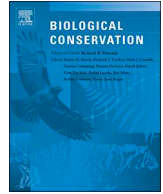




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Conservationists' moral obligations toward wildlife: Values and identity promote conservation conflict

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ABSTRACT

Recent debate among scholars reveals potential rifts in the conservation community concerning the moral bases of conservation, and the nature of humanity's obligations to nature. We reasoned that conflict within the conservation community could stem both from divergent values and identification with relevant interest groups. We used secondary data from three recent studies that quantify wildlife value orientations, belief in the intrinsic value of wildlife, and perceived moral obligations to wildlife among US residents and self-identified conservationists. Results indicate the vast majority (> 75%) of conservationists both endorse the idea that wildlife possess intrinsic value, and that humans have an obligation to treat wild animals with concern for their welfare – ideas that are consistent with, though not unique to, compassionate conservation. Further, we found that both mutualism value orientations and identification with other interest groups relevant to conservation (e.g., animal rights, hunting) were moderately correlated with beliefs about an individuals' obligations toward wildlife—providing evidence that both values and identity are sources of social conflict within the conservation community. Identity could provide a mechanism linking individual-level, cognitive processes with group-level processes (e.g. immersion) that promote both within-group conformity and between-group conflict, but more research is needed to unravel causality.

1. Introduction

The field of conservation biology emerged as a “crisis discipline” during the 1980s in response to sustained biodiversity loss largely attributable to human activities. An early vision for conservation biology outlined by Soulé (1985) differed markedly from the dominant paradigm in traditional resource management fields (e.g., forestry, wildlife), especially with respect to how those fields dealt with humankind's obligation to the non-human environment (Meine et al., 2006). In contrast to traditional resource management fields, which can be characterized as morally agnostic and implicitly anthropocentric with respect to nature (Bruskotter et al., 2017), Soulé's early vision for conservation biology outlined normative postulates that recognized a direct moral obligation to nature – that is, an obligation to conserve nature even in cases where doing so does not directly benefit human wellbeing. Soulé's vision also rested on the presumption that these ideas

were shared, if not by the general public, at least by most conservationists and professional biologists (Soulé, 1985). These postulates are still reflected in the organizational values of the *Society for Conservation Biology*, which include the proposition that “[t]here is intrinsic value in the natural diversity of organisms, the complexity of ecological systems, and the resilience created by evolutionary processes” (SCB, conbio.org/about-scb/who-we-are/).

However, recent debates among scholars suggest this early vision of the moral bases of conservation biology might not be as widely shared today as Soulé (1985) implied. Indeed, this vision was challenged by “new conservationists” (Kareiva et al., 2012; Kareiva and Marvier, 2011) who contend that the idea of “protecting biodiversity or nature for its intrinsic value...[is] inspiring for relatively narrow segments of the population, particularly those who self-identify as conservationists and environmentalists” (Marvier, 2014). According to Marvier (2014), the crux of new conservationists' concern is the extent to which

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conservation should be linked to human self-interest. New conservationists, much like those who started the conservation movement of the early 20th Century (Pinchot, 1910), see a greater role for human self-interest in promoting conservation (Kareiva, 2014).

In contrast with new conservationists' focus on human interests, some scholars argue that conservation's traditional focus on promoting biodiversity has not adequately considered how our actions impact the interests and welfare of individual organisms (Draper and Bekoff, 2013; Ramp and Bekoff, 2015; Wallach et al., 2018, 2015). These 'compassionate conservationists' invoke greater concern for and interest in individual organisms as a guiding principle of conservation—recognizing that individual organisms, as well as ecological collectives possess intrinsic value (for discussion see: Batavia and Nelson, 2017; Vucetich et al., 2015).¹

These three visions for conservation necessarily affect the very purpose and meaning of conservation, as well as how decision-makers adjudicate tradeoffs inherent to conservation practice. To illustrate, consider how professionals holding these differing views might respond to an invasive species that is exacerbating the extinction risk of a native species. We might expect a traditional conservationist to be most concerned with the threat to the native species because that species has evolved to provide a particular function in that ecosystem. The traditional conservationist might propose killing individuals of the invasive species, because they believe the native species (and the functions they serve) are more important than individuals of the invasive species. In contrast, a compassionate conservationist may counter that it is wrong to kill individual organisms—even invasive species—especially if killing the invasive species is unlikely to save the native species. Last, a new conservationist might try to measure the economic value of the services provided by the native species and use that as justification for efforts to eradicate the invasive; or they may find that the native species has little value to humans and advocate focusing conservation attention elsewhere. This example illustrates—albeit heuristically—how differing visions of conservation could lead to dramatically different types of conservation actions.

Adjudicating the appropriateness of conservation actions requires some understanding of how different groups perceive humanity's moral obligations toward nature. Do they feel obligated only to consider the interests of other humans? Do they feel obligated to respect and conserve ecological collectives (e.g., populations, species)? What about the interests and welfare of individual non-human organisms? And when, if ever, does any one of these obligations supersede the others? Understanding how conservationists perceive humanity's obligations toward nature is (i) important for negotiating tradeoffs in decision-making when obligations are in conflict, (ii) a prerequisite for identifying morally-just forms of conservation (Trevés et al., 2019; Vucetich et al., 2018; Washington et al., 2018), and (iii) a means of providing insight into the very meaning of conservation.

Understanding the extent to which conservationists' views differ from the general public and other relevant interest groups (e.g., farmers) is equally important because the advocacy (and apathy) of such groups can impact conservation actions. Ultimately, these differences manifest as conservation conflicts; that is, social conflicts between groups over appropriate conservation actions (Peterson et al., 2010; Redpath et al., 2013). Where conservationists' views differ appreciably from the general public (or other interest groups) we should expect the goals of the conservation community to be more frequently stymied. Identification of such points of conflict may help

¹ Note, compassionate conservation is a relatively new expression. As such, that expression is not yet fully articulated. Here we attempted to summarize compassionate conservation as fairly as it can be given the existing literature, and need for brevity. In time, we expect that literature to evolve and respond to what may at present seem to be unanswered questions about how to adjudicate complicated conflicts between animal welfare and conservation."

conservationists anticipate where conflicts will emerge and use resources more efficiently.

Although conservation professionals' views on the new conservation debate were recently quantified by Sandbrook and colleagues (Sandbrook et al., 2019), this study did not assess conservationists' views about animal welfare nor did it provide a theoretical framework for understanding the origins of conservation conflicts. Our study sought to (i) outline a general framework for understanding two sources of conservation conflicts – i.e., conflicting values and competing identities, and (ii) characterize differences concerning human obligations toward nature both among self-identified conservationists, and between conservationists and non-conservationists. We first provide brief explanations of theories concerning how and why values shift across societies and how values relate to social conflict, and how identification with social groups can act to reinforce values, thereby amplifying conflicts between groups.

1.1. Understanding conservation conflicts: values and identity

The research of Inglehart and colleagues explains how social conflicts have been exacerbated by societal value shift. Inglehart (1997) proposed that improved social and economic conditions in post-industrialized societies following the Second World War fostered a reduction in existential threats that ultimately served to shift human values away from a focus on meeting basic needs toward greater emphasis on individual autonomy and self-expression. Time-series data collected in dozens of countries since the 1970s supports this general thesis: as social and economic conditions improve, societal values emphasizing materialist concerns lessen, while those emphasizing autonomy and self-expression increase (Inglehart, 1997; Inglehart and Welzel, 2005; Inglehart, 2018). Such shifts in values within societies create social environments that are ripe for conflict. As Inglehart and Welzel (2005) explain, "rising self-expression values bring an emancipation from authority: people increasingly tend to reject external authority that encroaches on individual rights" (p.26).

Research on wildlife value orientations (WVOs) is largely consistent with the work of Inglehart, and helps explain how value shift can exacerbate conservation conflicts. In particular, Manfredo and colleagues (Dietsch et al., 2016; Manfredo et al., 2016, 2009) demonstrate how wildlife-related values in the United States are shaped by modernization—that is, social forces that increase human well-being (i.e., increased education, income and urbanization), and have precipitated a shift in values over time. Specifically, their research shows that modernization is associated with increased "mutualism" values. Mutualism places emphasis on human compassion and care of wild animals, whereby wildlife is viewed as part of one's community. In contrast, modernization is negatively associated with "domination" values, which reflect the idea that wildlife occupy a subordinate role to humans, whereby their welfare is relevant primarily to the extent that their use benefits humans (Manfredo et al., 2009). The divergence between those espousing strong mutualist and domination orientations creates a broad source of social conflict in wildlife conservation—conflict rooted to fundamental ideals concerning how humans should relate with nature.

Other research shows that value conflicts over conservation are not limited to the general public. For example, Heeren and colleagues show that conservation professionals vary in the extent to which they express these values, and that variation is associated with differences in their judgements about conservation policy (Heeren et al., 2017).

To summarize, individuals within societies possess different conservation-related values, and those values exhibit geographic variation, due in part to variability in the social conditions that drive values (Dietsch et al., 2016). Those value differences can result in conflicts (between individuals) about conservation—a fact widely appreciated by conservation professionals. But values are not limited solely to individuals. Importantly, values are increasingly understood to be a

hierarchical phenomenon that can be used to characterize individuals, as well as societies, organizations, and formal and informal social groups (Erez and Gati, 2004; Manfredi et al., 2017).

To gain a sense of the multi-level, interlocking nature of values, consider the concepts, *emergence* and *immersion*. *Emergence* is a process by which higher levels of an attribute (e.g., the collective values a social group such as members of a conservation NGO) form from the interaction and organization of lower-level entities (e.g., individual members of that NGO) (see Hodgson 2000). In essence, the group develops attributes (e.g., values, attitudes, norms) that are more than just the sum of the attributes of its members. These attributes, including shared values, norms, and attitudes, become idealized concepts that exert a pressure on members via a ‘downward’ process known as *immersion*. An illustration – easy to grasp, if not overly simplified – is when an individual espouses attitudes or behaviors more extreme than their own when in the presence of other group members.

Social identity theory offers valuable insights concerning the relationship between groups and individuals that is useful for understanding how groups impact the values, norms and attitudes of their members. Tajfel and Turner (1979) argued that individuals evaluate the importance of their *ingroups* in relation to relevant *outgroups*. Over time and through interactions with various group members (both in and out), individuals form “prototypes” of social groups. A prototype “...not only describes what it is to be a group member, but also prescribes what kinds of attitudes, emotions and behaviors are appropriate in a given context” (Hornsey, 2008, p. 209, emphasis added). Mechanistically, when a group identity is activated or becomes salient, group prototypes provide individuals with information about ideal ways that group members think and behave, exerting pressure on individuals to conform with group expectations (i.e., to think and behave in prototypical ways). Immersion occurs when individuals belonging to a group mimic prototypical behavior of that group (Conte, 2007).

Further support for the importance of identity for connecting individuals and groups is found in evolutionary explanations for how group-specific moral systems and associated behaviors emerge and change over time (McElreath, Boyd, & Richerson, 2003; Richerson & Henrich, 2012; Smaldino, 2017). Collectively, these studies suggest groups are crucial in the formation and maintenance of moral systems.

Social identity theory is increasingly employed both to better understand conservation conflicts, (e.g. Lute et al., 2014; Lute and Gore, 2019; van Eeden et al., 2019) and as a means to uncover beliefs and values that transcend group conflict, and could become a source for building shared identities (Lute and Gore, 2018). An important goal of this study is to go beyond the widely appreciated notion that conservation conflicts arise from the possession of different values by different *individuals* and to recognize that such values may represent group-level ‘cultural traits’ (Smaldino, 2014), that are reinforced by identity. Herein we explore how values related to the protection and use of wild animals (i.e., WVOs) and perceived moral obligations toward wildlife differ between individuals who identify with various types of conservation interest groups.

2. Materials and methods

2.1. Data collection

Data were collected in three online surveys conducted between 2014 and 2016 via the Qualtrics platform (a tool for administering surveys online). Data collection methods for each of these surveys is detailed in prior publications (George et al., 2016; Heeren et al., 2017; Slagle et al., 2017, 2019) and discussed briefly below. To our knowledge, these studies represent the only existing research that both (i) simultaneously assesses value orientations, relevant social identities, and perceived obligations concerning wildlife, and (ii) is national in scope.

Study 1. The first survey (hereafter, US 2014 data) targeted adult

residents of the U.S., and was collected over 11 days in February of 2014 using Growth for Knowledge’s (GfK’s) online *KnowledgePanel* (for details on panel generation and sampling, see Berrens, Bohara, Jenkins-Smith, Silva, & Weimer, 2003; The GfK Group, 2013). The sample was stratified regionally based upon federally delineated gray wolf management units, and weighted to demographically reflect the adult U.S. population using benchmarks from the US Census Bureau’s American Community Survey (see Slagle et al., 2017 for detailed description of stratification and weighting procedures). We received 1287 responses, representing a response rate of 64%.

Study 2. Data on conservation professionals—that is, people who work in the field of wildlife conservation—(hereafter, Pro 2014 data) were collected in a December 2014 study focused on the conservation and management of grizzly/brown bears (see Heeren et al., 2017 for details). Briefly, we created a list of authors (and co-authors) who published research on grizzly bears or brown bears in the peer-reviewed literature over a 10-year period, noting contact information from each author’s most recently published article. We then pooled this list with a list of members of the Interagency Grizzly Bear Committee (a committee comprised of conservation professionals charged with providing advice on grizzly bear management in the U.S.). During December 2014, we sent a survey link to all 1216 professionals for whom we could find email contact information. In total, 590 professionals received and opened our email, of which, 234 responded (adjusted response rate = 40%; see Heeren et al., 2017 for additional details).

Study 3. We used similar data collection procedures in 2016, targeting adult residents of the U.S. (hereafter, US 2016 data). Again, we used GfK’s online *KnowledgePanel* to contact potential respondents over a 17-day period in late July and early August of 2016, and received an overall response rate of 62% (U.S. n = 397). As in Study 1, data were weighted using benchmarks from American Community Survey.

2.2. Measurement

In each study we assessed respondents’ levels of identification with various conservation-relevant groups via a 5-point scale that allowed respondents to identify with multiple groups at levels ranging from “not at all” to “very strongly” (see Online Supplement, Table 1).

WVOs (Teel & Manfredi, 2010) were measured on a 7-point bi-polar response scale (ranging from “strongly agree” to “strongly disagree”), with the full set of 19 items assessed in the US 2016 data, and a reduced set of 7 items used in the Pro 2014 and US 2014 data (see Online Supplement, Table 1). To reduce respondent burden in the 2016 survey, we randomized presentation of items such that all respondents answered approximately three-fourths of the full set of questions (one-fourth of responses are missing completely at random). We calculated WVOs by computing means across all non-missing items in each dimension (i.e., mutualism and domination). Scale reliability was high for WVO dimensions (i.e., Cronbach’s alpha > 0.70 for unweighted US 2016 data) and the reduced (7-item) scales of mutualism and domination correlated strongly with the full scales (Pearson’s $r = 0.87$ and 0.73 , respectively; see Online Supplement, Table 1).

We assessed respondents’ perceived moral obligations toward wildlife via (i) a two-item measure designed to assess the extent to which respondents believe that wildlife possess intrinsic value, and (ii) a set of five items expressing various types of duties or obligations toward animals.

The belief that wildlife possess intrinsic value was assessed through an *intrinsic* value item (expressing support for the idea that wildlife are inherently valuable independent of their use by humans), and an *instrumental* item (expressing support for the idea that wildlife are only valuable if people get to use them)—see Vucetich et al. (2015). Those items appeared in all three studies, and were assessed on 5-point bipolar response scales (ranging from strongly disagree to strongly agree) in the 2014 studies and a 7-point bipolar scale in the 2016 study (see Online Supplement, Table 1). Respondents were classified into the

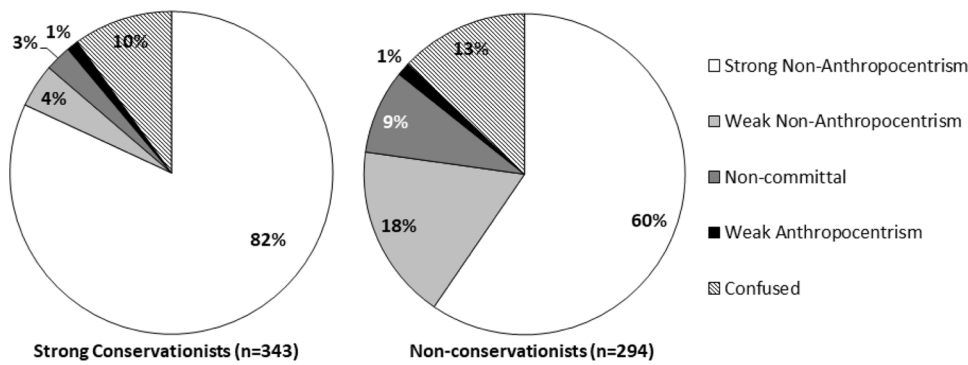


Fig. 1. Classification of people based on their responses to two items measuring intrinsic (i.e., non-anthropocentrist) and instrumental (i.e., anthropocentrist) value among (a) those who identify “strongly” or “very strongly” as conservationists (n = 343) and (b) non-conservationists (n = 294) in a 2014 survey of adult U.S. residents. (Note: No respondents were classified as “strong anthropocentrists”).

following categories according to their responses to these two items:

- (1) *strong non-anthropocentrist* (endorsed intrinsic value, rejected instrumental value),
- (2) *weak non-anthropocentrist* (endorsed intrinsic value, neutral on instrumental value),
- (3) *non-committal* (neutral on both values),
- (4) *weak anthropocentrist* (rejected intrinsic value, neutral on instrumental value),
- (5) *strong anthropocentrist* (rejected intrinsic value, endorsed instrumental value) and
- (6) *inconsistent* (endorsed both intrinsic and instrumental value items).

Items assessing human duties/obligations toward wild and domestic animals appeared in two separate banks and were measured on 5-point or 7-point scales, and collapsed to “agree”, “neutral” and “disagree” for subsequent analyses).

2.3. Analyses

We use frequencies to describe study populations in terms of their

(i) extent of identification as “conservationists”, (ii) belief that wildlife possess intrinsic value, and (iii) expressed obligations/duties toward wild and domestic animals. We use Pearson’s correlation coefficient to assess the relationship between respondents’ identities, WVOs, and obligations toward wildlife.

3. Results

Across the US 2014 and US 2016 datasets, we found strong majorities of Americans (76.7% and 79.4%, respectively) at least slightly identified as conservationists, while roughly one in four (27.1% and 24.9%, respectively) identified strongly or very strongly as conservationists. In contrast, we found that among conservation professionals, nearly all respondents (96.1%) identified at least slightly as conservationists, and nearly four-in-five (79.6%) identified strongly or very strongly as conservationists.

Among Americans in the US 2014 dataset who self-identified “strongly or “very strongly” as conservationists, we found the vast majority (82%) were classified as “strong non-anthropocentrists”; that is, the public endorsed the idea that wild animals possess intrinsic value and disagreed with the idea that wild animals are only instrumentally

Table 1
Americans’ assessments of humanity’s obligations toward wild and domestic animals by the extent to which they identify as conservationists.^a

Response Item		Extent to which respondent identified as a Conservationist			Difference (Strong – Not at all)
		Not at all	Slight/ Moderate	Strong/ Very Str.	
People have a duty to conserve wild animals for future generations.	Disagree	5.6%	5.1%	1.6%	– 4.0%
	Neutral	25.9%	17.2%	6.3%	– 19.6%
	Agree	68.5%	77.7%	92.1%	23.6%
	n	54	157	63	n = 274
Humans have no moral obligation toward wild animals.	Disagree	76.1%	71.5%	79.0%	2.9%
	Neutral	0.0%	2.5%	4.9%	4.9%
	Agree	23.9%	25.9%	16.0%	– 7.9%
	n	67	158	81	n = 306
Humans have an obligation to treat wild animals with at least some regard for their welfare.	Disagree	40.0%	24.4%	6.4%	– 33.6%
	Neutral	13.8%	25.6%	17.9%	4.1%
	Agree	46.2%	50.0%	75.6%	29.4%
	n	65	180	78	n = 323
People have a duty to avoid actions that harm individual animals.	Disagree	0.0%	7.6%	11.8%	11.8%
	Neutral	32.8%	29.7%	13.2%	– 19.6%
	Agree	67.2%	62.7%	75.0%	7.8%
	n	58	158	76	n = 292
People have a duty to look after the well-being of their pets and livestock.	Disagree	40.0%	24.9%	6.4%	– 33.6%
	Neutral	13.8%	25.4%	17.9%	4.1%
	Agree	46.2%	49.7%	75.6%	29.5%
	n	65	152	69	n = 286

^a Data were collected in 2016 and weighted to reflect the demographics of the adult population of the United States.

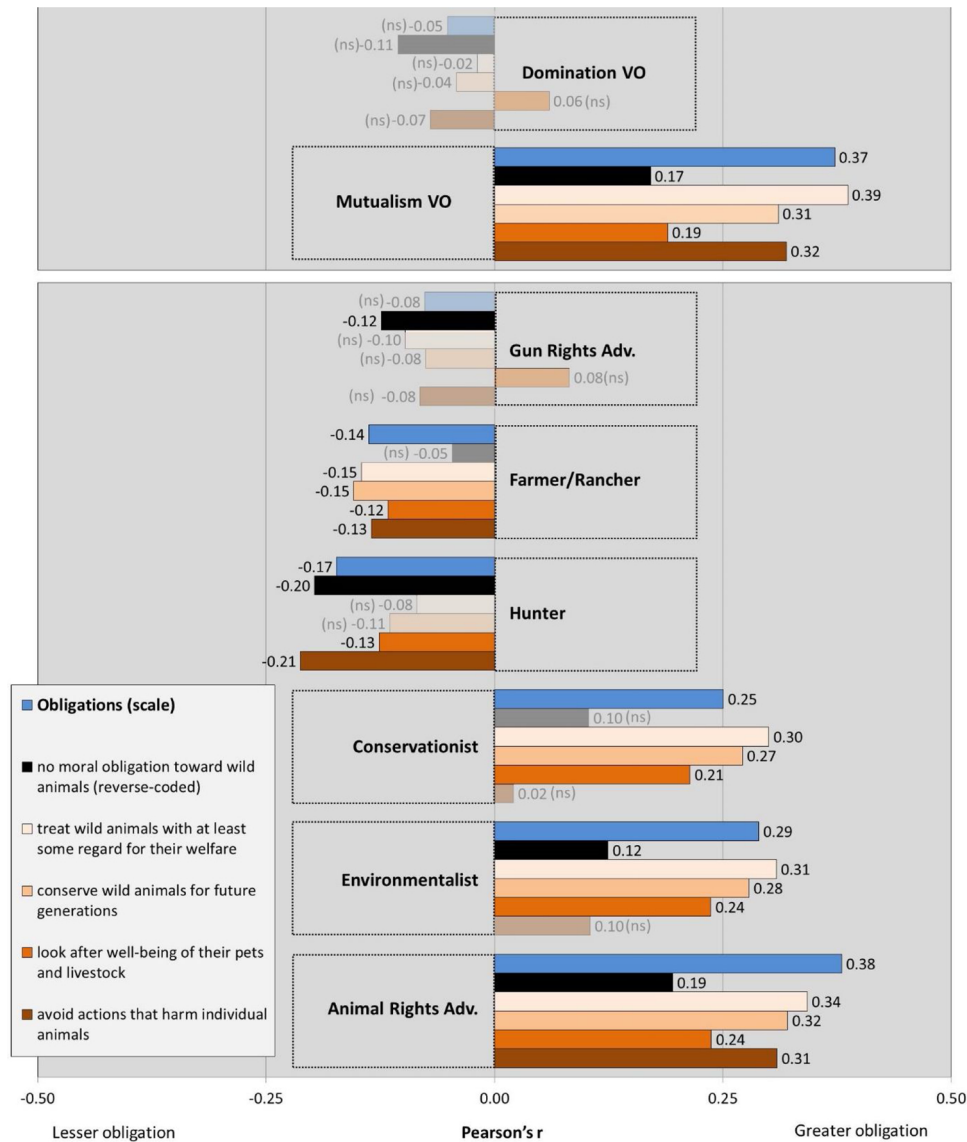


Fig. 2. The association (Pearson's r) between six measures of identity, wildlife value orientations and obligations toward wild and domestic animals among adult U.S. residents in 2016. Non-significant correlations ($p > 0.05$) are marked "(ns)"; all other correlations are significant ($p < 0.05$).

valuable (Fig. 1). Significantly fewer non-conservationists, though still a majority (60%), were also classified as strong non-anthropocentrists (Fig. 1). (Professionals—nearly all of whom identified as conservationists—responded similarly; i.e., 89% were also strong non-anthropocentrists [not depicted in Fig. 1]).

Other differences include a greater number of non-conservationists than conservationists who were classified as weak non-anthropocentrists (18% vs. 4%, respectively) and non-committal (9% vs 3%, respectively). Less than 1% of either non-conservationists or conservationists identified as either a *weak* or *strong anthropocentrist*, though 10% of conservationists and 13% of non-conservationists were classified as *inconsistent* due to agreement with both items.

The idea that humans have at least some moral obligation to wild animals was overwhelmingly endorsed by both conservationists and non-conservationists within the American public (US 2016 data); only 16% of conservationists and 24% of non-conservationists agreed that humans have *no* obligation toward wild animals (Table 1). Likewise, the majority of conservationists and non-conservationists agreed with the socially-altruistic idea that humans have an obligation to conserve wild animals for future generations (92% and 69%, respectively) and to avoid actions that harm individual animals (74% and 67%,

respectively) (Table 1). However, a majority of conservationists (76%) and only a plurality of non-conservationists (46%) agreed that humans have an obligation to treat wild animals with at least some regard for their welfare; likewise, the notion that humans have a duty to look after the well-being of their pets and livestock was supported by similar percentages of conservationists and non-conservationists (75%, and 46%, respectively) (Table 1). Thus, while self-identified conservationists generally endorsed obligations consistent with animal welfare, these ideas appeared to be more divisive among non-conservationists.

Using the US 2016 data, we found that mutualism and moral obligations were positively associated with all five moral obligation items, while domination was not significantly related to any of these items (Fig. 2). Furthermore, identification as a conservationist, environmentalist, or animal rights activist was positively associated (Pearson's r for scale = 0.25, 0.29, and 0.38, respectively; Fig. 2) with a scaled variable representing moral obligations to animals, while identification as a hunter, farmer/rancher, or gun rights advocate was generally negatively associated with the scaled measure of moral obligations (Pearson's r for scale = -0.19, -0.16, -0.08 ns, respectively).

A similar pattern emerged in the relationship between group identities and WVOs across datasets. Though the strength of the

Table 2
Association between Wildlife Value Orientations and group identities in three populations. Negative values are shown in bold.

Extent to which respondent identified as a...	Wildlife Value Orientations					
	Domination Orientation			Mutualism Orientation		
	2014 (reduced) U.S. Residents	Professionals (reduced)	2016 (full) U.S. Residents	2014 (reduced) U.S. Residents	Professionals (reduced)	2016 (full) U.S. Residents
Environmentalist	-0.28 ***	-0.22 **	-0.17 ***	0.19 ***	0.22 **	0.34 ***
Animal Rights Advocate	-0.30 ***	-0.20 **	-0.36 ***	0.40 ***	0.28 ***	0.55 ***
Wildlife Advocate	-0.23 ***	-0.04 ns	NA	0.29 ***	0.18 **	NA
Conservationist	-0.12 ***	-0.11 ns	-0.09 ns	0.12 ***	0.26 **	0.31 ***
Hunter	0.18 ***	0.48 ***	0.28 ***	-0.05 ns	-0.14 *	-0.16 **
Gun Rights Advocate	0.23 ***	0.36 ***	0.37 ***	-0.05 ns	-0.11 ns	-0.12 *
Farmer/Rancher	0.10 ***	NA	0.04 ns	0.00 ns	NA	-0.01 ns
Property Rights Advocate	0.27 ***	0.22 ***	NA	-0.05 ns	-0.02 ns	NA

Notes: Scale values were computed by averaging all items in the scale. The 2014 surveys contained a limited set of WVO measures (i.e., 7 items), whereas the 2016 survey used all 19 items. The 2014 and 2016 surveys targeted adult U.S. residents and were weighted to reflect the demographics of the U.S. population as captured by the U.S. Census Bureau’s American Community Survey. The professionals survey targeted scientists from around the world who published research about grizzly/brown bears over a 10-year time period.

+p = 0.051.
*** p ≤ 0.001.
** p ≤ 0.01.
* p ≤ 0.05.

relationships varied across these datasets, a consistent pattern emerged whereby identifying as an environmentalist, wildlife advocate, animal rights advocate, or conservationist was positively associated with mutualism and negatively associated with domination (Table 2). Conversely, identification as a hunter, property rights advocate, or gun rights advocate exhibited the opposite pattern – i.e., generally these identities were positively associated with domination and negatively associated (albeit weakly) with mutualism. Identification as a farmer/rancher was generally not significantly associated with either value orientation.

Finally, we examined the relationship between WVOs and group identity among respondents who strongly or very strongly identified as conservationists (n = 95) in the US 2016 data. We found strong identification as a conservationist increases the strength of the relationships between WVOs and other, conservation-relevant group identities (Fig. 3). Put simply, simultaneous identification as a conservationist and with another type of relevant interest group (e.g., hunter, environmentalist) appears to promote conflicting value types (i.e.,

opposing signs with mutualism and domination value orientations) among self-identified conservationists.

4. Discussion

Considerable debate within the conservation community concerns the extent to which conservation should be generally focused on human interests versus the interests of non-human organisms (Draper and Bekoff, 2013; Kareiva et al., 2012; Kareiva and Marvier, 2011; Kopnina et al., 2018; Marvier, 2014; Miller et al., 2014; Soulé, 2014). Our data show self-identified conservationists and non-conservationists alike broadly endorse the idea that wild animals possess intrinsic value, and reject the idea that they are only instrumentally valuable. Our results suggest that non-anthropocentrism—at least where wild animals are concerned—is not controversial among Americans.

Likewise, we found only small minorities of conservationists and non-conservationists endorsed the idea that humans have no moral obligation toward wild animals, while supermajorities (i.e., > two-

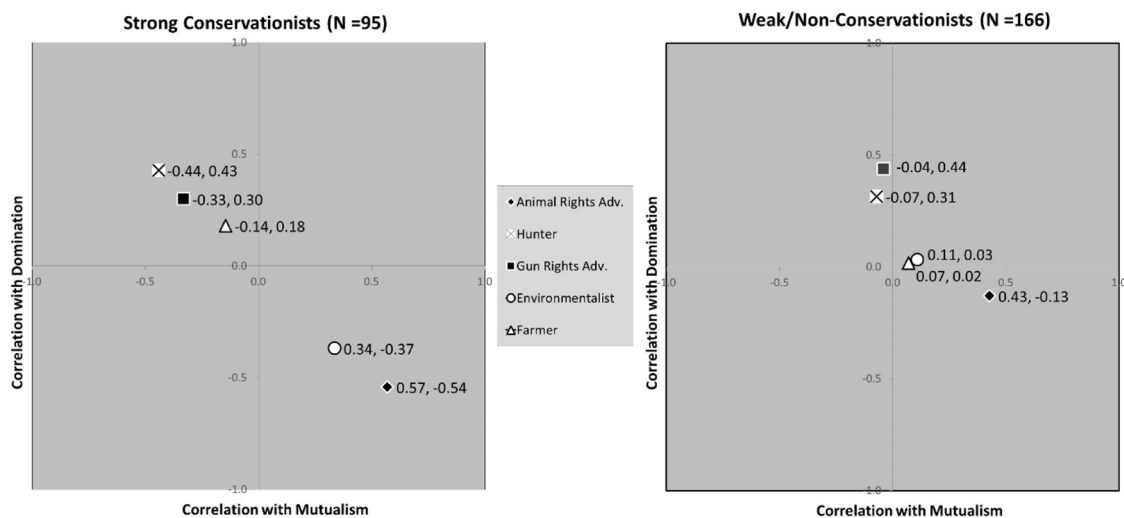


Fig. 3. Comparison of the association (Pearson’s r) between five measures of identity and respondents’ wildlife value orientations among those who self-identified “strongly” or “very strongly” as conservationists (n = 95) and those who identified “slightly” or “not at all” as conservationists (n = 166). These data show that identification with interest groups promotes conflict among conservationists by fostering opposing value orientations (i.e., correlations with opposite signs).

thirds) of conservationists and non-conservationists alike agreed that humans have obligations to future generations (of humans) and to avoid harm to individual animals. Differences between these groups were most pronounced for items invoking animal welfare (conservationists more strongly endorsed these obligations than non-conservationists). Collectively, these data show that American conservationists generally embrace the idea that the welfare of individual wild animals matters—an idea at the heart of compassionate conservation, and consistent with a mutualism value orientation. The prevalence of such sentiments may prove particularly challenging to agencies that have long viewed killing animals as a practical means of addressing human-wildlife conflicts, even where localized support for such actions exists.

Some conservation advocates contend that the appeal of conservation could be extended by better incorporating human interests in conservation decisions (Kareiva and Marvier 2012; Kareiva et al., 2012; Marvier, 2014). Other recent research suggests that globally, conservationists favor what the authors call “people-centered conservation”; however, they note that North Americans (who more closely represent our sample) tend to favor “science-led” approaches (Sandbrook et al., 2019). Though our data are silent on the usefulness of different types of appeals for motivating conservation action, they do provide evidence that concern for non-human elements of nature is extensive. Communications that promote human interest over the interests of wild animals may lack persuasive appeal for such individuals. Indeed, one recent experimental study found that both those who endorsed non-anthropocentrism and those who endorsed anthropocentrism responded with greater donation amounts to appeals that depicted non-human (as opposed to human-only) beneficiaries (Batavia et al., 2018). From a practical standpoint, our data suggest conservation actions that do not adequately consider the welfare of individual wild animals are likely to be viewed extremely skeptically—at least by the majority of Americans.

Some caution is warranted in how these data are interpreted. Importantly, our survey presented decontextualized statements concerning the value of wild animals and humanity’s obligations toward nature. That is, these statements lacked specific information that might be relevant when making conservation decisions (e.g., what types of animals are involved, their conservation status). Likewise, these statements do not require individuals to make trade-offs between human interests and the needs of non-human animals. While we anticipate that those who endorsed non-anthropocentrism should emphasize the needs of non-human animals more readily when faced with such decisions, we do not expect endorsement of non-anthropocentrism to exclusively determine how any particular individual responds to any particular case.

4.1. Values, identity and conservation conflicts

Although prior studies have shown that individuals’ identities can exert a powerful influence on their perceptions and preferences for specific conservation policies (Bruskotter et al., 2009; Lute et al., 2014), to date few studies have addressed the relationship between identity and values in a conservation context (for an exception, see Karns et al. 2018). Our results reveal the potential role of group identity in generating social conflict over conservation decisions, especially decisions that implicate the welfare and treatment of wildlife. Divergence in values between groups was most acute between those who identified as animal rights advocates (which was strongly and positively associated with mutualism and negatively associated with domination) and those who identified as hunters (who exhibited the opposite pattern). That these groups play a prominent role in contemporary conservation conflicts is evident, for example, in their oppositional stances on issues such as trophy hunting and the conservation and management of large carnivores.

The role of interest groups in conservation conflicts is also apparent in our analyses exploring the relationship between identities and WVOs

within the group that self-identifies as conservationists. If there was little conflict within the conservation community, we should anticipate self-identified conservationists to be relatively homogenous with respect to their WVOs regardless of the other groups with which they identify. If, on the other hand, there was conflict within the conservation community, then conservationists should be heterogeneous with respect to their WVOs, and we should expect correlations between WVOs and group identities to strengthen among self-identified conservationists. Consistent with the latter proposition, we found strong identification as a conservationist does not attenuate the relationships between WVOs and other relevant identities; rather, the strength of these relationships *increases* among conservationists (Fig. 3). Thus, identifying as a conservationist and another type of relevant interest group appears to be associated with an amplification of value conflict (i.e., opposing signs with mutualism and domination value orientations).

Interestingly, psychological research on social identity has generally adopted the assumption that only one identity can be salient for any given individual in any particular context (for review, see: Hornsey, 2008). However, the focus of such studies has generally been on understanding how identities impact the thoughts and actions of individuals in overt intergroup conflicts. Our research involved participation in an anonymous survey, in the absence of any overt, intergroup conflict. Certainly, social identity theory presumes that identities can have lasting impacts on individuals’ attitudes, norms and even values, and it has long been recognized that people can hold multiple identities. Thus, we expect multiple identities to impact judgments and decisions that are made anonymously (or occur outside of social settings). Indeed, our data indicate simultaneous identification with multiple interest groups (e.g., conservation and animal rights) can ‘align’ values in a manner that promotes value conflict (i.e., the relationships between identity and the two WVOs have opposite signs; see Fig. 3). This could be due to greater recognition among self-identified conservationists that mutualism and domination imply opposing ideals for how humanity should relate with wildlife, and it might signal that what it means to be a conservationist in America is currently disputed.

We caution that the group identities and perspectives on humanity’s obligations towards wildlife may be particular to the US conservation context. The nature of conservation challenges and the social groups (and associated identities) that have emerged around those challenges are likely to differ considerably across countries/contexts (Teel et al., 2007), particularly in the developing world, where the tradeoffs between conservation, economic development, and local livelihoods may be more pronounced. Consequently we recommend research exploring how contextual information and forced tradeoffs affect conservation judgments across cultural contexts. Nevertheless, viewed within the context of existing research which spans multiple issues and geographic contexts (Bruskotter et al., 2009; Lute et al., 2014; van Eeden et al., 2019), our research suggest that identification with broad interest group types have persistent and pervasive effects on conservation judgments.

Importantly, although the above statement implies a causal link between identity and values, we hasten to add that the relationship between identity and values should not be viewed as one-way, particularly given the multi-level structure of values we noted previously (Manfredo et al., 2017). Mechanistically, we anticipate that as individuals identify more strongly with a group, pressure to conform to group prototypes will increase (Tajfel, 1982; Tajfel and Turner, 1979), eliciting greater conformity in judgment and eventual internalization of these judgments. However, we also anticipate that individuals will join groups because those groups are viewed as reflecting their values. Moreover, as values shift over time due to intergenerational replacement, we anticipate new groups (that espouse these values to different degrees) will arise to replace old groups and stimulate discussion, debate, and possible conflict over conservation-related decisions. Thus, it is likely that values (at the individual level) and value shift (at the

societal level) will impact both the groups that individuals come to identify with, as well as the types of groups that are available at any given place/time. However, the cross-sectional data used in these analyses are insufficient for testing such complex mechanisms. As such, a promising area of research that would overcome limits of cross-sectional analyses would be to explore how groups and associated identities change over time both within individuals and societies.

From a practical standpoint, although appeal to shared values and superordinate identities are sometimes offered as a means of transcending conflicts (e.g., Lute et al., 2014), our data suggest this may be challenging in conservation contexts in the US. Indeed, individuals who simultaneously identified as conservationists and as members of other groups (e.g., hunters, animal rights activists) had more, not less divergent value-orientations (suggesting that ‘conservationist’ may not be a superordinate identity). Though it may be tempting to lament the role of groups in perpetuating conservation conflicts, it is also important to recognize that conflict can be constructive, as it assists in identifying competing concerns, associated tradeoffs, and fundamental interests (Deutsch, 1977; Madden and McQuinn, 2014). In this regard, our research suggests that efforts to reconcile, manage or “transform” conflicts might be aided by understanding the salient identities of disputants in a conflict. In particular, development of shared identities that transcend a conflict context could be used as the basis for promoting shared understandings and social trust among disputants—ultimately providing a basis for challenging unhelpful ‘us-vs-them’ dichotomies that sometimes arise in conservation (Lute and Gore, 2018, 2019).

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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