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Relationships between Valence towards Wildlife and Wildlife Value Orientations**Zulkhairi Azizi Zulkhairi Azizi, Maarten Jacobs****Wageningen University****Droevendaalsesteeg 3****maarten.jacobs@wur.nl****Abstract**

Research to understand human responses to wildlife and wildlife issues has predominantly focused on cognitions. Yet, as emotions are basic human responses to wildlife, emotions are important too. Integrating cognition and emotion concepts could foster the overall understanding of human-wildlife relationships. This study tested the relationships between valence (the pleasant-unpleasant dimension of emotion) regarding wildlife and wildlife value orientations (patterns of basic cognitions in the context of wildlife). Also, this study estimated the additional predictive potential of emotion next to cognition for the acceptability of lethal control and support for wildlife conservation. Analyses showed that valence was associated with wildlife value orientations. Valence had additional explanatory value next to cognition for conservation support. Valence, however, did not have additional predictive potential for acceptability of lethal control. Based on these findings, we recommend integrating cognition and emotion measurements in future research to understand human responses to wildlife issues. Also, wildlife managers could take the emotion of stakeholders into account in their communication and decision-making processes.

Keywords: cognition, emotion, wildlife conservation support, acceptability of lethal control

Relationships between Valence towards Wildlife and Wildlife Value Orientations

Introduction

Successful wildlife conservation depends on public responses to management and policy actions. The concept of the public denotes a broader set of people than the concept of stakeholders, which usually refers to people with clearly recognised interests. People without direct interests can influence the effectiveness of conservation efforts as well, for instance through voting, donations, petitions, and obeying or disobeying rules. Diversity amongst the public presents a major challenge (Kaltenborn, Bjerke, Nyahongo, & Williams, 2006). Lethal control of problematic wildlife, for example, could be an efficient way to solve the problem and might therefore be supported by some, especially by those experiencing the problem. Yet, others might perceive the same action as a wrong way to treat of animals and therefore oppose the action (Treves & Naughton-Treves, 2005; Treves & Karanth, 2003). Reversely, some people appraise government conservation policies and actions that positively affect species populations, but local inhabitants who have problems with certain animals on a daily basis often have a negative attitude (Aziz, Clements, Giam, Forget, & Campos-Arceiz, 2017; Bjerke & Kaltenborn, 1999). Public diversity often leads to societal controversy and conflict. Understanding the views of the public is important to be able to identify the root causes of controversy and to think of potential solutions for wildlife conservation (Manfredo, 2008). Conservation social science aims to understand the human dimensions of wildlife conservation by examining the social complexity of wildlife issues (Bennett et al., 2017; Prokop & Randler, 2018; Vaske & Manfredo, 2012).

Psychological conservation research has traditionally focused on cognitions – units of thought – to understand people's reasoning about and responses to wildlife (Jacobs, 2012; Manfredo, 2008). Cognition concepts that have typically guided human dimensions of wildlife research include wildlife value orientations, attitudes, and norms (Jacobs, Vaske,

Teel, & Manfredi, 2018; Vaske & Manfredi, 2012). Wildlife value orientations are patterns of basic beliefs that give meaning and direction to fundamental values in the context of human-wildlife interactions (Fulton, Manfredi, & Lipscomb, 1996; Vaske & Manfredi, 2012). Research suggests that wildlife value orientations explain up to 45 per cent of the variation of more specific cognitions such as attitudes towards wildlife, wildlife issues, and wildlife management actions (Hermann, Voß, & Menzel, 2013; Jacobs, Vaske, & Sijtsma, 2014; Sijtsma, Vaske, & Jacobs, 2012; Teel & Manfredi, 2009; Whittaker, Vaske, & Manfredi, 2006). Next to cognitions, social scientists have started to address emotions towards wildlife (Jacobs, 2009; Prokop & Randler, 2018). This more recent strand of research is equally relevant as emotions lie at the heart of human attraction to, repulsion from, and conflict over wildlife (Manfredi, 2008). Studies indicate that emotions also explain a considerable portion of the variation in specific thought, such as acceptability of wildlife management actions (Jacobs, Vaske, Dubois, & Fehres, 2014).

As both cognitions and emotions have predictive potential for understanding diversity amongst the public, a crucial question is to what extent this predictive potential of cognitions and emotions overlap or complement each other. To the author's knowledge, cognition and emotion approaches have hitherto been separate research tracks, except for two studies. One study examined the influence of anger, sadness, fury, and fear (emotions) in addition to wildlife value orientations (cognitions), on intentions to support the reintroduction of wolves amongst German teenagers (Hermann & Menzel, 2013). Yet, the studied emotions concerned the situation of wolves being at risk in Germany and hence not wildlife as such. Another study examined the mediation effects of anticipated emotions in a model that used general attitudes towards, and symbolic existence beliefs about coyotes to predict the acceptability of lethal coyote control (Sponarski, Vaske, & Bath, 2015). As emotion was conceptualised as a mediating variable instead of an exogenous (i.e., independent) variable next to cognition,

possible additional predictive potential of emotion next to cognition was not examined.

Therefore, a simultaneous study of cognitions and emotions is needed to know if the predictive potential of emotion adds to the predictive potential of cognition. The present paper makes a new contribution to the literature by addressing this knowledge gap. A survey was distributed amongst a sample of Malaysians ($n = 1062$) to examine to what extent wildlife value orientations and emotions towards wildlife predict the acceptability of lethal wildlife control and support for wildlife conservation.

Theoretical framework

Cognitions encompass a collection of mental dispositions and processes that function as units of thought in perceiving, thinking and understanding. The cognitive hierarchy theory suggests that cognitions are organised in a hierarchical continuum where more specific cognitions are informed by more general cognitions (Fulton et al., 1996; Jacobs et al., 2018). The cognitive hierarchy theory applies this principle to the context of human thought about and responses to wildlife and wildlife management actions. The concept of wildlife value orientations is a core component of the cognitive hierarchy, as the concept is assumed to mediate between fundamental values that transcend any context and attitudes, norms, and behavioural intentions in specific human-wildlife interaction contexts (Manfredo, Teel, & Henry, 2009).

Conservation social scientists have identified domination and mutualism as the predominant wildlife value orientations in the USA (Manfredo et al., 2009; Teel & Manfredo, 2009). Domination reflects the ideology of mastery over nature and has been associated with the rise of Judeo-Christian religion, the growth of science and technology, Western European colonialism, and the expansion of capitalism (Hand & Van Liere, 1984; Manfredo et al., 2009; Pattberg, 2007). Domination-oriented people prioritise the well-being of humans over that of wildlife and believe that humans have the right to use wildlife for human purposes

(Jacobs et al., 2018). In contrast, mutualism reflects an egalitarian ideology that prioritises equality. People who are oriented towards mutualism believe that individuals should care for the welfare of others. Modernisation processes, associated with higher income and education levels, leads to rise in non-materialist values (Inglehart & Baker, 2000). People in modernised societies feel a need to belong and to feel social affiliation (Poston, 2009). This need includes bonds with wildlife (Manfredo et al., 2009). Mutualism-oriented people believe wildlife deserves rights and care (Teel & Manfredo, 2009). Studies in different countries suggest that domination and mutualism exist and can be measured reliably with a standardised scale, also outside of the US (Cerri, Mori, Vivarelli, & Zaccaroni, 2017; Gamborg & Jensen, 2016; Vaske, Jacobs, & Sijtsma, 2011; Zainal Abidin & Jacobs, 2016).

Mounting evidence suggests that domination and mutualism indeed predict specific cognitions, as anticipated by the cognitive hierarchy theory. In general, individuals who are more domination-oriented have shown to be more likely to accept lethal control, as opposed to people who are more mutualism-oriented (Jacobs et al., 2014). Domination and mutualism have also shown to predict intentions to support the reintroducing of wildlife in Germany (Hermann et al., 2013). Mutualism-oriented people were more likely to support wildlife reintroduction than domination-oriented people.

For the present study, two considerations are important. First, the concept of wildlife value orientations is frequently used in empirical research. Adopting this concept allows us to capitalise on and add to existing research. Second, research suggests that domination and mutualism exist and have predictive potential across different countries, as indicated before. Specifically, a pilot study amongst Malaysian students demonstrated that the concepts and associated measurement scales had adequate reliability and predictive validity (Zainal Abidin & Jacobs, 2016). The choice to focus on wildlife value orientations produces a requirement for operationalising emotion. Concepts have a particular level of abstraction by necessity. For

instance, the concept of attitudes towards snakes pertains to snakes. The concept of care for animals pertains to many different species and is hence more abstract than attitudes towards snakes. Ideally, to simultaneously examine emotions and wildlife value orientations, the level of abstraction of the emotion concept and measurement would be the same as the level of abstraction of wildlife value orientations. Since the latter pertain to wildlife in general, emotion in this study should be emotion towards wildlife in general as well.

Emotions are momentary conditions constituted by complex processes that include physiological responses, motor expression, action tendency, and subjective feeling (Kleinginna & Kleinginna, 1981; Winkielman, Knutson, Paulus, & Trujillo, 2007). Emotions influence people's evaluation (Ajzen, 2005), perception (Dolan, 2002), decision-making (Izard, 2007), and memory (Talarico, LaBar, & Rubin, 2004). The term "emotion" is used in the literature to denote two different concepts (Jacobs, Vaske, & Roemer, 2012). First, emotions as states reflect momentary emotional responses and experiences that vary in time. Second, emotions as traits indicate stable dispositions that function as criteria against which the emotional relevance of stimuli is judged (Jacobs et al., 2012; Lerner & Keltner, 2000). To illustrate: an individual can fear snakes (emotion as trait) without currently being in fear of a snake (emotion as state), simply because there is no snake present, and hence the disposition is not activated. The present study conceptualises emotion as a trait, since wildlife value orientations are traits as well.

Emotion scholars have employed two different theoretical perspectives to categorise the variety of emotions (Jacobs, Fehres, & Campbell, 2012). The discrete emotion perspective assumes the existence of a number of qualitatively different basic emotions, such as fear and joy. The basic emotions claim (Ekman, 1992) is an example of the discrete perspective. The dimensional perspective categorises emotions as positions along different dimensions (Jacobs et al., 2012). Emotion theory and empirical research suggest that valence (pleasure-

displeasure continuum) and arousal (activation-deactivation continuum) are the most important dimensions (Feldman Barrett, Mesquita, Ochsner, & Gross, 2007; Russell, 2003). The present study focuses on valence. Research has demonstrated that of all potential single emotion measures, valence is superior when it comes to understanding the variability in emotional dispositions of states (Bradley & Lang, 2000). In addition, valence is relevant to any wildlife species. Relevance of specific discrete emotions, on the other hand, varies across species (e.g. fear might be specifically relevant in case of large predators and joy in case of mammals that pose no danger). Focus on valence then, would allow us to construct an overall index for emotion towards wildlife in general thus meeting the requirement that the emotion concept should be on the same level of abstraction as wildlife value orientations.

The concept of acceptability of wildlife management actions refers to normative evaluations in a given context, different from abstract thought like wildlife value orientations (Sijtsma et al., 2012). Previous research has demonstrated that wildlife value orientations predict wildlife management acceptability, particularly the acceptability of lethal control of problematic wildlife, with effect sizes up to 46 per cent (Jacobs et al., 2014; Teel & Manfredo, 2009; Whittaker et al., 2006). For this reason, the acceptability of lethal control was adopted in the present study as a dependent variable. Another dependent variable was included to broaden the scope of the research: conservation support. Wildlife value orientations are found to predict conservation support as well (Hermann et al., 2013). Conservation denotes interventions that are beneficial to wildlife, while lethal control is harmful to wildlife.

While emotion and cognition are to a great extent constituted by different neural systems in the human brain, these systems interact and as a result there is perpetual and mutual influence between emotion and cognition (LeDoux, 1998). It is therefore likely that relationships exist between wildlife value orientations and valence regarding wildlife. On the

basis of previous arguments, the following hypotheses were tested:

- H1: Wildlife value orientations and valence regarding wildlife are associated.
- H2: Valence regarding wildlife predicts acceptability of lethal wildlife control, next to the predictive potential of wildlife value orientations.
- H3: Valence regarding wildlife predicts support for wildlife conservation policy, next to the predictive potential of wildlife value orientations.

Methods

A close-ended questionnaire in English and Malay (on the same form) was distributed in two districts in the state of Johor, Malaysia, between August and November 2016. The questions translated into Malay had previously been tested in a pilot study on wildlife value orientations amongst Malaysian students (Zainal Abidin & Jacobs, 2016). The questionnaire was pre-tested among inhabitants of Johor – no changes were made upon the pre-test. The questionnaire was also presented to officials of the Department of Wildlife and National Parks of Peninsular Malaysia (DWNP) for contextual relevance.

Sampling and procedures

People living in 21 residential areas were surveyed. Residential areas were randomly selected, from all areas with frequent wildlife disturbances (DWNP, 2014, 2015, 2016) that are close to green spaces, and are non-gated and non-guarded. Within residential areas, every second street, and within streets, every fourth house was selected. Permanent residents of the selected houses of 18 years or over who had the most recent birthday by the time of the arrival of the researcher were asked to fill out the questionnaire. The alternate selection procedure and age selection criteria increased the probability of random selection of respondents at the residential and household level, and presented less intrusive randomisation processes (Steele et al., 2001).

Questionnaires were distributed to 1943 households using a drop-off/pick-up method

(Steele et al., 2001). Respondents who agreed to participate were handed a cover letter explaining the purpose of the research, a questionnaire form, and a consent form. Completed questionnaires were collected during the second visit on the next day. The distributor made a new appointment with respondents for a third visit on a date and time that was convenient for respondents if they did not return the completed questionnaire during the second visit. Of the 1943 questionnaires initially handed-out, 1100 surveys were returned (57 per cent response rate), 1062 of which were usable. The main reason to exclude some returned surveys was “straight-lining”, meaning that people had selected the same answer for each item in a longer list (Cole, McCormick, & Gonyea, 2012).

Independent variables

We used the standard 19-item wildlife value orientations scales as previously applied in various countries (Jacobs et al., 2014; Manfredo et al., 2009; Zainal Abidin & Jacobs, 2016). The domination wildlife value orientation consisted of appropriate use (6 items) and hunting (4 items) beliefs, whereas the mutualism wildlife value orientation was composed of social affiliation (4 items) and caring (5 items) beliefs. All items were coded on 7-point scales ranging from -3 (strongly disagree) to +3 (strongly agree) with 0 as the neutral point. Two items (i.e., “Hunting is cruel and inhumane to the animals” and “Hunting does not respect the lives of animals.”) were reverse coded prior to analysis. To assess valence with regard to wildlife, respondents were asked to indicate how pleasant or unpleasant they found 56 animals. Responses were coded on 7-point scales ranging from -3 (unpleasant) to +3 (pleasant) with 0 as the neutral point. The list of animal species was adopted from a previous study on fear of animals (Arrindell, 2000; Davey et al., 1998). Several minor modifications were made to adjust the list according to the local context: slug and gerbil were removed from the original list due to unfamiliarity; snake and wild bird were changed to cobra and owl; deer, wild boar, elephant, python, civet, and monkey were added as these animals are

common in Malaysia; and panda was added because of its increasing popularity in Malaysia.

Dependent variables

To measure the acceptability of lethal wildlife control, we designed six questions that reflect three different ways of interacting with wildlife (encountering an animal, economic loss caused by wildlife, and human death caused by wildlife), and involve two species (monkey and elephant). These species were selected because they present actual problems in the state of Johor, making it likely that the questions tap into salient thought. The three interactions were included to build on previous research that has also used these three interactions (Jacobs et al., 2014). Building on previous research is ideal in order to estimate the additional value of examining emotion. Respondents were asked to indicate how acceptable they found lethal wildlife control. For example, one of the questions asked was: “A troop of monkey lives in a large nature area. There’s a chance that hikers will encounter them. How unacceptable or acceptable is it if wildlife agencies trap-to-eliminate the animal?” To assess support for wildlife conservation policy, respondents were asked to rate their support for or opposition against the conservation of 12 animals that are a subset from the valence list. A previous pilot study among students (Zainal Abidin & Jacobs, 2016) indicated that repeating all 56 species would easily lead to mental fatigue. Therefore, we presented a random selection of the longer list. As an index of conservation support across species was used for statistical testing, the full list of species was not necessary. The question was: “In general, do you support or oppose conservation of the animals listed below?” Both dependent variables were coded on 7-point scales.

Data analysis

Reliability analyses (Cronbach’s alpha) were performed to estimate the internal consistency of the items reflecting each concept. Pearson correlations were used to estimate the association between wildlife value orientations and valence. Stepwise regression analyses

were used to estimate the predictive potential of both wildlife value orientations and valence for the acceptability of lethal control and conservation support.

Results

Internal consistency

On average, inhabitants of Johor were slightly mutualism-oriented towards wildlife (Table 1). The relatively negative average appraisal of lethal control stands out. All reliability coefficients suggest acceptable reliability (using the cut-off point of $\geq .65$; Vaske, 2008). Initial reliability analysis on domination generated an alpha of .62. Three of ten items were dropped to obtain acceptable reliability. Composite indices were calculated on the basis of the means of the associated items. The indices were used for further analyses.

[TABLE 1 ABOUT HERE]

Relationships between domination, mutualism, and valence

The more domination-orientated people are, the less pleasant they find wildlife, as valence was negatively associated with domination ($r = -.11, p < .01$). Yet, the effect size suggests a minimal relationship. Conversely, the more mutualism-oriented people are, the more pleasant they find wildlife, as a positive association was observed between mutualism and valence ($r = .32, p < .001$), the effect size indicating a typical relationship. These results confirm hypothesis 1.

Predictive potential of wildlife value orientations and valence

Wildlife value orientations predicted the acceptability of lethal control as well as support for conservation policy (Table 2), explaining about 10 per cent of the variability and indicating typical relationships. Adding valence as a predictor did not increase the portion of predicted variability of acceptability of lethal control. These findings lead to the rejection of

the second hypothesis. Valence, however, did have additional predictive potential next to wildlife value orientations for conservation policy support. The explained variance increased from 8 to 17 per cent, and valence was a superior predictor than both domination and mutualism. These figures support hypothesis 3.

[TABLE 2 ABOUT HERE]

Discussion

Our study suggests that both cognition and emotion are important for understanding diversity in the way people think about wildlife. Future research is needed to examine whether this applies across different contexts and countries. Valence regarding wildlife, as the most essential measure of emotion (Russell, 2003; Russell & Barrett, 1999), predicted conservation support in addition to wildlife value orientations. Thus, emotion has additional explanatory value next to cognitions, as theory would suggest (Jacobs, 2009; Kahneman, 2003; LeDoux, 1998). However, valence regarding wildlife did not explain the acceptability of lethal control on top of the explanatory value of wildlife value orientations. Ancillary analyses revealed that valence alone (i.e. a model without wildlife value orientations) predicted the acceptability of lethal control ($r = -.10, p < .01$), as well as conservation support ($r = .38, p < .001$). As a standalone factor, valence thus explains a portion of the variance in both dependent variables. Theoretically, we recommend integrating emotion and cognition concepts to understand individual responses to wildlife and wildlife issues. Which specific responses and thoughts about wildlife will be predicted to what extent by emotion and cognition is an intriguing empirical question to be further addressed.

The notion of specificity (Whittaker et al., 2006), meaning that cognitions exist on different levels of abstraction, guided the present study. Consequentially, an indicator of

emotion towards wildlife in general was used, as only then the emotion measurement would have the same level of abstraction as the cognition measurement (i.e., wildlife value orientations). Yet, human emotions can vary greatly across species (Prokop & Randler, 2018). As a background explanation, scientists suggest that stimuli are appraised for their emotional relevance in five different dimensions: (i) novelty, (ii) valence, (iii) goals/needs, (iv) agency, and (v) norms (Ellsworth & Scherer, 2003; Jacobs et al., 2012). It is very likely, for instance, that facing a lion blocking a road affects one's goals very differently than seeing a bird flying over. Using more species-specific emotion measurements, would therefore very likely increase the predictive potential.

Human dimensions of wildlife research has traditionally focused on cognitions (Jacobs, 2012) such as value orientations, beliefs, norms, or attitudes (Fulton et al., 1996; Manfredo et al., 2009; Teel & Manfredo, 2009; Vaske & Manfredo, 2012; Vaske & Whittaker, 2004), which have been examined to understand public diversity and predict responses. Recently, scholars have claimed that it is important to consider emotions as well (Jacobs et al., 2012; Manfredo, 2008; Prokop & Randler, 2018). Empirical research has confirmed this claim. For instance, using emotional messages to increase people's intentions for whale conservation was more effective than using cognitive messages (Jacobs & Harms, 2014). Also, emotions towards wolves predicted the acceptability of wolf management actions (Jacobs et al., 2014). The findings of the present study further support the claim that emotions are important.

Practically, wildlife managers should therefore consider human emotions as well. For instance, in public meetings, room to express and reflect on emotions could contribute to people feeling heard and acknowledged. Managers can perhaps be afraid of giving space to emotion, believing that emotions corrupt rational decisions (Manfredo, 2008). But talking about emotions felt towards wildlife and wildlife issues is not the same as taking decisions.

Also, if human stakeholders are deemed important to managers, and for those stakeholders emotions are important, then human emotions are inevitably relevant as well. Neglecting the relevance of emotions would not be very rational when it comes to taking good decisions that will work in practice. Moreover, conservation support is positively associated with valence as regards to animals. Managers and policy-makers could emphasise emotion and foreground emotions towards animals as a means to activate people's willingness to support conservation. Neglecting emotion in this case could be detrimental to their conservation goals.

Psychological research suggests that perception and evaluation of animals are not isolated mental processes and dispositions. For instance, a relationship between animal attitudes and more general environmental attitudes was identified (Binnigießer & Randler, 2015). Furthermore, positive attitudes towards animals are associated with a more general interest in biology, and more exposure to natural environments (Torkar, Kubiato, & Bajd, 2012). Future research could examine whether association between human emotions towards animals and human emotions towards the broader natural world are also associated.

Importantly, we do not claim to provide a full understanding of the emotional transactions between wildlife and humans or a full account of the consequences of emotions. Testing hypotheses requires focus. Theorizing in other social science disciplines such as cultural geography opens up different avenues for debate and research. For instance, the concept of an animal's atmosphere "describes affective intensities of a particular place that gives rise to actions, feelings and emotions" (Lorimer, Hodgetts, & Barua, 2019). Animals infuse a place with an "atmosphere" - denoting a set of geographically distributed affective intensities that influence what people do and feel. These influences are not necessarily expressed or expressible through language and not necessarily consciously processed. At the same time, people influence animals' atmospheres, through deliberate management actions or any other behaviors affecting places. From this perspective, it might be equally important to

look at how places inhabited or visited by animals evoke emotions in humans. Also, next to public responses, examining practices could be relevant. Even an apparently simple act such as counting animals for a census can be a skilled, demanding and deeply emotional practice guided by ethical motivations (Lorimer, 2008). Furthermore, geographical theory invites to critically reflect on the division into human subject and animals as part of the object world (Lorimer, 2007) and the division between the wild and the domestic (Lorimer & Driessen, 2013). For instance, if human influence wildlife through management and policy, is wildlife as wild as it is often assumed to be?

Conclusion

This article addressed the relationships between valence regarding wildlife and wildlife value orientations, and the additional predictive potential of valence next to wildlife value orientations. The relationships between the domination and mutualism wildlife value orientations with valence suggest that the more people like wildlife the more they tend to be mutualism-oriented. Liking wildlife is hardly associated with domination. Valence did predict conservation support on top of the explanatory value of wildlife value orientations. Wildlife value orientations were the better predictors for the acceptability of lethal wildlife control, whereas valence was the better predictor for wildlife conservation support.

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Table 1

Descriptive and Reliability Analyses of the Independent and Dependent Variables

Variable	Mean	SD	Cronbach's alpha
Domination ^a	.21	1.06	.68
Mutualism ^b	.72	1.11	.87
Valence to wildlife ^c	-1.03	.84	.96
Acceptability of lethal wildlife control ^d	-1.42	1.51	.89
Support for wildlife conservation policy ^e	.27	1.46	.94

Note. SD = Standard deviation

^a Average score of agreement–disagreement scales on seven items. Deleted items were:

“Humans should manage wildlife populations so that humans benefit”, “Hunting is cruel and inhumane to the animals” and “Hunting does not respect the lives of animals.”

^b Average score of agreement–disagreement scales on nine items.

^c Average score of pleasant–unpleasant ratings on 56 animal species.

^d Average score of acceptable–unacceptable scales to lethal monkeys and elephants control in the encounter, economic loss, and human death situations.

^e Average score of support–oppose scales to conservation support of 12 wildlife species (i.e., parakeets, squirrels, turtles, deer, spiders, beetles, bats, lizards, tigers, bears, crocodiles, sharks).

Table 2

Multiple Regression Results of Domination, Mutualism Wildlife Value Orientations and Valence Predicting Acceptability of Lethal Wildlife Control and Support for Wildlife Conservation Policy

Model	Acceptability of lethal			Support for wildlife		
	wildlife control			conservation policy		
	β	Adj. R^2	R^2	β	Adj. R^2	R^2
Predictor	change			change		
WVOs only		.11***			.08***	
Domination	.27***			-.12***		
Mutualism	-.18***			.25***		
WVOs and Valence		.11***	.001		.17***	.10***
Domination	.27***			-.09**		
Mutualism	-.17***			.15***		
Valence	-.03			.33***		

Note. * Significant at $p < .05$, ** Significant at $p < .01$, *** Significant at $p < .001$