



“I am Wolf, I Rule!” - Attributing Intentions to Animals in Human-Wildlife Interactions

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Human interactions with potentially problematic wildlife spawn intense and polarized sentiments. This study investigates one contributing factor: People perceive wildlife as having intentions toward them, and consequently, they feel targeted by the animals' behavior. Thematic analysis of semi-structured interviews with 20 German-speaking participants on three model wildlife – wolves, corvids, and spiders – yielded 12 different kinds of intentions attributed to the animals. The form of these intentions can be analyzed in terms of whether the attribution has a metaphoric or literal meaning; whether it is potentially correct, and whether it occurs at an individual or species level. In terms of these criteria, attributions made to wolves, corvids, and spiders take different forms, that appear to correspond to differential degrees of direct experience with the respective animals. For example, attributions to wolves tend to be made at a species-level, and thus are of a rather abstract quality, corresponding to the rather elusive nature of wolf presence. Simultaneously, attributions to the three model wildlife exhibit thematic similarities: With regard to their content, the 12 kinds of intentions can be integrated into four motives referring to the animals' alleged deeper incentives: *rebellion*, *menace*, *relationality*, and *unintentionality*. These motives are ascribed to wolves, corvids and spiders in comparable ways, evidencing similarities in participants' mental representations of ecologically dissimilar cases of human-wildlife interactions. The discussion of the qualitative findings traces how the species-specific and the overarching dynamics, as well as people's biographies factor into their views of animal intentionality in a way that causes ascriptions to be polarized across people, yet similar across wildlife. Evidently, the inclination to feel personally targeted by animal agents' intentional behavior is a universal feature in human-wildlife conflicts, that is co-determined by wildlife ecology and human psychology.

Keywords: human dimensions, human-wildlife coexistence, wolves, corvids, spiders, intentionality, anthropomorphism, Anthrozoology

INTRODUCTION

The wolf wins – sheep breeders give in
(20 minuten, Swiss daily, July 29, 2014).

Parcel constantly over-flooded: Terror-beaver ravages Anton's property
(BILD, German daily, January 10, 2022).

In return for food: Crows bring thank-you gifts for eight-year-old girl
(Welt, German daily, March 10, 201).

Headlines like these abound in the discussion about human-wildlife interactions such as the recovery of wolf and beaver populations, or human cohabitation with hemerophiles. It seems that wherever humans coexist with wild animals, similarly intense and polarizing sentiments are being spurred regardless of the particular intricacies (Egli et al., 2001; Canby, 2005; Owen-Smith et al., 2006; Knight, 2008; Lescureux and Linnell, 2010; Gibeau, 2012; Echeverri et al., 2018; Mondini and Hunziker, 2018; Bhatia et al., 2021; Breyne et al., 2021). People's similar reactions to dissimilar wildlife indicate a human disposition to mentally represent ecologically disparate animals in similar ways (Jürgens and Hackett, 2021).

The catchy newspaper headlines suggest that wild animals appear to be represented as personally targeting humans with their behavior. Such conceptions are part not only of media coverage, but also of the public discourse on human-wildlife interactions (e.g. Bell, 2015; Jürgens and Hackett, 2017). Yet, are these mere figures of speech by which journalists, politicians, and stakeholders seek to underscore their points – or does attributing human-focused intentions to wildlife play a part in people's representations of and, hence, their responses to human-wildlife interactions? The present paper is dedicated to answering this question.

THEORETICAL BACKGROUND

What We Know About Animals Having Intentions

Research on human-wildlife interactions has traditionally not focused on wild animals as intentional agents. "Intentionality", in psychology, denotes the state that a being pursues a goal (APA Dictionary of Psychology). Accordingly in this article, the term "intention" denotes the mental state directing an agent's behavior. The term "motive" refers to the broader motivational background in which individual intentions and actions are embedded (Ryan and Deci, 2000). While classifying animal behavior as intentional is conceptually intricate (Heyes and Dickinson, 1990), in both the natural and social sciences, animals' intentional agency is increasingly being substantiated (De Waal, 1996; Bekoff, 2007; Lestel, 2011; Belgrad and Griffen, 2016; Brakel, 2016). Since von Uexküll's (1909) work has suggested how even allegedly simple organisms entertain their respective forms of intentions when acting upon their umwelten, it is now widely accepted that minds

of animals as different as chimpanzees (Call and Tomasello, 2008), crows (Emery, 2004), wild boars (Masilkova et al., 2021), and even fish (Brown, 2015) and insects (Prete, 2004) are richly populated by intentions and motives: by emotions responding to given states, by thoughts about these states, by desires for certain further states, by orientations toward attaining these states, and by behavioral attempts to realize them. The degree to which animals are conscious of their intentional states is hardly possible to establish empirically (Shettleworth, 2001, 2009), yet precursors of human forms of consciousness and sense of self arguably are present in all animals (Fogassi et al., 2005; De Waal and Ferrari, 2010; Low, 2012; Gupta and Sinha, 2014; Reber, 2016; Rowlands, 2016). Concurrently, fields of study have emerged that are specifically devoted to elucidating animal agency. For example, Human-Animal Studies, or Anthrozoology (Mills, 2010; Siddiq and Habib, 2016) investigates relations of human and animal agents in all areas of life; and political ecology and political geography (McCarthy, 2002; Nygren and Rikoon, 2008; Poerting and Marquardt, 2019) i.a. approach human-wildlife interactions under the premise that animals ought to be conceived as "actors, rather [than] objects only to be acted upon" (Margulies and Karanth, 2018; p.3) who co-create human-wildlife encounters (Lescureux and Linnell, 2010; Nair et al., 2021). Accordingly, wild animals have their respective ways of representing human-wildlife interactions and imply their human counterpart in their intentional agency (Lestel, 2011; Jürgens, 2017).

Conceptions of Non-human Intentionality in the Context of Human-Wildlife Interactions

Attributing intentionality to animals is a particular aspect of the general process of mind perception in non-human beings (Waytz et al., 2010). Our way of representing animal minds is based on the same cognitive, perceptual and neurobiological mechanisms by which we represent our fellow humans' minds (Urquiza-Haas and Kotschal, 2015; Sevillano and Fiske, 2019), notably on the largely automatic functioning of the "theory of mind" module (Epley et al., 2007). This means that we are prone to interpret animals' behavior in human terms. This may indeed yield correct interpretations in cases where humans' and animals' mental lives exhibit homologous or analogous functioning (De Waal, 1999; Emery and Clayton, 2004; Epley et al., 2008), but in other cases, judging animals' behavior from a homocentric place leads to misconstruing their intentions. According to De Waal (1999), humans' misconceptions of animals' mental states may range between the extremes of anthropocentric anthropomorphism, i.e. a "naive" attribution of "human feelings and thoughts to animals" (ibid., p.260), and "anthropodenial": "the apriori rejection of shared characteristics between humans and animals when in fact they may exist" (ibid., p.258).

People's penchants for anthropomorphizing differ, based on their specific knowledge of animals, their life histories, their personalities, and on situation-specific aspects (Epley et al., 2007). Additionally, the more unpredictably animals behave, the more readily they are perceived as exhibiting intentional agency (cf. Johnson and Barrett, 2003; Gray et al., 2007).

In human-wildlife encounters, wild animals typically appear to evade human control, and thereby are likely to attract attributions of intentionality. For example, in the wake of resurging wolf populations, introducing measures for preventing or compensating attacks on livestock are meant – but fail – to provide a complete alleviation of risk (Lute et al., 2018; Bautista et al., 2019). In such a setting largely ruled by affect (Glikman et al., 2012; Slagle et al., 2012), attributing intentions to wolves can “fulfill a basic need for understanding, control, and predictability” “by providing a sense of understanding and control of a nonhuman agent” (Epley et al., 2008, p. 149). Yet, while perceiving wild animals as holding intentions toward humans may alleviate ambiguity for an individual person conceiving of human-wildlife relations, such a conception may fuel human-wildlife conflicts and their politicization on the societal level. Human-animal interactions already are polarized due to different economic and political interests (Nie, 2001; Adams, 2015; Carlson et al., 2020; Pates and Leser, 2021), diverging beliefs about and affective responses to wildlife (Treves and Karanth, 2003; Flykt et al., 2013; Jacobs et al., 2014; Behr et al., 2017; Stauder et al., 2020), and opposing value orientations with regard to nature more broadly (Bjerke and Kaltenborn, 1999; Bauer et al., 2008; Marvin, 2010; Teel and Manfredo, 2010; Dietsch et al., 2017; Breyne et al., 2021). Existing lines of conflict are likely to be reflected in stakeholders’ conceptions of wild animals’ alleged intentions (Bell, 2015; Jürgens and Hackett, 2021).

Therefore, the role of attributing intentionality to wildlife may be a relevant factor to consider within the complex geography of human dimensions. If construing wild animals as holding intentions toward humans is an impactful dynamic, then interpretation patterns based on such ascriptions are expected not only to make media catchlines, but to consistently surface in people’s habitual way of speaking about human-wildlife interactions (Oevermann, 2001). The present study investigates this hypothesis by exploring the presence, as well as the form and content of the attributions being made to wild animals.

MATERIALS AND METHODS

As the attribution of intentionality to animals within the scope of human-wildlife interactions is a phenomenon that remains to be explored with regard to its prevalence and nature, a qualitative approach is uniquely apt for this purpose.

For a larger project investigating overarching dynamics in human dimensions of wildlife (Jürgens and Hackett, 2021), I conducted in depth interviews (Lamnek, 2006) on participants’ relations to one of three model animals: wolves, corvids, and spiders. I have chosen these cases based on the premises that (i) a comparative investigation of human relations to ecologically vastly dissimilar animals can tease out factors that are relevant to human-wildlife relations more generally (cf. Patton, 2002); and that (ii) people’s reactions to these particular animals are ideal venues for research since they exhibit the qualities of being polarized and laden with affect, which I take to be typical of potentially conflictual human-wildlife encounters. For a detailed

account of human relations to wolves, corvids, and spiders, see Jürgens and Hackett (2021). For this study, I reanalyzed the extant transcripts through the lens of the specific hypothesis that attributing intentions to animals may contribute to shaping human-wildlife interactions.

Sampling

I interviewed 20 participants purposefully sampled by a scheme of maximum variation sampling (Lamnek, 2006) suited to investigating the “shared dimensions” of a phenomenon – like human-wildlife relations – exhibiting “a great deal of variation” (Patton, 2002, p. 235). The two criteria for which a maximum of variation was sought were the valence of attitude (positive vs. negative, as assessed in a short recruiting conversation via phone or email), and subjects’ formal relation to the respective animals, (operationalized by their profession or vocation, e.g. scientist, shepherd, hunter, or environmentalist). As a consequence of choosing these criteria, the sub-samples for interviews on wolves, corvids, and spiders, respectively, differ widely with regard to other variables. For example, sociodemographic variables do not distribute evenly over sub-samples, since, e.g., interviewing hunters (predominantly elderly males) is of particular importance for the case of wolves, while interviewing spider phobics (predominantly young and female) is informative for the case of human-spider relations. Appendix 1 provides demographic details of the participants. Subjects were recruited by means of the snowball technique (Patton, 2002). Also, I selected critical cases by contacting users having posted expressive commentaries in online news feeds on human-wildlife interactions. Based on the pragmatic criterion for theoretical saturation proffered by Low (2019), the recruiting of further participants was discontinued as a saturation set in with regard to the concepts deemed relevant in the framework project (Jürgens and Hackett, 2021). Theoretical saturation notably was reached within and across sub-samples interviewed on the three model wildlife despite heterogeneity of those groups. I took this as an indication that this heterogeneity did not introduce any significant bias with regard to the research questions. Seven participants were interviewed on wolves, 6 on corvids, and 7 on spiders. German is the primary language of communication for all subjects, 19 of them German citizens, one of Swiss nationality. For this article, participants’ quotes were translated from German as literally as possible. In this article, interviewees are referred to by a code indicating the focus species in the interview (“W”, “C”, or “S”), and the order of that interview in the series (e.g. “C6” being the sixth participant interviewed on corvids).

Interview Procedure

Participants were interviewed in person between June of 2016 and October of 2020. Interviews lasted between one and three h and were video-taped. After gathering informed consent, the conversation started by participants recounting a memorable encounter they might have had with the respective animal. The interview then was semi-structured by a set of 15 open-ended questions (see **Appendix 2**) whose themes were all discussed in the interview, but their order and phrasing was adapted to the flow of the conversation. Verbal questions were complemented

by a projective technique: I asked interviewees to express their thoughts also by building configurations of little wooden figures. Projective approaches serve to gain additional insights by tapping below subjects' conscious filter, and by initiating deeper conversation based on striking aspects of those configurations (Hackett et al., 2016). Participants were free not to use the figures. Fifteen subjects did use them, and 5 chose not to use them. The total of 80 items consisted of three figures representing the model animals, other wildlife, domestic animals, people, cars, fences, trees, as well as buildings, and undefined elements. The set of questions and projective prompts was the same for interviews on all three model animals.

Analysis

In this study, I pursued a four-step process of thematic analysis (Clarke and Braun, 2017) within the framework of a grounded theory paradigm (Mey and Mruck, 2011). **Figure 1** gives an overview of these steps and the results they yielded. In the first step, I went through all participants' transcripts in search of statements that attribute intentionality to animals. Statements were coded as attributions of intentionality and included into further steps of analysis if (i) participants spontaneously made these statements, i.e. they did not refer to or echo the interviewer's phrases; and (ii) participants plainly talk about

animals' presumed perspective or intentions, i.e. no interpretative effort was required to evidence the attribution of intentionality.

In a second step of analysis, I collected all statements that were clearly identical in meaning and gave them a common heading. These themes will be referred to by the term "intentions" in this article.

In a third step, I classified these intentions based on three criteria describing the forms of the intentions attributed to animals: concreteness, accuracy, and whether the attribution was made to animals on an individual or species level.

Concreteness

Ascriptions to animals have been found to differ in their level of concreteness (Slagle et al., 2019). Following Epley et al.'s (2007, p. 876), distinction of "strong" and "weak" anthropomorphizations, I operationalized concreteness by whether intentions were stated in a literal or metaphoric manner. A statement was coded as a "literal" one if participants framed intentions in terms of the animals' actual perspective, e.g., "Wolves have no interest whatsoever to see or be seen by humans" (W1), or if the statement occurred within the framework of factual explanations of concrete situations. Conversely, I coded statements as being "metaphoric" when participants explicitly talked in an "as if" manner about an

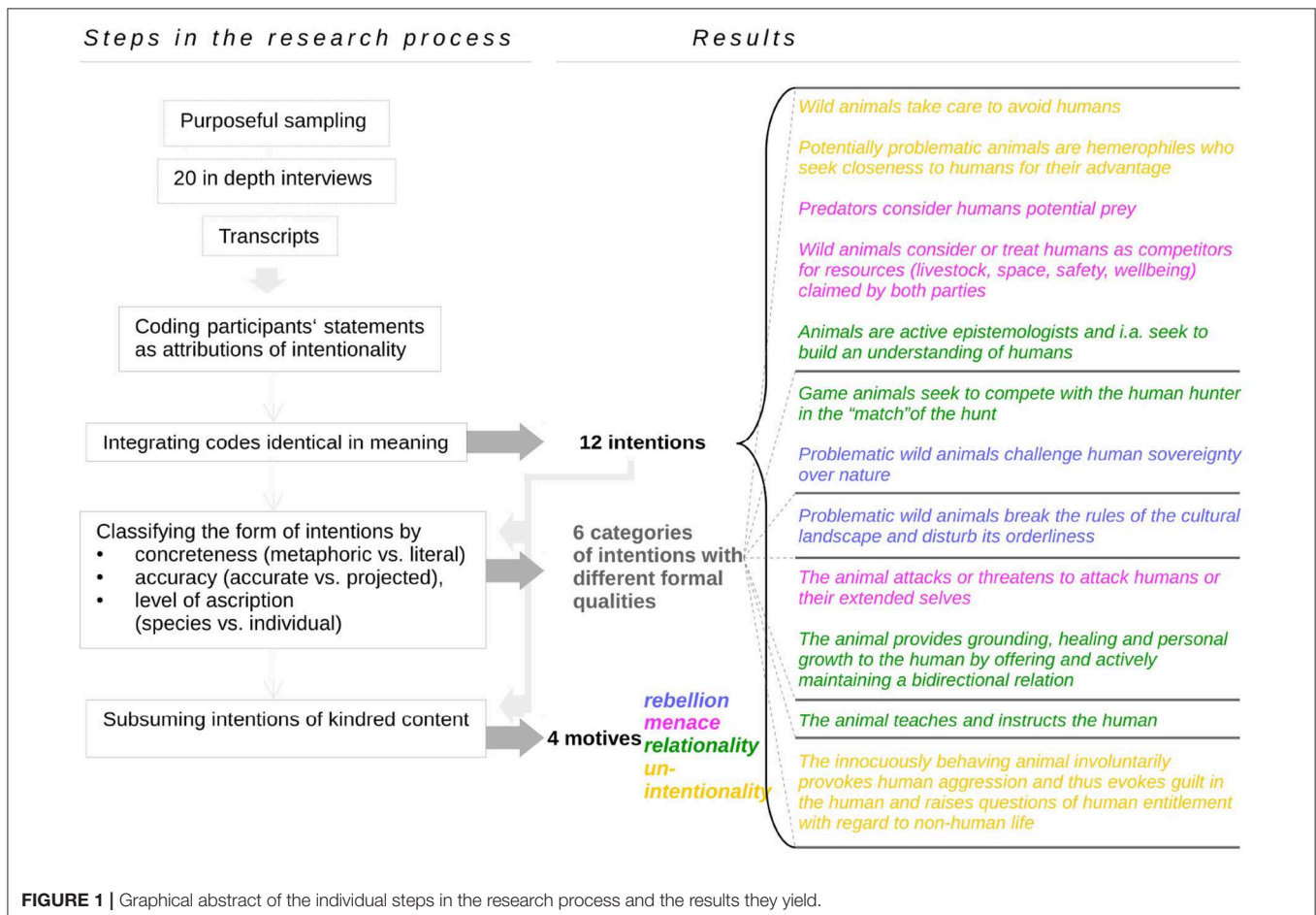


FIGURE 1 | Graphical abstract of the individual steps in the research process and the results they yield.

animal's intention, or when an “as if” framing could be inferred from the immediate context.

Accuracy

Attributions of intentionality can be distinguished by their accuracy (cf. De Waal, 1999). A statement was coded as “accurate” if the attributed intention could actually be held by an animal of the respective kind, measured against publicly available ecological, ethological and comparative psychological knowledge (Low, 2012; Gupta and Sinha, 2014), or folk-psychological intuitions about emotional states that animals entertain (Demoulin et al., 2004). Statements were coded as “projected” if by these standards, the attributed state of mind falls under De Waal's (1999) idea of anthropocentric anthropomorphism (see above), resulting in the attributions being “to a large extent independent from what we know about the animals themselves” (ibid., p. 261), e.g., animals seeking to impeach humankind's wrongdoing. In some of these cases, participants declared that they did not actually assume the animal to have these intentions, but nevertheless felt that the content of the projected intention somehow described a deeper truth of the human-animal relation, thus distinguishing this projected from a metaphoric “as if” kind of speaking about that relation. As De Waal (1999) notes, the criterion of accuracy evolves with the body of scientifically validated instances of animal intentionality.

Level of Ascription

Distinguishing ascriptions with regard to whether they are being made to an animal species, or to particular individual animals, allows for better situating participants' statements within ongoing discourses, e.g. with regard to biocentric, and ecocentric ethics (Klaver et al., 2002; Callicott, 2004). Moreover, the level of ascription may indicate the degree to which attributions rely on personal experience or on general knowledge and assumptions. I coded intentions as “species-level” if (i) participants framed them as being characteristic of the animal species or an abstract prototypical instance of that animal; or if (ii) intentions were construed as being directed at humans in general or at particular humans seemingly representing humankind. Conversely, statements were coded as “individual-level” statements if participants perceived a particular animal as holding an intention toward them individually, i.e. when the actors in these recounted scenes cannot be interchanged for other members of their species. The criteria of concreteness, accuracy, and level of attribution constitute continua. Eight categories were defined by intersecting their respective extreme poles. The intentions that participants attributed to animals were sorted into these categories in order to describe their forms.

Additionally in a fourth step of analysis, I established a complementary classification for capturing the contents of intentions: I subsumed kindred attributions under common themes based on shared thematic essences. These second-order themes will be termed “motives” in this article.

RESULTS

None of the interview prompts was directed at drawing out potential ascriptions of intentions to the model animals, yet all participants spontaneously brought up the conception of animals targeting humans with their behavior. Three of the 20 participants explicitly rejected this conception: Animal rights activist S2 pondered that her own “relaxed” and “neutral” sentiment toward spiders presumably mirrors the lack of any discernible intention directed at her on the spiders' part. Likewise S5, owner of pet spiders: “The spider does not hurt me when she sits up there (points toward the ceiling). How does she affect me?! I am sitting here, she does not come to say ‘Oh, look, there he sits!’.” Hunter W3 worried that people's disposition to wrongly portray wolves as holding human-focused intent may hinder an objective assessment of human-wolf interactions: “Wolves can't know that [they should not enter human settlements]. When humans inexpertly [...] dispose of waste and wolves scent it [...], they will immediately be suspected, like ‘They were up to something vicious in that village’, isn't it so?”

The remaining 17 participants actively engaged in ascriptions of intentions to wildlife. In total, 12 different kinds of intentions were attributed to wolves, corvids and spiders. Every intention has concurrently been mentioned by two or more participants. The results are summarized in **Figure 1**.

Twelve Intentions of Six Different Forms Attributed to Wildlife

The 12 intentions fell into 6 of the 8 possible categories that resulted from combining the extremes of the three continua (concreteness, accuracy, and level of ascription): No attribution was found to simultaneously be “metaphoric” and “accurate”, neither on the individual, nor species level. The lack of intentions falling into a metaphoric-and-accurate category is possibly due to the fact that if participants made ascriptions that might be accurate, they stated them as literal attributions. In the following sections, I present the intentions ascribed to the model animals by categories. **Table 1** gives an overview of the intentions by categories.

Species-Level, Literal and Accurate Attributions

The intentions categorized under this heading constitute statements about what participants seemed to consider wildlife ecology. These are broad statements about presumed motivations or behaviors of the animal as a species toward humankind.

Wild Animals Take Care to Avoid Humans

“The wolf has no interest whatsoever in coming close enough to the human sphere to allow for direct [...] encounters [...], seeing a human, or being seen by a human. [...] There is a natural restraint on the part of the animal not to cross certain boundaries.” (W1)

Participants who contributed statements of this kind referred to an alleged natural “shyness” (W4) of wildlife. Even though that shyness is construed as producing a behavior that is directed away from humans, the underlying intention – avoiding contact

TABLE 1 | The 12 kinds of intentions attributed to wolves, corvids, and spiders, ordered according to the structure built by the 3 continua for analyzing the form of attributions. For each intention, the participants who stated it are listed below.

	Species-level		Individual level	
	Accurate	Projected	Accurate	Projected
Metaphoric	–	Game animals seek to compete with the human hunter in the match of the hunt C3, W7 Problematic wild animals challenge human sovereignty over nature W7, C4	–	The animal teaches and instructs the human S3, S6
Literal	Wild animals take care to avoid humans W1, W2, W4 Potentially problematic animals are hemerophiles who seek closeness to humans for their advantage C1, C3, W2, W7 Predators consider humans potential prey C2, C3, W2, W5, W6, W7 Wild animals consider or treat humans as competitors for resources (livestock, space, safety, wellbeing) claimed by both parties C1, C3, C4, C5, S4, S6, S7, W2, W4, W5, W7 Animals are active epistemologists and i.a. seek to build an understanding of humans C1, C5, S6	Problematic wild animals break the rules of the cultural landscape and disturb its orderliness W2, W4, W6, C4, C6	The animal attacks or threatens to attack humans or their extended selves (e.g., pets) C1, C4, C6, W6 The animal provides grounding, healing and personal growth to the human by offering and actively maintaining a bidirectional relation S3, C5	The innocuously behaving animal involuntarily provokes human aggression and thus evokes guilt in the human, and raises questions of human entitlement with regard to non-human life S1, S4, S5

– is still targeted at humankind, because human presence is the immediate motivator for the animals distancing. Moreover, participants explicitly or implicitly postulated that inherent in the animals’ intention is an awareness for humans’ conceptual distinction between “civilization” (W2), and a sphere dedicated to nature.

Potentially Problematic Animals Are Hemerophiles Who Seek Closeness to Humans for Their Advantage

“We entertain this image of cities not being adequate for wolves. That is utter nonsense. Nothing better could ever happen to the wolf. [...] Wolves are not found in the deep dark forest. What would they do there, there is nothing! Conversely, in town... – we, as humans, feel the same, don’t we?” (W7)

In contradiction to the notion of wildlife fleeing human presence, other participants brought up the idea of wild animals deliberately entering human settlements. C1 suggested that hemerophilia be an acquired behavior since “corvids, foxes and probably even spiders and insects. . . , they are animals who adapt really well”, and who exhibit a human-focused intention in the

sense that “they just take, it seems, what humankind offers, they take the best from that” (C1).

Predators Consider Humans Potential Prey

“Back then, in times of need, they [wolves] entered the settlements and came for humans.” (W6)

Virtually all participants interviewed on wolves spontaneously got to talk about the idea of the predators being a manifest physical threat to humans. Some explicitly excluded this option (W1, W3, W4), the others thought it possible or very likely that wolves may intend to prey on humans when they get the opportunity or are forced to do so, e.g., due to a lack of natural prey. Even some of the participants interviewed on corvids or spiders mentioned that humans may be considered prey by wolves, e.g., as a means of expressing their thought that humankind is still at the mercy of the powerful laws of nature:

“With the wolf, things will be alright until a human actually... will be harmed, right? [...] By nature. In that event, nature is going to kill us again, right?” (C2).

W6 suggested that wolves actually possess a defined prey-pattern for humans and that thus “the fairytales are not so wrong at all!” (W6).

Wild Animals Consider or Treat Humans as Competitors for Resources (Livestock, Space, Safety, Wellbeing) Claimed by Both Parties

“One parameter is ‘harmony within nature’, like I want to build my nest within nature. Yet on the other hand, all beings take care of their nests. Spiders take care of their webs, hamsters take care of their dens, right? [...] – all creatures take care of the [...] living spaces where they dwell.” (S6)

Participants proffered that many challenges in human-wildlife coexistence originate in conflicting claims on limited resources. In the case of human-spider and human-corvid conflicts, the resource aspired by both parties was said to be living space that is limited by humans’ motivation to keep out other beings whose presence could be considered a nuisance or to cause a “problem of hygiene” (S6). Corvids moreover were suspected of competing with humans for livestock (C4) and small game (C3). Likewise wolves, who were accused of devouring “along with lambs, [...] the adult sheep” (C4), large numbers of wild ungulates (W2, W4, W5), and pets (W6, W7). Participants starkly differed with regard to their stance as to which one of the competitors ought to refrain from their claims. The majority postulated a human right to leverage their interests, or reported to have naturally acted upon such a right. Others, however, were looking for a balanced solution that “makes it work” for all sides (C4) or even demand that humans wield a “responsibility” toward wild animals and are “obliged to take care” (C5) of their needs. With regard to their alleged “excessive” use of resources, S7 likens humankind to a “tumor” and demands that people curb their “greed”.

Animals Are Active Epistemologists and i.a. Seek to Build an Understanding of Humans

“They [crows] likely observe us, too. We launch investigations about them... but they could probably also study us, if they were interested in doing that (laughs).” (C1)

It is probably due to the witty looks and scientifically certified intelligence of corvids, that participants profusely attributed them with an intent to actively seek an understanding of the world. Given that human-wildlife interactions are as much part of human reality as it is, in their respective way, part of animals’ reality, C5 even proposed that corvids possess their own ethical compass for navigating coexistence with humans. She stated: “They are so intelligent, of course, they can tell by the facial expressions, or by one’s behavior, whether humans are nice and good.” Non-human forms of epistemology were, however, not seen as being restricted to vertebrates: S6, who praised spiders’ alleged deep knowing of the universal laws of nature (see below), considered that they may have a spider-specific way of exploring their environment. This is one reason, for him, to see an ethical quandary in excluding spiders from his apartment, since by relegating them to outside his space “it would remain forever a mystery to [the spider] what lies beyond.”

Species-Level, Metaphoric and Projected Attributions

This category embraces motives ascribed to animals as a species, which participants stated in a metaphoric manner either as a means of illustrative speech, or because they assumed that the corporeal creatures are not actually capable of entertaining these states of mind. Still, these intentions evidently appeared to participants as fecund means of interpreting their relation to the animal.

Game Animals Seek to Compete With the Human Hunter in the Match of the Hunt

“[W]hen we had begun making our initial experiences [with developing a strategy for hunting corvids], much went wrong and we launched a hell of an effort, got up early in the morning, [...] had brilliant ideas, brilliant thoughts about how we might succeed – yet the crows, they would see things differently, they were like ‘Well, let’s teach those guys!’, right? However, this is the very thrill: learning from these mistakes, growing smarter along [with the crows], refining the strategy, and then, eventually, outsmarting them.” (C3)

Six out of seven hunters interviewed insinuated that in their views, the beauty of hunting resulted from wrestling with the fact that success is not guaranteed when they go stalking. C3 and W7 explicated this sentiment, stressing that for them the joy flows from proving their worth as hunters by “being smarter than” (W7) the “highly intelligent” game animals. They construed the game as competitors like in a sports match where hunters represent the champions of humankind, and the individual game animals embody the cunning of their species. This was claimed to be particularly true for corvids who, like geese, “can grow very old compared to other wildlife”, and therefore, “[t]hey have seen many hunters, over many generations. [...] They also transmit their knowledge to their kin. [...] and that is what makes [hunting corvids] so interesting” (C3). The attribution of a meaningful intention on the part of the animals – or of something like a master spirit of the species – to enter into this match was further underscored by the hunters’ reported feeling of “respect” (C3) toward their competitor.

Problematic Wild Animals Challenge Human Sovereignty Over Nature

“For me, he is [...] the fascinating political being who holds up a mirror to us: ‘I am Wolf, I rule! In fact, in an utterly unemotional manner, I’ll come and take from you the livestock I need. You don’t make any decision. YOU are not capable of neatly managing your anthroposphere.’” (W7)

Many participants’ statements were enwrought with insinuations of potentially problematic wildlife questioning human hegemony over nature. W7 stated this plainly. Being a former politician and currently a lobbyist for organizations with a wise use agenda, W7 recurrently pointed to the failure of German politics to apply existing ordinances about wildlife to wolves, in order to set boundaries to expanding wolf populations. For him, connivance toward wildlife amounts to a self-proclaimed failure in what he and many of his fellow hunters consider to be the “ethical

responsibility” and god-given “obligation to maintain our human creation” of the cultural landscape (W7). Yet they not simply pinpointed a negligence on the part of the human that may result in, e.g., unbridled reproduction and a “plight” (W4) of wolves that could be considered an inadvertent consequence of human idleness. Instead, W7 attributed to wolves the veritable intention of challenging the human mastery of nature through their very existence. Judged from this perspective, wolf agency does not constitute a plainly ecological phenomenon of animals pursuing their species-specific lifeways, but instead represents a “brutal” and “perfidious” (W7) expression of a non-human creature showcasing its potency and seeking to humiliate humankind. In a similarly expressive manner, C4 who is a shepherd keeping a small flock of ancient sheep races for educating children on the biodiversity in traditionally managed grasslands, charged ravens with a rebellious mindset: “In orchard meadows, there is plenty of food for birds, too. That’s good, we want biodiversity! We also accept ravens, if they are well-behaved. What we do not want is raven-terrorists.”

Species-Level, Literal, and Projected Attributions

An ascription to potentially problematic animals as a species can be stated in a literal manner, and simultaneously be classified as “projected” if participants are so intimately married to their own perspective that they arguably confuse the salience of their interpretation with its ecological accuracy.

Problematic Wild Animals Break the Rules of the Cultural Landscape and Disturb Its Orderliness

“Listen! (speaks vehemently) Who is the one to get jailed? [...] The perpetrator or the poor victim? Do we really need to discuss this? The villains are to be imprisoned – and the villains, that’s the wolves!” (W6)

Kindred to the attribution of potential problematic wildlife challenging the hegemony of humans, but much more concrete (and therefore: categorized as a “literal” attribution) is several participants’ allegation that animals somewhat knowingly offend against the rules of proper conduct that apply in spheres managed by humankind. It seems that participants extrapolate the tacit standards by which human behavior is judged to non-human inhabitants of the cultural landscape. For example, wolves’ way of hunting and killing was likened to the “cold-blooded” (W7) or, conversely, bloodthirsty excessive, “mindless” (W4) massacre of a psychopath who is driven by a “lust to kill” (W6). Participants with these perspectives on wolves, and also on corvids who likewise are defined as “hitmen” (C4), deemed these animals essentially “evil” by nature (W6). Based on the sentiment that potentially problematic animals intentionally perturb the neat and peaceful order of the human-made landscape, W2 demanded that wolves need to be taught “how to behave” and that a continuous effort is necessary to “keep tabs on the wolf”. This seems to be of particular relevance to hunters who hold an ethos of responsibly managing their hunting district. They divulged to feel forced to tolerate the competition of another hunting agent, whom, however, they perceived as not subscribing to their

ideal of fostering and caring for the game. Likewise, shepherd C4 said she holds strong ideals with regard to establishing and maintaining the ecological value of extensively managed cultural landscapes. She accused corvids and also wolves of challenging her pursuit of these ideals: “I do not disapprove of ravens *per se*. But they are too many and they become ever more impudent. I also do not disapprove of wolves. Yet, when one of these animals misbehaves, they must be disciplined.” Despite her thorough ecological orientation, C4 seemed to apply human-made morals to ravens “snitching” newborn lambs: “They are taking quite the easy route to foraging. Stealing seems to be much more convenient than engaging in their own labor.” In a similar vein, the elderly couple C6 complained about “impudent” rooks flying by their balcony and coming too close for comfort.

Individual-Level, Literal, and Accurate Attributions

Statements about animals’ intentions that fall under this category figured in participants’ recounts of actual encounters with wildlife.

The Animal Attacks or Threatens to Attack Humans or Their Extended Selves

“I could hardly leave the pasture, [...] without the ravens descending from the trees. They did not fly away when I came, they perched in a safe distance on the trees, and they waited for me to leave. I had to leave, because I had to get the food [for the sheep]. When I returned two or three hours later, my fosterling lamb lay dead.” (C4)

Shepherd C4 reported having lost five lambs to depredation by ravens. She shared to be intimately attached to her sheep, considering them wardens and colleagues. She complained to meet with paralyzing bureaucratic hurdles on the part of the German agencies in pursuing her one-person business, and to recurrently struggle with feelings of abandonment and of being at the mercy of amorphous powers that stand in the way of what she considers her “good” ecological mission. Against this backdrop, she said she feels utterly helpless and outraged with regard to the ravens’ apparently calculated and patient wait for the ideal moment to launch their offense against the newborn lambs. Similarly, horse breeder W6 claimed to have had a non-lethal attack of wolves on his herd. His passion had been breeding Iceland horses, and he considered his mares “family members”. He felt that not only his cherished individual horses, but his lifework is under menace of the predators whom he accused of proceeding in a strategic manner. For example, he said that wolves are known to “enter the stables and seize calves.” W6 and C4’s feelings of being under the threat of a wild animal’s imminent attack as whose target they have been chosen, gets paralleled by other participants’ latent sentiments: For example, C6, the couple living in a block encircled by trees on which rooks nest described their experience as the corvids’ “closing in on us”. They reported having to think of Hitchcock’s movie “The Birds” when they see rooks “uncannily” draw near. Even though corvids and wolves arguably do not make strategic moves with the intent to harm humans, the human-wildlife encounters

described here could have originated in an actual intention on the part of the animals to target these people – or beings who constitute participants' extended selves –, with their aggressive behavior. Therefore, participants' ascriptions are classified as being potentially accurate.

The Animal Provides Grounding, Healing and Personal Growth to the Human by Offering and Actively Maintaining a Bidirectional Relation

“I do not know why animals are this way, but what I do know: for THEM, life is worth living. [...] They are so] loving, [...] they communicate that they respect me, that they appreciate me, and also, they know that I am feeding them good stuff, that I don't mean any harm.” (C5)

Some participants seemed to experience a kind of intimate communion with wild animals. C5, for example, explained how she feeds crows near her home and that the birds appear to recognize and to like being around her even when she comes without food. She said she relishes in observing their behavior and perceives many of their actions as being responding or referring to her way of being. For instance, she claimed that the crows have purposefully befouled a man after he had insulted her for feeding them. S3 told me about similarly grounding interactions with tarantulas. He shared having been severely traumatized and suicidal, but having then derived a sense of being anchored in existence from his pet spiders' reactions to his presence: By their vigilance, they “showed me that they are here. And, eh, that they know that I am here.” The deep-going effects of C5's and S3's encounters with wild animals notably are not based on projecting human-like states into non-human minds, but on actual faculties in the respective animals: on crows' ability for interpersonal communication and attachment, and on tarantulas' basic sensitivity for environmental stimuli. Also, participants were unarguably right in their feelings that the success of communication with their animal counterparts is not predicated on issues of mood or status that could be relevant in human-to-human social encounters: “Regardless of how I feel, regardless of my wealth [...], there is no status, I do not need to prove my worth [...] they do not care about that.” (C5).

Individual-Level, Metaphoric, and Projected Attributions

Statements collected in this category refer to situations in which participants clearly anthropocentrically anthropomorphized animals. In personal encounters, they projected mental states onto wildlife which require a degree of understanding and vision that, by all likelihood, are not at the disposal of animals of the respective kinds.

The Animal Teaches and Instructs the Human

“That kind of tarantula that I had, she was aggressive. And she was the one who taught me. She expressed this to me like someone standing in front of me who is saying ‘Well, do not be aggressive!’ That is how [...] my aggressiveness] decreased.” (S3)

Numerous participants in this study related having learned important lessons from spending time with wildlife. Many deemed animals models for social conduct among humans, e.g. C3 and C5 who praised the loyalty that corvids seem to show among their peers as a demeanor that humans ought to emulate. However, only two participants framed their insight with regard to learning from wildlife in terms of the animals actively intending to instruct them. S3 had struggled with impulsive aggression throughout his youth. He claimed to have learned to deescalate his irascibility through his allegedly equally quick-tempered pet spider being a buddy or foreman on the path to heightened self-composure. Artist S6 experienced not an ongoing growth-relation, but a “transformative” instructive moment with a spider in the wild. While having been on a quest for his place within the whole of nature, he addressed a weaving spider with his hunger for insight, and was seized by an epiphany: S6 realized that in their weaving, spiders embody and express the laws of fractal geometry, which have always fascinated him. Having discovered by the spider's demonstration that creative artists of all species are endowed with a comprehension of these universal laws, made all his epistemic queries fall into place. As a consequence, also S6's relation to spiders in general was transformed: Prior to his realization of fractality in spiders' artistry, he had considered them a nuisance and also fearsome animals, and their webs disgusting. Yet, after having learned from them about their prowess, he developed thorough feelings of “fascination” for their deep wisdom they seem to generously share.

Individual-Level, Literal, and Projected Attributions

The intention coded under this heading is a projected one that participants factually attributed to the animal individuals involved: They perceived the animal as accusing humans' feeling entitled to curtail animal agency. For participants, this accusation refers to the very concrete and pressing issue of how to handle the practical challenge of human coexistence with, e.g. spiders. However, attributing an accusatory stance to animals is a projected ascription, because the animals inadvertently raise that question through their behavior; but they are not the ones actually asking it.

The Innocuously Behaving Animal Involuntarily Provokes Human Aggression and Thus Evokes Guilt in the Human and Raises Questions of Human Entitlement With Regard to Non-human Life

“I conform with the idea of veganism [...], therefore, I do not want to kill spiders. [...] Small spiders, I have caught them under a glass and put them outside, eh, ... yet, with large ones, I feel unable to do that. I actually feel compelled to ... I am really sorry, really really sorry... I do not just see evil in spiders, but in that very moment, it's a compulsory urge like ‘Get rid of this!’” (S1)

The spider phobics interviewed in my study, explained how they wrestle with the question of ethical conduct toward innocuously behaving animal agents. Participants who feel afflicted by the latently menacing presence of wolves (W6) or corvids (C6)

adumbrated similar sentiments. Yet, since these animals are not as easy to eliminate as spiders, human-spider interactions may be a paradigmatic case evidencing a dynamic potentially present in all human-wildlife conflict situations: How dearly held general rules of ethical conduct are violated when practical decisions need to be made and implemented. For example, S4 described how her general conviction should – but fails to – translate into concrete ways of moral conduct toward individual spiders in her household. As a theologian, it is her conviction that “humans are responsible, like, responsible for the world and for its wellbeing. I think this is why I have this issue with my pangs of conscience regarding[...] killing spiders. Because they are living beings. [...] And I believe it is my responsibility to care for other living beings.” Based on a sentiment that her moral liability is to the individual animal, her reported way of alleviating her remorse is to literally apologize to the spiders she kills. In all these cases, participants appeared to be painfully aware of the conceptual cleavage between feeling somehow targeted and affected by the animals’ behavior, and believing that animals naturally have a right to freely pursue their ways of life. It is from this cleavage that their remorse seems to flow, a fortiori sensing that “it is quite obvious that this [the animals’ intrusion into the human sphere] does not happen intentionally” (S6).

Four Motives Underlying the 12 Attributed Intentions

Across the different categories defined by the three continua, some of the 12 individual intentions exhibit analogies with regard to their content. For example, the metaphoric allegation that “problematic wild animals challenge human sovereignty over nature” and the more literal attribution that “problematic wild animals break the rules of the cultural landscape and disturb its orderliness” share a common thread with regard to animals’ presumed incentive to rebel against human rule and rules. By integrating the kindred intentions in this way, a total of four motives emerged:

Rebellion: The animal intends to challenge human rule and rules. The animal recognizes a human claim for hegemony over nature and intends to rebel against the entitlement presumed by humankind.

Individual intentions mapped onto this motive:

- Problematic wild animals challenge human sovereignty over nature.
- Problematic wild animals break the rules of the cultural landscape and disturb its orderliness.

Menace: The animal holds an intention that either directly threatens human life and livelihood, or that implies a menace to human wellbeing. The animal recognizes and intends to seize an opportunity for preying on the human or for exploiting the human’s resources.

Individual intentions mapped onto this motive:

- Predators consider humans potential prey.
- Wild animals consider or treat humans as competitors for resources (livestock, space, safety, wellbeing) claimed by both parties.

- The animal attacks or threatens to attack humans or their extended selves (e.g., pets).

Relationality: The animal intends to enter into and to entertain a bidirectional relation with the human, either as a competitor, as a contemporary agent, or as a confederate. The animal deliberately proposes itself as a relational counterpart to the human.

Individual intentions mapped onto this motive:

- Animals are active epistemologists and i.a. seek to build an understanding of humans.
- Game animals seek to compete with the human hunter in the match of the hunt.
- The animal provides grounding, healing and personal growth to the human by offering and actively maintaining a bidirectional relation.
- The animal teaches and instructs the human.

Unintentionality: The animal innocuously transgresses red lines defined by humans while holding intentions of pursuing their own lifeway (foraging, exploring, residing, etc.). The animal’s intention is not directed at humans, but unbeknown to the animal or unavoidably, the animal’s behavior affects them.

Individual intentions mapped onto this motive:

- Wild animals take care to avoid humans.
- Potentially problematic animals are hemerophiles who seek closeness to humans for their advantage.
- The innocuously behaving animal involuntarily provokes human aggression and thus raises guilt in the human and raises questions of human entitlement with regard to non-human life.

DISCUSSION

The results suggest that attributing human-focused intentions to wild animals is a prevalent interpretation pattern (Oevermann, 2001) in human-wildlife encounter. A vast majority of participants engaged in such ascriptions, whereas a minority pondered and rejected that way of thinking about animals. This explicit rejection can be taken as an indirect evidence of the importance of that interpretation pattern, since even people not adopting it take a stance toward it.

These interpretation patterns take different forms for different people, and in different scenarios of human-wildlife interaction. Yet, there are commonalities.

Inter-individual Differences Generate Contradictory Attributions to Wildlife

Diverse, even contradictory, intentions and motives have been attributed to each of the three model species by different participants. Opposing construals of animals’ intentional agency correspond to the variety of possible valences of human-wildlife relations (Bhatia et al., 2020; Pooley et al., 2021), and to polarized discourses within the context of a community’s interaction with a particular species, e.g., hunter- and farmer-wolf interactions (Bell, 2015). The polarization of stances in many human-wildlife

interactions (Jürgens and Hackett, 2021), and in many instances of conservation conflicts more generally (Adams, 2015), has been traced to, i.a., disparate value orientations (Stern and Dietz, 1994; Thompson and Barton, 1994; Kaltenborn and Bjerke, 2002; Dietsch et al., 2017), group identity (Dressel et al., 2015; Carlson et al., 2020), and differential perceptions of the risks and benefits of wildlife presence (Bruskotter and Wilson, 2014; Slagle et al., 2019). I have insinuated how these aspects may play out for the participants in this study by sketching some of their personal life histories, idiosyncratic perspectives, and ideals. For example, the elderly couple C6 felt threatened by rooks flying by their neatly arranged balcony. Conversely, crow feeder C5's heart burgeoned by close contact with her bird friends. Animal rights advocate S2 perceived spiders as beings utterly disinterested in humankind; spider phobics S1 and S4 described spiders as intruding their intimate spaces; whereas emotionally fragile S3 praised his pet spider as a benign teacher. For the case of wolves, Herzog (2019) describes how people's biographies relate to diverging attitudes. It seems that likewise, the intentions attributed to wild animals map onto the attributors' identities. A particular pattern with regard to a potential influence of group identity can be sketched by considering the seven hunters in the sample. Hunters did not seem to differ from the other participants in the concreteness and accuracy of attributions – in spite of their arguable rich asset of practical interactions with wildlife. Yet, they solely attributed intentions to wildlife at the species level. This is possibly owing to a holistic view of nature and wildlife (Klaver et al., 2002) prevalent in the hunting community and embodied in hunting jargon (cf. Howe, 1981; Wade, 1990). In this explorative study, a potential systematicity of a correspondence between biographic variables and attributions to wildlife can only be adumbrated due to the small sample size, and remains to be established and quantified in a larger and representative sample by future research.

Correspondences of Attributed Intentions to the Character of Human-Wildlife Encounters

In addition to participant-specific differences, patterns of species-specific differences appear in the data: Attributions made to wolves, corvids and spiders seem to exhibit different forms. Wolves predominantly attract attributions at the species-level; while individual-level intentions are ascribed to corvids and, particularly, to spiders. Corvids are attributed with mostly accurate intentions stated at the individual-level; whereas spiders are ascribed individual-level intentions that are of a projected quality. I propose that these differential qualities of attributions reflect the differences in experiences that participants have made with the respective wildlife (cf. Lescureux and Linnell, 2010).

For two decades, area-wide sedentary populations of wolves have established in the eastern federal states of Germany and in Lower Saxony. In the remainder of Germany, only a few packs and individuals have become sedentary to date. Residents seldomly see wolves (Poerting and Marquardt, 2019) and depredation on livestock evidences the side-effect of human-wolf coexistence (Arbieu et al., 2019), while wolves themselves remain elusive. Lescureux and Linnell (2010) report that even

in Macedonia, where people have virtually always coexisted with wolves, they are perceived as “hard to localize” and “as a homogenous population rather a collection of individuals” (ibid., p. 394). The predominantly abstract species-level attributions of intentionality to wolves correspond to the rather amorphous character of wolf presence. Simultaneously, wolf issues are politicized in Germany as fiercely as elsewhere (Nie, 2001; Poerting and Marquardt, 2019; Pates and Leser, 2021), probably accounting for the projected attributions to wolves, whereas the accurate ascriptions may be due to education campaigns about wolf ecology, for example the popular “Welcome Wolf”-Campaigns of Germany's largest environmental organization NABU¹ Both the ecologically framed attributions, and the blatant anthropomorphizations – e.g., attributing a penchant for recalcitrance or even a prowess to mastermind a rebellion of nature against humankind – may be attempts to understand and gain a sense of cognitive control (cf. Johansson and Karlsson, 2011) over an intangible natural phenomenon: the return of a predator to a previously tamed cultural landscape.

In a similar, but more mundane way, spiders may linger everywhere unsighted and can appear any time out of thin air. Thus, spiders are able to evoke a primal startling response that arguably is evolutionarily imprinted (Öhman and Mineka, 2001; Miltner et al., 2004). Moreover, spiders are utterly foreign to us in their ways of being, making it virtually impossible to intuitively pick up on their intentions. In the absence of any discernible emotional display, the deliberate, yet unpredictable motions of spiders may evoke disproportionate attributions of intentionality (cf. Johnson and Barrett, 2003; Epley et al., 2007). Consequently, while the concrete form of attributions to spiders likely is reflective of the every-day, one-on-one quality of human-spider encounters, the assumptive projected statements about spiders' intentions may constitute participants' attempts to mentally and practically master the challenge of facing an unpredictable animal counterpart in an under-determined situation (Epley et al., 2008).

Contrarily, corvids exhibit an ostensible presence. A shepherd confronted with ravens eyeing their newborn lambs or citizens faced with crows full-throatedly engaging in the social life of their rookery, face a well-defined challenge, the management of which hinges on efficiently interpreting the birds' behavioral intentions. Corvids' demeanor is so human-like in many respects that “heuristic anthropomorphization” (De Waal, 1999) suggest their “applicability” (Epley et al., 2007; p. 871) for understanding corvid agency. Hence, the predominantly concrete and potentially accurate attributions to corvids.

In sum, people face different challenges in encounters with wolves, corvids, and spiders, which seem to get reflected in the quality of attributions made to these animals. This idea conforms with the findings of Lescureux and Linnell (2010), who have found that the distinct images their participants held about wolves, bears, and lynx, respectively, correspond to the differential experiences they have made with members of these species. The present study is a mere exploration of such dynamics, and due to its small number of purposefully sampled

¹https://www.nabu.de/imperia/md/content/nabude/kooperationen/140610-nabu-vw-willkommen_wolf.pdf

participants, generalizing the presumed patterns is unfeasible at this point. Comparative investigations specifically geared at validating species differences are needed to elaborate and confirm the speculations presented in this discussion.

Overarching Dynamics

Differences in the form of intentions attributed to wolves, corvids, and spiders seem to exist, yet similar overarching motives – *rebellion*, *menace*, *relationality*, and *unintentionality* – appear to underlie the seeming diversity of ascriptions with regard to their content.

For example, while the concreteness of the form in which an attribution of intentions to wildlife is expressed (literal vs. metaphoric) may be based on the level of concreteness of one's experience with the respective animal (cf. Lescureux and Linnell, 2010; Slagle et al., 2019), these different rhetoric manifestations may reflect variations “regarding the strength and behavioral consequences” of that attribution, “not a fundamental difference in kind”, as Epley et al. (2007, p. 867) state with regard to “strong” and “weak” forms of anthropomorphism. When we accordingly abstract from the form-related differences of ascriptions, and focus on the underlying stable cores of meaning as expressed in the four motives, the differences between the three model animals level out: The motives of *relationality* and *unintentionality* are present in intentions attributed to all three model animals. *Rebellion* and *menace* manifest in attributions made to wolves and corvids, not to spiders. However, it is likely that participants entertain, but withhold attributions of menacing intents to spiders since only very few poisonous spiders exist in central Europe (cf. Bellman, 2006) and therefore people may correct their “automatic anthropomorphic interpretation” based on rational knowledge (Epley et al., p. 870). Still, the theme of *menace* is present in human-spider encounters: Not only the three spider phobic participants, but also some of the non-phobic subjects, including arachnologist S7, conceded having a sense of “healthy respect” (S7) with regard to endemic spiders, because “I know that they could hurt me, and I am wary with regard to that possibility.” Likewise, it may not seem adequate to overtly attribute a motive of *rebellion* to spiders, given that “they do not even have an actual brain” (S6), and given the comparatively insignificance of human-spider conflicts, where human superiority can easily be restored. Yet, as S4 states somewhat abashedly with regard to huge, fast-moving spiders: “I actually feel like they have power over me, because they put me in the position of panic and dread [...]. And when I do not capture them, I would not be able to sleep because I fear that they are around somewhere [...] Indeed! It is an issue of power.” Consequently, the fact that people's anxiousness, at least within the scope of my interviews, did not translate into explicitly attributing a menacing or rebellious motive to spiders, should not be taken to mean that such attributions do not tacitly exist.

These findings indicate that interactions with wild animals as diverse as wolves, corvids, and spiders – and arguably also with many further kinds of wildlife – have the potential of evoking similar reactions in people (Jürgens and Hackett, 2021).

Converging Findings

The idea that virtually all kinds of human-wildlife encounters may evoke similar sentiments in people, is moreover corroborated by the fact that the 12 intentions and four motives attributed to the three model animals by participants of this study correspond to themes that have been described in previous research on human relations to various wildlife and to nature in general.

The motive of *rebellion* corresponds to the concepts of human domination of nature, or anthropocentrism, proposed as value orientations pivotal to human-wildlife relations (Kellert, 1980; Callicott, 2004; Teel and Manfredi, 2010; Jürgens et al., 2022). Animals' intentional agency may challenge some humans' claim on a “supremacy over nature” (Bell, 2015, p.149). Similarly, non-human agents who transgress the conceptual line between the spheres of civilization and nature, and thus populate spaces where they presumably do not “belong” (Figari and Skogen, 2011; Breyne et al., 2021), refute “human social orderings of space” (Poerting and Marquardt, 2019, p. 147). In this vein, particularly wolves are construed as animals “disrespectful of borders and norms” (Lescureux and Linnell, 2010, p. 394). Bell (2015, p. 239) described how wolf behavior is perceived by many US farmers and hunters as perturbing the “social order” of communities in the West, founded on the ethos of “conquering” wilderness. For members of various cultural backgrounds, similar sentiments are stirred not only by wolves, but by bears, feline predators, foxes, wild boars, corvids, spiders, and arguably many further species (Hunziker et al., 1998; Kotulski and König, 2008; Margulies and Karanth, 2018; Mondini and Hunziker, 2018; Jürgens and Hackett, 2021). It would be a valuable endeavor for future research to elucidate whether such views of a “symbolic threat to human groups' identity [...] and to the perceived higher status of human beings” (Sevillano and Fiske, 2019), are systematically accompanied by explicit attributions of rebellious intentions to the allegedly perpetrating animals.

A not only symbolic, but manifest threat is expressed in the motive of *menace*. This motive is mirrored by human fear, a factor pertinent in the human dimensions literature. Either in the form of fear for their livelihoods or for their physical lives, feeling threatened by wildlife is a major driver of conflicts between communities as diverse as Ladakhi, Sàmi, Botswanians, and Eastern Germans, with wildlife as diverse as large canine and feline predators, beavers, and snakes (Lindquist, 2000; Öhman and Mineka, 2001; Flykt et al., 2013; Siemer et al., 2013; Bhatia et al., 2021; Grinko et al., 2021). When wild animals are considered “natural enemies” (Knight, 2000), or perceived as emanating a sense of “abstract danger” (Poerting and Marquardt, 2019, p. 148), the idea of a menacing intent implicitly or explicitly directed at humankind is implied. This idea also is latently present in rituals, for example the worship of Waghoba in Warli culture that is, i.a. dedicated at appeasing menace through big cats (Nair et al., 2021).

Such rituals moreover indicate ascriptions of the motive of *relationality* to wildlife – or to master spirits governing wild animals' behavior: The effect of Waghoba worship on mediating human-big cat coexistence described by Nair et al.

(2021) hinges on construing the deity and its kindred physical felines as being willing to entertain transactional relationships with humankind. In a similar vein, Westerners subscribe to “mutualism”, a value orientation construing wildlife as “capable of relationships of trust with humans, as if part of an extended family, and as deserving of rights and care” (Dietsch et al., 2017, p. 177). Concurrently, Swiss citizens viewing nature as a partner tend to endorse lynx protection (Egli et al., 2001), and US Mid-West hunters conceiving of humans as being “part of a web” of life concede a “right to hunt” and “respect” to wolves (Bell, 2015, p. 295). Given that a true understanding between human and non-human beings is an actual possibility (Jürgens, 2017), attributions of relational intent to wildlife are more than mere “anthropocentric anthropomorphisms” (De Waal, 1999). Yet, it seems that research into human-wildlife interactions, as a field, has virtually exclusively relied on animal *unintentionality* as a premise, either due to a lack of taking other-than-human perspectives into account, or seeking to avoid framing human-wildlife interactions as conflicts between “antagonists” (Peterson et al., 2010, p. 79), in order to facilitate a coexistence mindset (Pooley et al., 2021). However, animal intentionality is a meaningful phenomenon in human-wildlife encounters – both in the shape of human ascriptions to wildlife, as evidenced in this paper; and in the shape of actual intents on the part of the animals, as considered by ethology, comparative psychology, and by political geography approaches to human-nature relations.

Applications for Conservation and Future Directions

Evidently, the intentions attributed to wildlife shape the human relation to the respective animals. The results of my study pinpoint possibilities for how to employ these conceptions for conservation and management. Harnessing the potential of attributions conducive to tolerating or welcoming animal agency, as inherent in the motives of *unintentionality* and *relationality*, and carefully molding the attributions detrimental to conserving wildlife, e.g., sentiments related to the motives of *menace* or *rebellion*, may help with “designing culturally meaningful strategies to facilitate human-wildlife coexistence” (Bhatia et al., 2021, p.8). Particularly, debunking the idea that wild animals may seek to rebel against human supremacy and the unspoken rules of the human-dominated landscape, and replacing such a conception by a more adequate “animalcentric” anthropomorphization (De Waal, 1999, p. 265), is likely to be important for mitigating human-wildlife conflicts. Fine-tuning such an intervention to the form in which ascriptions are stated may prove important: Depending on whether the idea of *rebellion* is proposed in a concrete, literal way, or in a rather abstract, metaphoric manner, education about ecological and ethological facts, or creative approaches based on storytelling, respectively, may be effective. Similarly, different strategies for reshaping people’s assumptions about animals’ motives need to be pursued depending on whether these assumptions are based on actual encounters with individual animal agents, or on a general image of the animal species (cf. Siemer et al., 2013; Slagle et al., 2019).

More fundamentally, the results of this study are yet another invitation to animal ecologists – studying “animals-as-such” – and social scientists – investigating “animals-as-constructed” – to join forces (Echeverri et al., 2018, p. 59). The content and the form of intentions attributed to wildlife are co-determined by both the animals’ actual behavior and human psychology. Animal ecology provides the baseline that defines which kind of interactions will or could take place between humans and wildlife (cf. Lescureux and Linnell, 2010). Then, it is the human mind that interprets and thus gives meaning to these encounters (Waytz et al., 2010; Sevillano and Fiske, 2019), i.a. in terms of feeling targeted by animals’ intentions and agency. Ideally, an approach taking a political ecology or political geography angle for could illuminate the deeper psychological purpose that attributions of intentionality to wildlife fulfill for people within the framework of a given human-wildlife encounter (Nygren and Rikoon, 2008; Pooley et al., 2017), by relating these ascriptions to the manifest political and ecological factors on different scales of the human-wildlife interaction (cf. Margulies and Karanth, 2018). By such a mapping of ecological, and socio-economic linkages, research would enable an adequate recognition of animal intentionality and agency (cf. Latour, 2012) along with fuelling a collective discourse about how we choose to coexist with non-human persons in a human-defined world (Donaldson and Kymlicka, 2011). In this discourse, the media assume a pivotal role. Currently, they seem to predominantly play on themes of *rebellion* or *menace* that exacerbate the perception of human-animal interactions as conflicts, or they anthropocentrically anthropomorphize animal *relationality*. Instead, they ought to responsibly frame their headlines in terms that acknowledge animal agency without romanticizing or badmouthing it. In this vein, the initial examples could be rephrased:

“Compromise balancing sheep breeders’ interests and wolves’ needs not yet within grasp.”

“Parcel constantly overflowed: Anton and beaver disagree on land use planning.”

“A crow apparently shows gratitude by presenting gifts to her feeder.”

CONCLUSIONS

This study explored the prevalence, the form and content of a particular dynamic in human-wildlife interactions: people’s feeling of being personally targeted by wild animals’ intentional behavior. The pervasiveness, the sophisticated nature and the meaningful patterns exhibited by attributions of intentions to wild animals, indicate that these ascriptions constitute impactful interpretation patterns shaping dissimilar human-wildlife relations in similar ways.

Ascriptions of intentionality to wild animals seem to be determined by three aspects: (i) people’s individual perspectives and life histories, e.g. a hunting profession, or a longing for

closeness to non-human beings; (ii) factors specific to the animal species and to the peculiarities of the human-wildlife interaction, e.g. the frequency and gravity of conflictual situations; and (iii) general themes overarching human-wildlife encounters, e.g. value orientations regarding the human role in nature.

Thus, wildlife ecology and human psychology appear to interact in generating people's mental representations of human-wildlife interactions. Therefore, experts on animal ecology and experts on human psychology need to collaborate with one another and with the media, assisting human society in representing animals' perspectives adequately, so that effective management strategies can be devised that respect both human and animal interests.

DATA AVAILABILITY STATEMENT

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

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

REFERENCES

- Adams, W. M. (2015). *The Political Ecology of Conservation Conflicts Conflicts in Conservation*. Cambridge: Cambridge University Press. p. 64–75. doi: 10.1017/CBO9781139084574.006
- Arbieu, U., Mehring, M., Bunnefeld, N., Kaczensky, P., Reinhardt, I., Ansoorge, H., et al. (2019). Attitudes towards returning wolves (*Canis lupus*) in Germany: exposure, information sources and trust matter. *Biol. Conserv.* 234, 202–210. doi: 10.1016/j.biocon.2019.03.027
- Bauer, N., Wallner, A., and Hunziker, M. (2008). The change of European landscapes: human-nature relationships, public attitudes towards rewilding, and the implications for landscape management in Switzerland. *J. Environ. Manage.* 90, 2910–2920. doi: 10.1016/j.jenvman.2008.01.021
- Bautista, C., Revilla, E., Naves, J., Albrecht, J., Fernández, N., Olszańska, A., et al. (2019). Large carnivore damage in Europe: analysis of compensation and prevention programs. *Biol. Conserv.* 235, 308–316. doi: 10.1016/j.biocon.2019.04.019
- Behr, D. M., Ozgul, A., and Cozzi, G. (2017). Combining human acceptance and habitat suitability in a unified socio-ecological suitability model: a case study of the wolf in Switzerland. *J. Appl. Ecol.* 54, 1919–1929. doi: 10.1111/1365-2664.12880
- Beckoff, M. (2007). *The Emotional Lives of Animals: A Leading Scientist Explores Animal Joy, Sorrow, and Empathy—and Why They Matter*. Novato: New world library.
- Belgrad, B. A., and Griffen, B. D. (2016). Predator–prey interactions mediated by prey personality and predator hunting mode. *Proc. Royal Soc. Biol. Sci.* 283, 20160408. doi: 10.1098/rspb.2016.0408
- Bell, J. (2015). Hierarchy, intrusion, and the anthropomorphism of nature: Hunter and rancher discourse on North American wolves. In: Masius, P., Sprengel, J. (Eds.), *A fairytale in question: Historical interactions between humans and wolves*. Cambridge: The White Horse Press. p. 282–303.
- Bellman, H. (2006). *Kosmos-Atlas Spinntiere Europas*. Stuttgart: Kosmos.

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SUPPLEMENTARY MATERIAL

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- Bhatia, S., Redpath, S. M., Suryawanshi, K., and Mishra, C. (2020). Beyond conflict: exploring the spectrum of human–wildlife interactions and their underlying mechanisms. *Oryx* 54, 621–628. doi: 10.1017/S003060531800159X
- Bhatia, S., Suryawanshi, K., Redpath, S., Namgail, S., and Mishra, C. (2021). Understanding people's relationship with wildlife in trans-himalayan folklore. *Front. Environ. Sci.* 9, 595169. doi: 10.3389/fenvs.2021.595169
- Bjerke, T., and Kaltenborn, B. P. (1999). The relationship of ecocentric and anthropocentric motives to attitudes toward large carnivores. *J. Environ. Psychol.* 19, 415–421. doi: 10.1006/jevp.1999.0135
- Brakel, L. A. (2016). Animals are agents. *Animal Sent.* 1, 3. doi: 10.51291/2377-7478.1125
- Breyne, J., Abildtrup, J., and Maréchal, K. (2021). The wolves are coming: understanding human controversies on the return of the wolf through the use of socio-cultural values. *Eur. J. Wildl. Res.* 67, 1–17. doi: 10.1007/s10344-021-01527-w
- Brown, C. (2015). Fish intelligence, sentience and ethics. *Animal Cogn.* 18, 1–17. doi: 10.1007/s10071-014-0761-0
- Bruskotter, J. T., and Wilson, R. S. (2014). Determining where the wild things will be: using psychological theory to find tolerance for large carnivores. *Conserv. Lett.* 7, 158–165. doi: 10.1111/conl.12072
- Call, J., and Tomasello, M. (2008). Does the chimpanzee have a theory of mind? 30 years later. *Trends Cogn. Sci.* 12, 187–92. doi: 10.1016/j.tics.2008.02.010
- Callicott, J. B. (2004). Environmental Ethics: I. Overview. In: Post, S. (Ed.), *Encyclopedia of Bioethics* (3 ed.). New York: Macmillan Reference USA. vol. 2. p. 757–69.
- Canby, P. (2005). The Cat came Back Alpha predators and the new wilderness. *Harper's Mag.* 310, 95–102.
- Carlson, S. C., Dietsch, A. M., Slagle, K. M., and Bruskotter, J. T. (2020). The VIPs of wolf conservation: how values, identity, and place shape attitudes toward wolves in the United States. *Front. Ecol. Evol.* 8, 6. doi: 10.3389/fevo.2020.00006
- Clarke, V., and Braun, V. (2017). Thematic analysis. *J. Posit. Psychol.* 12, 297–298. doi: 10.1080/17439760.2016.1262613

- De Waal, F. B. (1996). *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*. Cambridge, MA: Harvard University Press. doi: 10.4159/9780674033177
- De Waal, F. B. (1999). Anthropomorphism and anthropodenial: consistency in our thinking about humans and other animals. *Philosoph. Topics*. 27, 255–280. doi: 10.5840/philtopics199927122
- De Waal, F. B., and Ferrari, P. F. (2010). Towards a bottom-up perspective on animal and human cognition. *Trends Cogn. Sci.* 14, 201–207. doi: 10.1016/j.tics.2010.03.003
- Demoulin, S., Leyens, J. P., Paladino, M. P., Rodriguez-Torres, R., Rodriguez-Perez, A., and Dovidio, J. (2004). Dimensions of “uniquely” and “non-uniquely” human emotions. *Cogn. Emot.* 18, 71–96. doi: 10.1080/02699930244000444
- Dietsch, A., Manfredi, M., and Teel, T. (2017). Wildlife value orientations as an approach to understanding the social context of human–wildlife conflict. In: Hill, C. M., Webber, A. D., and Priston, N. E. C. (Eds.), *Understanding conflicts about wildlife: a biosocial approach*. New York: Berghahn. p. 174–204. doi: 10.2307/j.ctvw04h12.11
- Donaldson, S., and Kymlicka, W. (2011). *Zoopolis: A Political Theory of Animal Rights*. Oxford University Press.
- Dressel, S., Sandström, C., and Ericsson, G. (2015). A meta-analysis of studies on attitudes toward bears and wolves across Europe 1976–2012. *Conserv. Biol.* 29, 565–574. doi: 10.1111/cobi.12420
- Echeverri, A., Karp, D. S., Naidoo, R., Zhao, J., and Chan, K. M. (2018). Approaching human-animal relationships from multiple angles: a synthetic perspective. *Biol Conserv.* 224, 50–62. doi: 10.1016/j.biocon.2018.05.015
- Egli, E., Lüthi, B., and Hunziker, M. (2001). Die Akzeptanz des Luchses – Ergebnisse einer Fallstudie im Berner Oberland. *Forest, Snow, Landsc. Res.* 76, 213–228.
- Emery, N. J. (2004). Are corvids ‘feathered apes’? Cognitive evolution in crows, jays, rooks and jackdaws. In: Watanabe, S. (Ed.), *Comparative Analysis of Minds*. Tokyo: Keio University Press. p. 181–213.
- Emery, N. J., and Clayton, N. S. (2004). The mentality of crows: convergent evolution of intelligence in corvids and apes. *Science*. 306, 1903–1907. doi: 10.1126/science.1098410
- Epley, N., Waytz, A., Akalis, S., and Cacioppo, J. T. (2008). When we need a human: Motivational determinants of anthropomorphism. *Soc. Cogn.* 26, 143–155. doi: 10.1521/soco.2008.26.2.143
- Epley, N., Waytz, A., and Cacioppo, J. T. (2007). On seeing human: a three-factor theory of anthropomorphism. *Psychol. Rev.* 114, 864. doi: 10.1037/0033-295X.114.4.864
- Figari, H., and Skogen, K. (2011). Social representations of the wolf. *Acta Sociol.* 54, 317–332. doi: 10.1177/0001699311422090
- Flykt, A., Johansson, M., Karlsson, J., Lindeberg, S., and Lipp, O. V. (2013). Fear of wolves and bears: physiological responses and negative associations in a Swedish sample. *Human Dimen. Wildl.* 18, 416–434. doi: 10.1080/10871209.2013.810314
- Fogassi, L., Ferrari, P. F., Gesierich, B., Rozzi, S., Chersi, F., and Rizzolatti, G. (2005). Parietal lobe: from action organization to intention understanding. *Science*. 308, 662–667. doi: 10.1126/science.1106138
- Gibeau, M. L. (2012). Bears chess and checkers - moving away from pure science to solve problems. *Wildl Profess.* 6, 62–64.
- Glikman, J. A., Vaske, J. J., Bath, A. J., Ciucci, P., and Boitani, L. (2012). Residents’ support for wolf and bear conservation: the moderating influence of knowledge. *Eur. J. Wildl. Res.* 58, 295–302. doi: 10.1007/s10344-011-0579-x
- Gray, H. M., Gray, K., and Wegner, D. M. (2007). Dimensions of mind perception. *Science*. 315, 619–619. doi: 10.1126/science.1134475
- Grinko, M., Ertl, T., Aal, K., and Wulf, V. (2021). Transitions by methodology in human-wildlife conflict-reflections on tech-based reorganization of social practices. In: *LIMITS’21: Workshop on Computing within Limits*.
- Gupta, S., and Sinha, A. (2014). Executive functions as a path to understanding nonhuman consciousness: Looking under the light. In: *Interdisciplinary Perspectives on Consciousness and the Self*. Springer. p. 101–16. doi: 10.1007/978-81-322-1587-5_9
- Hackett, P. M., Schwarzenbach, J. B., and Jürgens, U. M. (2016). *Consumer Psychology: A Study Guide to Qualitative Research Methods*. Berlin: Verlag Barbara Budrich. doi: 10.2307/j.ctvddzsr
- Herzog, O. I. (2019). Der Wolf und das Waldviertel: sozial-ökologische Betrachtung der Mensch-Wolf-Interaktion. (Doctoral Thesis), University of Natural Resources & Life Sciences, Vienna.
- Heyes, C., and Dickinson, A. (1990). The intentionality of animal action. *Mind Langu.* 5, 87–103. doi: 10.1111/j.1468-0017.1990.tb00154.x
- Howe, J. (1981). Fox hunting as ritual. *Am. Ethnol.* 8, 278–300. doi: 10.1525/ae.1981.8.2.02a00040
- Hunziker, M., Egli, E., and Wallner, A. (1998). Return of predators: reasons for existence or lack of public acceptance. *KORA Bericht*. 3, 25–30.
- Jacobs, M. H., Vaske, J. J., Dubois, S., and Fehres, P. (2014). More than fear: role of emotions in acceptability of lethal control of wolves. *Eur. J. Wildl. Res.* 60, 589–598. doi: 10.1007/s10344-014-0823-2
- Johansson, M., and Karlsson, J. (2011). Subjective experience of fear and the cognitive interpretation of large carnivores. *Human Dimens. Wildl.* 16, 15–29. doi: 10.1080/10871209.2011.535240
- Johnson, A. H., and Barrett, J. (2003). The role of control in attributing intentional agency to inanimate objects. *J. Cogn. Cult.* 3, 208–217. doi: 10.1163/1568537032336634
- Jürgens, U. M. (2017). How human-animal relations are realized: from respective Realities to merging minds. *Ethics Environ.* 22, 25–57. doi: 10.2979/ethicsenviro.22.2.02
- Jürgens, U. M., Grinko, M., Szameitat, A., Hieber, L., Fischbach, R., and Hunziker, M. (2022). Managing Wolves is Managing Narratives: Views of Wolves and Nature spawn People’s Proposals for navigating Human-Wolf Relations. Manuscript submitted for publication.
- Jürgens, U. M., and Hackett, P. M. (2017). The big bad wolf: the formation of a stereotype. *Ecopsychology*. 9, 33–43. doi: 10.1089/eco.2016.0037
- Jürgens, U. M., and Hackett, P. M. (2021). Wolves, crows, and spiders: an eclectic literature review inspires a model explaining humans’ similar reactions to ecologically different wildlife. *Front. Environ. Sci.* 9, 3. doi: 10.3389/fenvs.2021.593501
- Kaltenborn, B. P., and Bjerke, T. (2002). The relationship of general life values to attitudes toward large carnivores. *Human Ecol. Rev.* 9, 55–61.
- Kellert, S. R. (1980). Contemporary values of wildlife in American society. In: Shaw, W. W., and Zube, E. H. (Eds.), *Wildlife values: U.S. Forest Service Rocky Mt Forest and Range Experiment Station, Center for Assessment of Noncommodity Natural Resource Values, Fort Collins, Colorado*. Vol. Institutional Series Report, p. 31–60.
- Klaver, I., Keulartz, J., and Van Den Belt, H. (2002). Born to be wild: a pluralistic ethics concerning introduced large herbivores in the Netherlands. *Environ. Ethics*. 24, 3–21. doi: 10.5840/enviroethics200224138
- Knight, A. J. (2008). “Bats, snakes and spiders, Oh my!” How aesthetic and negativistic attitudes, and other concepts predict support for species protection. *J. Environ. Psychol.* 28, 94–103. doi: 10.1016/j.jenvp.2007.10.001
- Knight, J. (2000). *Chapter 1 Introduction*. In: Knight, J. (Ed.), *Natural Enemies, People-Wildlife Conflicts in Anthropological Perspective*. London: Routledge.
- Kotulski, Y., and König, A. (2008). Conflicts, crises and challenges: wild boar in the Berlin City—a social empirical and statistical survey. *Nat. Croat.* 17, 233–246.
- Lamnek, S. (2006). *Qualitative Sozialforschung*. Weinheim: Beltz.
- Latour, B. (2012). *Das Parlament der Dinge (2 ed.)*. Frankfurt am Main: Suhrkamp.
- Lescureux, N., and Linnell, J. D. (2010). Knowledge and perceptions of Macedonian hunters and herders: the influence of species specific ecology of bears, wolves, and lynx. *Human Ecol.* 38, 389–399. doi: 10.1007/s10745-010-9326-2
- Lestel, D. (2011). What capabilities for the animal? *Biosemiotics*. 4, 83–102. doi: 10.1007/s12304-010-9109-6
- Lindquist, G. (2000). The wolf, the Saami and the urban shaman. In: Knight, J. (Ed.), *Natural Enemies - People-Wildlife Conflicts in Anthropological Perspective*. London: Routledge. p. 170–88.
- Low, J. (2019). A pragmatic definition of the concept of theoretical saturation. *Sociol. Focus*. 52, 131–139. doi: 10.1080/00380237.2018.1544514
- Low, P. (2012). *The Cambridge Declaration on Consciousness*. Paper presented at the Francis Crick Memorial Conference on Consciousness in Human and non-Human Animals, Churchill College, University of Cambridge.
- Lute, M. L., Carter, N. H., López-Bao, J. V., and Linnell, J. D. (2018). Conservation professionals agree on challenges to coexisting with large carnivores but not on solutions. *Biol. Conserv.* 218, 223–232. doi: 10.1016/j.biocon.2017.12.035

- Margulies, J. D., and Karanth, K. K. (2018). The production of human-wildlife conflict: a political animal geography of encounter. *Geoforum*. 95, 153–164. doi: 10.1016/j.geoforum.2018.06.011
- Marvin, G. (2010). Wolves in sheep's and other clothing. *Bestly Nat.* 59–78.
- Masilkova, M., Ježek, M., Silovský, V., Faltusová, M., Rohla, J., Kušta, T., et al. (2021). Observation of rescue behaviour in wild boar (*Sus scrofa*). *Sci. Rep.* 11, 1–9. doi: 10.1038/s41598-021-95682-4
- McCarthy, J. (2002). First World political ecology: lessons from the Wise Use movement. *Environ. Plann. A*. 34, 1281–1302. doi: 10.1068/a3526
- Mey, G., and Mruck, K. (2011). *Grounded Theory Reader* (Vol. 2). Wiesbaden: Springer. doi: 10.1007/978-3-531-93318-4
- Mills, D. S. (2010). Anthrozoology. In: Mills, D. S., and Marchant-Forde, J. N. (Eds.), *The encyclopedia of applied animal behaviour and welfare*. Wallingford: CAB Int. pp. 28–30. doi: 10.1079/9780851997247.0000
- Miltner, W. H., Krieschel, S., Hecht, H., Trippe, R., and Weiss, T. (2004). Eye movements and behavioral responses to threatening and nonthreatening stimuli during visual search in phobic and nonphobic subjects. *Emotion*. 4, 323. doi: 10.1037/1528-3542.4.4.323
- Mondini, M., and Hunziker, M. (2018). Psychological factors influencing human attitudes towards brown bears: a case study in the swiss alps. *Umweltpsychologie*. 22, 8–29.
- Nair, R., Patil, O., Surve, N., Andheria, A., Linnell, J. D., and Athreya, V. (2021). Sharing spaces and entanglements with big cats: the warli and their Waghoba in Maharashtra, India. *Front. Conserv. Sci.* 2, 683356. doi: 10.3389/fcosc.2021.683356
- Nie, M. A. (2001). The sociopolitical dimensions of wolf management and restoration in the United States. *Human Ecol. Rev.* 8, 1–12.
- Nygren, A., and Rikoon, S. (2008). Political ecology revisited: integration of politics and ecology does matter. *Soc. Nat. Resour.* 21, 767–782. doi: 10.1080/08941920801961057
- Oevermann, U. (2001). Zur Analyse der Struktur von sozialen Deutungsmustern. *Sozialer Sinn*. 2, 3–33. doi: 10.1515/sosi-2001-0102
- Öhman, A., and Mineka, S. (2001). Fears, phobias, and preparedness: toward an evolved module of fear and fear learning. *Psychol. Rev.* 108, 483. doi: 10.1037/0033-295X.108.3.483
- Owen-Smith, N., Kerley, G. I. H., Page, B., Slotow, R., and van Aarde, R. J. (2006). A scientific perspective on the management of elephants in the Kruger National Park and elsewhere. *South African J. Sci.* 102, 389–394.
- Pates, R., and Leser, J. (2021). *The Wolves are Coming Back: The Politics of fear in Eastern*. Germany: Manchester University Press. doi: 10.7765/9781526150233
- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods (3rd Edition ed.)*. Thousand Oaks: Sage.
- Peterson, M. N., Birkhead, J. L., Leong, K., Peterson, M. J., and Peterson, T. R. (2010). Rearticulating the myth of human-wildlife conflict. *Conserv. Lett.* 3, 74–82. doi: 10.1111/j.1755-263X.2010.00099.x
- Poerting, J., and Marquardt, N. (2019). Kritisch-geographische Perspektiven auf Landschaft. In: *Handbuch Landschaft*. Wiesbaden: Springer. pp. 145–52. doi: 10.1007/978-3-658-25746-0_11
- Pooley, S., Barua, M., Beinart, W., Dickman, A., Holmes, G., Lorimer, J., et al. (2017). An interdisciplinary review of current and future approaches to improving human-predator relations. *Conserv. Biol.* 31, 513–523. doi: 10.1111/cobi.12859
- Pooley, S., Bhatia, S., and Vasava, A. (2021). Rethinking the study of human-wildlife coexistence. *Conserv. Biol.* 35, 784–793. doi: 10.1111/cobi.13653
- Prete, F. R. (2004). *Complex Worlds from Simpler Nervous systems*. MIT Press. doi: 10.7551/mitpress/1994.001.0001
- Reber, A. S. (2016). Catterpillars, Consciousness and the origins of mind. *Animal Senti.* 10. doi: 10.51291/2377-7478.1124
- Rowlands, M. (2016). Are animals persons? *Animal Senti.* 1, 1–18. doi: 10.51291/2377-7478.1110
- Ryan, R. M., and Deci, E. L. (2000). Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemp. Educ. Psychol.* 25, 54–67. doi: 10.1006/ceps.1999.1020
- Sevillano, V., and Fiske, S. (2019). Animals as social groups: an intergroup relations analysis of human-animal conflicts. In: Dhont, K., and Hodson, G. (Eds.), *Why We Love and Exploit Animals: Bridging Insights from Academia and Advocacy*. Abingdon: Routledge. p. 254–276. doi: 10.4324/9781351181440-16
- Shettleworth, S. J. (2001). Animal cognition and animal behaviour. *Animal Behav.* 61, 277–286. doi: 10.1006/anbe.2000.1606
- Shettleworth, S. J. (2009). *Cognition, evolution, and behaviour*. Oxford University Press.
- Siddiq, A. B., and Habib, A. (2016). Anthrozoology—an emerging robust multidisciplinary subfield of anthropological science. *Green Univ. Rev. Soc. Sci.* 3, 45–67.
- Siemer, W. F., Jonker, S. A., Decker, D. J., and Organ, J. F. (2013). Toward an understanding of beaver management as human and beaver densities increase. *Human-Wildl. Interact.* 7, 114–131.
- Slagle, K. M., Bruskotter, J. T., and Wilson, R. S. (2012). The role of affect in public support and opposition to wolf management. *Human Dimens. Wildl.* 17, 44–57.
- Slagle, K. M., Wilson, R. S., Bruskotter, J. T., and Toman, E. (2019). The symbolic wolf: a construal level theory analysis of the perceptions of wolves in the United States. *Soc. Nat. Resour.* 32, 322–337. doi: 10.1080/08941920.2018.1501525
- Stauder, J., Favilli, F., Stawinoga, A. E., Omizzolo, A., and Streifeneder, T. P. (2020). The attitude of society to the return of the wolf in South Tyrol (Italy). *Eur. J. Wildl. Res.* 66, 1–11. doi: 10.1007/s10344-020-1372-5
- Stern, P. C., and Dietz, T. (1994). The value basis of environmental concern. *J. Soc. Issues*. 50, 65–84. doi: 10.1111/j.1540-4560.1994.tb02420.x
- Teel, T. L., and Manfredi, M. J. (2010). Understanding the diversity of public interests in wildlife conservation. *Conserv. Biol.* 24, 128–139. doi: 10.1111/j.1523-1739.2009.01374.x
- Thompson, S. C. G., and Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *J. Environ. Psychol.* 14, 149–157. doi: 10.1016/S0272-4944(05)80168-9
- Treves, A., and Karanth, K. U. (2003). Human-carnivore conflict and perspectives on carnivore management worldwide. *Conserv. Biol.* 17, 1491–1499. doi: 10.1111/j.1523-1739.2003.00059.x
- Urquiza-Haas, E. G., and Kotrschal, K. (2015). The mind behind anthropomorphic thinking: attribution of mental states to other species. *Animal Behav.* 109, 167–176. doi: 10.1016/j.anbehav.2015.08.011
- von Uexküll, J. (1909). *Umwelt und Innenwelt der Tiere*. Berlin: Verlag Julius Springer.
- Wade, M. L. (1990). Animal liberationism, ecocentrism, and the morality of sport hunting. *J. Philos. Sport.* 17, 15–27. doi: 10.1080/00948705.1990.9714475
- Waytz, A., Gray, K., Epley, N., and Wegner, D. M. (2010). Causes and consequences of mind perception. *Trends Cogn. Sci.* 14, 383–388. doi: 10.1016/j.tics.2010.05.006

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