk legends and myths (Kellert, 1985; Suryawanshi et al., 2013; Sponarski et al., 2014; Suryawanshi et al., 2014; Ali et al., 2016; Treves et al., 2017; Vucetich et al., 2017). Negative responses toward the wolf can partly be explained by their ecology and behavior (Kellert et al., 1996). Wolves hunt in packs and communicate by howling which can cause people to be afraid as opposed to the mostly silent and solitary snow leopard. Nonetheless, although infrequent, the values associated with the wolf were not limited to a single (negative) dimension but also reflected some positive values, especially its associations with the deities. Similar results have been reported for wolves in Mongolia (LeGrys, 2009).

Narratives about the snow leopard also ranged from reflecting its negative impacts on people to its utility to them. Its local names reflected knowledge of natural history. For example, in relation to body size, the snow leopard has one of the longest tails among the Felidae Family, with the head to body length of an adult ranging from 1 to 1.3 m and tail length of about 0.8–1 m, that is 75–90% of the head to body size (Hemmer, 1972), presumably explaining one of its local names *nama perka* (animal with a stick-like tail). Despite the diversity of values, however, any potentially positive symbolic associations with the two carnivores appeared to be overshadowed by negative sentiments because of their tendency to prey on livestock, unlike in the case of the snow lion. The snow leopard seemed to have resemblance to the imaginary snow lion, because of the similarity in their appearance (bushy tail, camouflaged coat) and behavior (carnivorous, surviving in the snow). However, in the absence of the negative impacts or sentiments that are typically associated with the snow leopard, the snow lion appeared to be a greatly revered carnivore associated with high levels of positive symbolism.

Our findings have potential consequences for conservation. A value-based approach can enable conservation interventions to be more culturally sensitive. The positive narratives about wildlife can provide a starting point to enhance conservation messaging and outreach, while the negative ones can be used to initiate a dialogue with local communities. For instance, the lion guardian model in Maasai Mara encourages young Maasai men who traditionally engaged in lion hunting (now outlawed) to protect the lions instead of killing them (Dickman et al., 2015; Hazzah et al., 2017). This has enabled local people to take ownership of wildlife whilst being mindful of alternative conservation values and the legal implications of hunting.

Fernández-Llamazares and Cabeza (2017) similarly highlighted many examples of how local cultural values have been incorporated into conservation. One of their examples discussed how a local visitor center in Pilón Lajas Biosphere Reserve and Indigenous Territory (Bolivia) co-produced an exhibition along with local communities to introduce visitors to the traditional myths of the Tsimané Indigenous Peoples living in the Reserve. Another example described how a 10-part radio series titled “Echoes of the Forest” interwove scientific and cultural aspects of lemur conservation around Ranomafana

National Park (Madagascar). Yet another example referred to a project involved young local Daasanach in and around Sibilo National Park (Kenya) who were encouraged to document traditional knowledge about wildlife from their elders.

The tradition and the significance of oral storytelling is eroding rapidly in Ladakh and across the high Himalaya (Norberg-Hodge, 1991; Claus et al., 2010; Dinnerstein, 2013). By employing storytelling as a tool, conservation practitioners can assist in restoring this tradition, whilst enhancing human-wildlife coexistence. The findings of this study can be further refined by accounting for demographic differences as well as longitudinal comparisons.

In his classic essay, White (1967) remarked, “What people do about their ecology depends on what they think about themselves in relation to things around them.” (p. 1,205). People’s relationship with nature is an integral part of their identity and experience (Chan et al., 2016). It is, therefore, important to find a common ground between cultural and natural heritage conservation. This can enable us to design interventions that communities believe in and can contribute to, which can also benefit wild animals in the long run.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics Board at the Nature Conservation Foundation. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

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AUTHOR CONTRIBUTIONS

SB and CM conceived the ideas and designed the methodology; SB and SN collected the data; SB analysed the data and led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fenvs.2021.595169/full#supplementary-material>.

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