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Social Psychological and Personality Science 2012 3: 421 originally published online 1 November 2011
DOI: 10.1177/1948550611425106

Social Psychological and Personality Science
3(4) 421-429

DOI: 10.1177/1948550611425106
http://spps.sagepub.com
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When Closing the Human–Animal Divide Expands Moral Concern: The Importance of Framing

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Abstract

Humans and animals share many similarities. Across three studies, the authors demonstrate that the framing of these similarities has significant consequences for people's moral concern for others. Comparing animals to humans expands moral concern and reduces speciesism; however, comparing humans to animals does not appear to produce these same effects. The authors find these differences when focusing on natural tendencies to frame human–animal similarities (Study 1) and following experimental induction of framings (Studies 2 and 3). In Study 3, the authors extend their focus from other animals to marginalized human outgroups, demonstrating that human–animal similarity framing also has consequences for the extension of moral concern to other humans. The authors explain these findings by reference to previous work examining the effects of framing on judgments of similarity and self-other comparisons and discuss them in relation to the promotion of animal welfare and the expansion of moral concern.

Keywords

human–animal similarity, similarity comparison, speciesism, dehumanization, mind attribution, moral concern

A recent advertising campaign by Meat and Livestock Australia used the catchphrase "Red meat. We were meant to eat it." This television advertisement shows Sam Neill dancing with an Orangutan, discussing the benefits of eating red meat, and claiming our taste for it is a matter of instinctive behavior. The campaign was a raging success. Not only did Australian expenditure on beef and lamb increase from $8 billion in 2004/2005 to $9 billion in 2006/2007 but it was also a finalist for an award from the Australian Market and Social Research Society (Peace, 2008).

This campaign presents a fascinating paradox. Why does interacting with an Orangutan, while likening our culinary choices to animalistic instincts, facilitate our desire to then consume animals? Increasing our perceived similarity to animals, while simultaneously facilitating our desire to eat them, seems contrary to theories that emphasize the role of enhanced similarity in increasing favorability toward others (e.g., Gaertner & Dovidio, 2000). Based on this reasoning, focusing on the similarity between animals and humans could lead to an extension of moral rights enjoyed by humans to animals. Plenty of research supports this case. For example, when animals are thought to experience pain, suffering, or understanding akin to humans, our concern for their welfare generally increases (Opotow, 1993; Plous, 1993, 1996, 2003; Singer, 1990; Westbury & Neumann, 2008). Conversely, using animals for food reduces perceptions of their human-like qualities and moral status (Bastian, Loughnan, Haslam, & Radke, in press; Bilewicz, Imhoff, & Drogosz, 2011; Bratanova, Loughnan, & Bastian, 2011; Loughnan, Haslam, & Bastian, 2010).

We explore one factor that may help explain this apparent paradox: The effect of human–animal similarity *framing* in extending moral concern to animals. Focusing on the similarities between humans and animals might increase support for animal welfare and expand moral concern. However, as the Meat and Livestock Australia advertising campaign demonstrates, this is not necessarily true. Drawing from previous research on the effects of framing on similarity judgments and self-other comparisons, we explore whether the human–animal divide framing has significant consequences for the extension of moral concern to others.

Framing Effects on Similarity Judgments

Research on self-other similarity judgments (e.g., Holyoak & Gordon, 1983; Karylowski, 1990; Srull & Gaelick, 1983)

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demonstrates the importance of framing. This work consistently reveals that interpersonal similarity is heightened when the referent is the self (e.g., how similar are others *to self*), compared to when the referent is the other (e.g., how similar is the self *to others*). These framing differences have implications for self-evaluation outcomes in social comparisons (Eiser, Pahl, & Prins, 2001; Mussweiler, 2001).

Framing effects on similarity judgments have also been demonstrated more broadly; the direction of comparison can significantly affect perceptions of similarity, whether comparing countries, figures, letters, or signals (Tversky, 1977; Tversky & Gati, 1978). These framing effects have been linked to differences in the relative salience or prominence of the referent (for prototypicality, see Codol, 1975; for value, see Leyens, 1990). That is, when the more salient or prominent entity is the referent, and the less salient or prominent entity is the subject of comparison, perceived similarity increases (Tversky & Gati, 1978). As such, comparing others to the self heightens perceived similarity (vs. comparing the self to others) due to the salience or prominence of the self relative to others.

Framing effects on perceived similarity have been explained through Tversky's (1977) feature-matching model of similarity. According to this model, in order to determine the similarity between two objects, perceivers match features of the subject onto features of the referent. The primary determinant of similarity, via this matching process, is the number of features unique to the subject, with unique features of the referent weighing less heavily in the comparison process (Tversky, 1977). Critically, however, is the elaborateness with which the subject or referent is represented (Mussweiler, 2001). More elaborately represented subjects are more likely to be viewed as different to less elaborately represented referents. In this case, the feature-matching process highlights those qualities that are unique to the subject. On the other hand, less elaborately represented subjects are likely to be viewed as similar to more elaborately represented referents, as the matching process will highlight fewer qualities that are unique to the subject (Mussweiler, 2001; Tversky, 1977). This explains why the self, which is more salient and more elaborately represented, is perceived as more similar to others when positioned as the referent within similarity comparisons.

Framing Human–Animal Comparisons

Framing effects may be useful for understanding why apparent differences emerge in the comparison of similarities among humans and animals for animal welfare and rights. Knowledge of humans is more elaborate than other animals due to the relative salience, prototypicality, and/or value of humans compared to animals. According to Tversky (1977, see also Codol 1975; Leyens, 1990; Mussweiler, 2001), this means that when humans are positioned as referents in human–animal comparison, animals are likely to be viewed as relatively similar to humans. In these cases, the subject of comparison (animals) is viewed as having few unique features compared to the referent of comparison (humans). Conversely, when animals are the referent of the human–animal comparison, humans are likely to be viewed as relatively dissimilar to animals. This is because humans are viewed as having many unique features when compared to animals.

These differences in framing are likely to have implications for the extension of moral concern to animals. Comparing animals to humans should increase perceived similarity and thinking about animals as human-like raises concerns about moral inclusivity. We argue that this increased moral inclusivity occurs because viewing animals (or nonhumans) as similar to humans increases mind perception (Epley & Waytz, 2009; Epley, Waytz, Akalis, & Cacioppo, 2008; Kiesler, Powers, Fussell, & Torrey, 2008; Morewedge, Preston, & Wegner, 2007; Waytz, Gray, Epley, & Wegner, 2010; Wheatley, Milleville, & Martin, 2007). Possessing a mind is a fundamental basis on which people afford moral concern to others (Bandura, 1999; Bastian, Laham, Wilson, Haslam, & Koval, 2011; Gray, Gray, & Wegner, 2007; Gray & Wegner, 2009). Seeing animals as similar to humans may therefore highlight their morally relevant capacities (minds) and trigger greater moral concern.

Within this comparison context, it will be qualities relating to *sensation*, rather than intellect, which are highlighted. The process of matching features of animals (subjects) onto features of humans (referents) will make shared qualities, such as the capacity for basic sensation, particularly accessible (Tversky, 1977; see also Mussweiler, 2003). This is because humans are perceived to share the capacity for sensation with animals but are differentiated by their capacity for intellect (Gray et al., 2007; Haslam, 2006; Haslam, Kashima, Loughnan, Shi, & Suitner, 2008; Leyens et al., 2000; 2001; Marcu, Lyons, & Hegarty, 2007).

Across three studies we explore the consequences of framing the human–animal divide for the expansion of moral concern. In Study 1, we focus on naturally occurring differences in how people think about this divide, in Studies 2 and 3 we manipulate this framing. We explore these effects using a measure of moral concern and mind attribution (Studies 1 and 2). Our central hypothesis is that when animals are perceived as relatively similar to humans, this will increase perceptions of shared qualities (i.e., capacity for sensation), in turn serving to increase moral concern (e.g., Gray et al., 2007). In Study 3, we consider whether expansion of moral concern toward animals has implications for attitudes toward animal welfare and exploitation (i.e., speciesism), and also toward marginalized human outgroups. An important question is whether this extension of moral concern to animals may have "spillover" effects for the expansion of moral concern more generally. Specifically, we predict that comparing animals to humans will lead to an expansion of moral concern, thereby reducing speciesism and increasing moral concern for others more generally.

Study 1

In Study 1, we focused on whether these different framings naturally occur when thinking about the similarities between

humans and animals. Furthermore, we aimed to show that people's natural framing of human–animal similarity is systematically associated with the attribution of morally relevant mental states and moral concern for animals.

Method

Participants

Thirty-six students (22 female; $M_{age} = 18.7$) from an Australian university participated for course credit, with 81% self-identifying as Australian or New Zealander. None of the participants self-identified as vegetarian/vegan, reporting that they ate meat 2.65 ($SD = 1.78$) days per week.

Materials

Participants first completed an essay task requiring them to write two pages (10 min) on similarities between humans and animals. No parameters for framing were provided. Specifically, participants read:

> In contemporary society it is clear that humans and animals are actually quite similar in many regards. We would like you to write a brief essay on how humans and animals are similar.

Participants next completed a moral circle task (Laham, 2009), consisting of a list of 26 common nonhuman animals. Participants were instructed to "indicate those animals that you feel morally obligated to show concern for."

Our measure of mind attribution required participants to view a picture of a cow. This served as an indicator of the tendency to attribute mind to animals. Participants rated the cow's capacity to experience 18 mental states, on a scale ranging from 1 (*definitely does not experience*) to 7 (*definitely does experience*). As in Loughnan et al. (2010), these states were divided into two 9-item sets: *sensation* (pain, hunger, pleasure, fear, happiness, consciousness, seeing, hearing, tasting; $\alpha = .79$) and *intellect* (thinking, imagining, wishing, needing desire, intending, planning, choosing, reasoning; $\alpha = .90$) representing two basic dimensions of mind perception (see Gray et al., 2007).

Results and Discussion

Essays were coded for arguments that humans are similar to animals (*humans-are-animal-like*) or that animals are similar to humans (*animals-are-human-like*). Two raters who were blind to the hypotheses coded each essay. Coding was based on the framing the authors primarily relied on. Framing was largely clear and consistent within essays, reflected in high agreement between raters ($\kappa = .83$). That is, participants either wrote on how similar humans are to animals ($n = 18$) or how similar animals are to humans ($n = 17$). Discrepancies were resolved through discussion.

Analysis of the moral circle task revealed that, as expected, participants who wrote animals-are-human-like essays indicated more inclusive moral circles ($M = 20.44$, $SD = 6.06$) than those who wrote humans-are-animal-like essays ($M = 14.06$, $SD = 8.02$), $t(34) = 2.70$, $p = .011$, $d = 0.94$. Similarly, participants who wrote animals-are-human-like essays attributed more *sensation* to the cow ($M = 6.15$, $SD = .60$) compared with those who wrote humans-are-animal-like essays ($M = 5.43$, $SD = 1.18$), $t(34) = 2.32$, $p = .027$, $d = 0.80$. This pattern was evident for *intellect* (animals-are-human-like: $M = 4.08$, $SD = 1.65$; humans-are-animal-like: $M = 3.38$, $SD = 1.08$; $t(34) = 1.51$, $p = .14$, $d = 0.52$) but was not significant. Overall, the findings reveal that people who, without instructions, compared animals to humans indicated more moral inclusivity toward animals, and believed that cows possess more sensation-related mental states, compared with people who compared humans to animals.

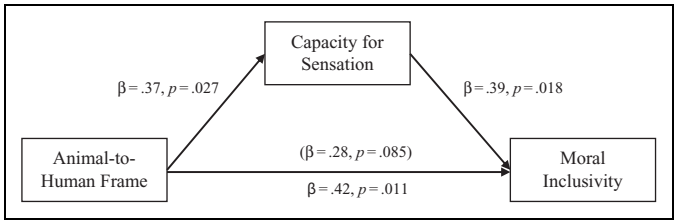

Figure 1. Mediation effects of sensation attribution on moral inclusiveness, Study 1.

Mediation Analysis

To examine whether increased attribution of sensation-related mental states explained the relation between essay framing and moral inclusivity, we conducted a series of regressions (Preacher & Hayes, 2004). Essay frame (coded: *humans-are-animal-like* = 0; *animals-are-human-like* = 1) predicted the attribution of sensation states ($\beta = .37$, $p = .027$) and also increased moral inclusiveness ($\beta = .42$, $p = .011$). When sensation was entered alongside essay frame, sensation ratings significantly predicted moral inclusiveness ($\beta = .39$, $p = .018$). Furthermore, the effect of essay framing on moral inclusiveness became nonsignificant ($\beta = .28$, $p = .085$). To test the significance of the indirect path, we used a bootstrapping procedure. The results demonstrated that the estimate of the mediation effect was significantly different from zero (95% CI [.25, 5.52]; see Figure 1. This suggests that writing an essay that animals are human-like increased moral inclusiveness of animals, in part through increased attributions of sensation-related mental states. This finding supports the moral significance of sensation-related mental states (Gray et al., 2007).

Overall, the findings of Study 1 demonstrate that personal propensities to frame human–animal similarities as "animals-are-human-like" (vs. "humans-are animal-like") are related to an increased tendency to view animals as having morally relevant mental states (i.e., sensations), which in turn predicts increased concern for animals in general. As expected, people naturally think about the human–animal divide in two relatively distinct ways, and these different framings are systematically associated with perceptions of animal's morally relevant

characteristics (i.e., sensation) and moral inclusiveness toward animals (see Waytz, Cacioppo, & Epley, 2010).

Study 2

We sought to replicate the findings of Study 1 within an experimental context that can provide greater insights into causality. In Study 2, participants were exposed to editorials that either compared animals to humans or humans to animals. We then measured moral concern and mind attribution as in Study 1.

Method

Participants

Fifty-two students (34 female; $M_{age} = 22.98$) from an Australian University participated for course credit or $10; 29% self-identified as Australian or New Zealander, 51% as Asian, and the remainder as European or American. One vegetarian was excluded from analyses, leaving $n = 51$. The remainder reported consuming meat on 4.83 ($SD = 2.08$) days per week.

Materials

Participants were exposed to one of two editorials discussing the similarities between humans and animals (from Costello & Hodson, 2010). In one version, animals were compared to humans (animals-are-human-like: e.g., "Animals are motivated to avoid pain and to seek pleasure, just like humans ... like humans, other animals possess the capacity to make choices, create their own destinies, and understand abstract concepts including cause and effects relationships."). The alternate version compared humans to animals (humans-are-animal-like: e.g., "Humans are motivated to avoid pain and to seek pleasure, just like animals ... like animals, much of human behavior is influenced by basic instincts such as hunger, lust, pain avoidance, and pleasure."). The editorials were similar in other respects. After reading the editorial, participants were asked to recall five critical pieces of information and write in their own words the main message of the report. This served as a manipulation check.

Participants then completed a modified version of the moral circle task from Study 1 (Laham, 2009). We varied some of the animals to include more common Australian animals (e.g., pigs, sheep, goats, and cows) and fewer exotic ones (lemurs, hedgehogs, beavers, and squirrels). For the mind attribution task, we also extended our focus beyond cows. Participants viewed a picture of either a sheep or a cow and were asked to rate the same mental states as in Study 1 (sensation: $\alpha = .85$; intellect: $\alpha = .84$). Ratings did not differ across animal type (sensation: $t(47) = 1.55$, $p = .129$; intellect: $t(47) = -0.64$, $p = .525$) and were collapsed.

Results and Discussion

Two participants in the humans-are-animal-like condition were outliers in the moral circle task, circling >23 animals compared to a mean of 10 (>2 *SD*s). They were excluded from analyses, leaving $n = 23$ in the humans-are-animal-like condition and $n = 26$ in the animals-are-human-like condition. Inspection of the manipulation check revealed that participant recall of editorial content was consistent with condition.

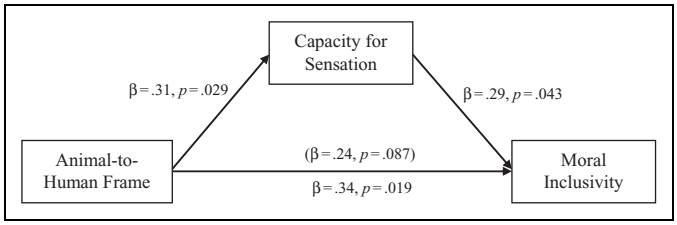

Figure 2. Mediation effects of sensation attribution on moral inclusiveness, Study 2.

Consistent with Study 1, exposure to the animals-are-human-like editorial ($M = 15.00$, $SD = 8.51$) analysis resulted in significantly more inclusive moral circles than did exposure to the humans-are-animal-like editorial ($M = 10.08$, $SD = 4.84$), $t(47) = 2.44$, $p = .019$, $d = 0.71$. Similarly, participants who read animals-are-human-like editorials attributed more sensation-related mental states ($M = 5.39$, $SD = 1.02$) compared with participants who read humans-are-animal-like editorials ($M = 4.61$, $SD = 1.39$), $t(47) = 2.25$, $p = .029$, $d = 0.67$. In the case of intellect-related mental states, there was no difference between conditions (animals-are-human-like: $M = 3.23$, $SD = 1.32$; humans-are-animal-like: $M = 3.48$, $SD = 1.21$; $t(47) = 0.69$, $p = .493$, $d = 0.20$).

Mediation Analysis

As in Study 1, we examined whether increased attribution of sensation-related mental states explained the relationship between the comparison framing (here, an experimental manipulation) and moral inclusivity. Experimental condition (coded: *humans-are-animal-like* = 0; *animals-are-human-like* = 1) predicted greater attribution of sensation ($\beta = .31$, $p = .029$), and also predicted greater moral inclusiveness ($\beta = .34$, $p = .019$). When sensation was entered alongside condition, sensation ratings significantly predicted moral inclusiveness ($\beta = .29$, $p = .043$). Furthermore, the effect of condition on moral inclusiveness became nonsignificant ($\beta = .24$, $p = .087$). Bootstrapping procedures demonstrated that the estimate of the mediation effect was significantly different from zero (95% CI [.09, 3.51]; see Figure 2). Supporting Study 1, this suggests that participants exposed to editorials framing animals-as-human-like showed increased moral inclusiveness toward animals generally, in part through increased attributions of sensation-related mental states.

These findings replicate and extend the results of Study 1 through an experimental paradigm making salient the notion that animals-are-human-like or humans-are-animal-like. As predicted, and consistent with Study 1, framing animals-as-human-like (vs. humans-as-animal-like) led to greater attribution of sensation-related mental states to animals, and greater moral concern.

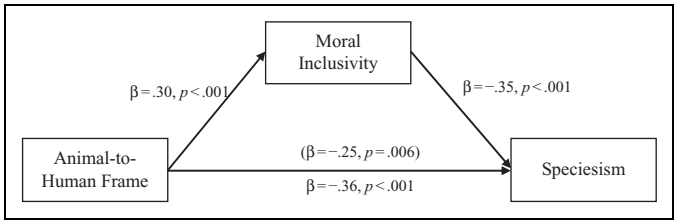

Figure 3. Mediation effects of moral inclusiveness on speciesism, Study 3.

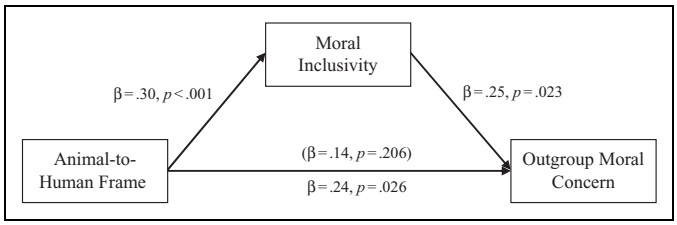

Figure 4. Mediation effects of moral inclusiveness on moral concern for marginalized outgroups, Study 3.

Study 3

Studies 1 and 2 provided evidence that different ways of framing the human–animal divide, either measured as natural tendencies (Study 1) or induced via experimental manipulation (Study 2), have differential consequences for the perceived capacity for sensation and extension of moral concern to animals. Study 3 extended these findings in several ways. First, without a control condition in Studies 1 and 2 we cannot determine whether comparing animals to humans is expanding moral concern, or whether comparing humans to animals is diminishing it. A control condition was therefore included in Study 3. Second, although we used established experimental primes in Study 2 (Costello & Hodson, 2010), the editorials either referred to characteristics of humans that make them similar to animals, or characteristics of animals that make them similar to humans. It is therefore difficult to determine whether the observed effects in Study 2 are driven by differences in framing or by priming participants to view humans as possessing animal-like qualities or animals as possessing human-like qualities. In Study 3, we simply asked participants to write an essay on the similarities between humans and animals to avoid any priming effects, but unlike Study 1, the essay framing that participants employed was experimentally manipulated. Third, we examine whether increased moral concern for animals has implications for attitudes toward animal welfare generally. To this end, we employed a measure of speciesism.

In Study 3, we also consider whether human–animal similarity framing effects have implications for the extension of moral concern more broadly. As we show, comparing animals to humans has the effect of expanding moral concern toward animals due to the increased accessibility of shared attributes such as the capacity for basic sensation. We also expect that this process may have implications for the extension of moral concern toward human outgroups. Recent research has demonstrated that viewing animals as human-like increases favorable outgroup attitudes by promoting a perception of group members as more human (Costello & Hodson, 2010). Our own findings suggest that by focusing attention on the morally relevant capacities that humans share with other species, these framing effects should also make salient the morally relevant capacities shared by all humans. That is, when people become aware of the moral relevance of other species this process should inadvertently trigger greater concern for our own species. On this basis, we predict that increased moral inclusiveness should encompass both other humans, as well as animals, when basic morally relevant capacities shared by humans and animals are made salient.

Method

Participants

Undergraduate psychology students at a Canadian university participated for course credit. Thirteen self-identified vegetarians or vegans were removed from analyses, leaving 109 (89 female; $M_{age} = 18.79$, $SD = 2.19$). Of these remaining participants, 86% self-identified as White/Caucasian. Participants reported consuming meat 5.32 ($SD = 2.87$) days per week.

Materials

Participants were randomly assigned to one of three essay conditions. In the *animal-to-human-comparison* condition, participants were asked to write an essay about "What makes animals similar to humans?" In the *human-to-animal-comparison* condition, participants were asked to write an essay about "What makes humans similar to animals?" In the *control condition,* participants wrote about "What makes telephones similar to computers?" As a manipulation check, after completing the essay, we asked participants to indicate the extent to which they felt animals are similar to humans (1 = *not at all* to 7 = *very much so*).

Participants next completed the moral circle measure from Study 2 before completing a measure of speciesism. This measure included 10 items from the Animal Rights Scale (Wuensch, Jenkins, & Poteat, 2002; $\alpha = .86$), and 10 items from the Animal Attitudes Scale (Herzog, Betchart, & Pittman, 1991; $\alpha = .84$; 1 = *disagree strongly* to 5 = *agree strongly*). Items were aggregated to create a total 20-item "speciesism" ($\alpha = .88$) scale (e.g., *It is perfectly acceptable for cattle, chickens, and pigs to be raised for human consumption, Animal research cannot be justified and should be stopped (reversed), I sometimes get upset when I see wild animals in cages in zoos (reversed)*.

Finally, in order to determine whether human–animal similarity framing affects the extension of moral concern more generally, we also included a measure of moral concern for human groups (Bastian et al., 2011). Participants indicated how much they would feel like intervening or taking a moral stand on

behalf of members of the different groups if "treated unfairly or badly." Ratings ranged from 0 (*not intervene)* to 100 (*definitely intervene*), presented in 5-point increments, for 5 different groups commonly marginalized within Canadian society (i.e., *Black people, Asians, Muslims, Aboriginals, immigrants*). Participants indicated membership in any of the groups.

Results and Discussion

The experimental manipulation proved successful, $F(2,106) = 5.27$, $p = .007$. In the animal-to-human similarity essay frame, participants were more likely to report that animals are similar to humans ($n = 40$; $M = 5.13$, $SD = .99$) than participants in the human-to-animal similarity condition ($n = 34$; $M = 4.38$, $SD = 1.33$, $p = .022$, $d = .64$) and the control condition ($n = 35$; $M = 4.34$, $SD = 1.24$, $p = .014$, $d = .70$). There were no significant differences between the human-to-animal similarity and control condition ($p = .989$, $d = .03$).

We conducted an analysis of variance (ANOVA) to determine whether moral inclusivity varied across conditions. The analysis revealed a significant model, $F(2,106) = 5.30$, $p = .006$, with Tukey post hoc comparisons revealing more inclusive moral circles among participants in the animals-to-human similarity condition ($M = 14.60$, $SD = 6.12$) compared to the human-to-animal similarity ($M = 10.71$, $SD = 5.43$, $p = .015$, $d = .67$) and control ($M = 10.86$, $SD = 6.09$, $p = .020$, $d = .61$) conditions. Comparisons between the control and human-to-animal similarity condition were not statistically significant ($p = .994$).

A similar ANOVA focusing on speciesism also revealed a significant model, $F(2,106) = 7.87$, $p < .001$, with Tukey post hoc comparisons revealing significantly less speciesism among participants in the animal-to-human similarity condition ($M = 2.15$, $SD = .46$) compared to participants in the human-to-animal similarity ($M = 2.61$, $SD = .60$, $p = .001$, $d = .86$) and control ($M = 2.54$, $SD = .58$, $p = .007$, $d = .74$) conditions. There were no significant differences in reported speciesism among the human-to-animal similarity and control condition ($p = .839$).

Mediation Analysis

We next sought to determine whether expanding the moral circle had implications for advocated animal welfare. We conducted a series of mediation analyses using weighted contrasts comparing the animals-are-human-like condition to the weighted combination of the two other conditions, given no differences in the effects of these conditions (Contrast: *animals-are-human-like* $= +2$, *humans-are-animal-like* $= -1$, *Control condition* $= -1$). The condition contrast predicted speciesism ($\beta = -.36$, $p < .001$), such that likening animals to humans (vs. humans to animals and control) was associated with reduced endorsement of speciesist attitudes. The condition contrast also predicted increased moral inclusivity toward animals generally ($\beta = .30$, $p = .001$). When condition contrast was entered alongside moral inclusivity, moral inclusivity significantly predicted speciesism ($\beta = -35$, $p < .001$). Furthermore, the effect of condition on speciesism was reduced but significant ($\beta = -.25$, $p = .006$). Bootstrapping procedures demonstrated that the estimate of the mediation effect was significantly different from zero (95% CI [−.07, −.01]; see Figure 3).

Marginalized Human Outgroups

We also examined whether the effects of framing the human–animal divide have implications for moral concern more broadly. To examine reactions toward outgroups, we removed participants who self-identified as a target-group member ($n = 19$), leaving 90 participants. The ANOVA on moral concern toward human outgroups was significant, $F(2, 87) = 3.35$, $p = .040$. Tukey follow-up tests revealed significantly more moral concern toward outgroups in the animal-to-human similarity condition ($M = 82.75$, $SD = 14.61$) than the human-to-animal ($M = 71.36$, $SD = 19.74$, $p = .011$, $d = .66$), but not the control condition ($M = 76.97$, $SD = 17.18$, $p = .188$). There was no significant difference between the human-to-animal similarity and control condition ($p = .221$).

We next examined the role of moral inclusiveness toward animals in explaining these effects. Using the same meditational approach as above, the condition contrast predicted moral concern ($\beta = .24$, $p = .026$), such that likening animals to humans increased moral concern toward marginalized human outgroups. When condition was entered alongside moral inclusiveness toward animals, moral inclusiveness significantly predicted moral concern ($\beta = .25$, $p = .023$). Furthermore, the effect of condition on moral concern became nonsignificant ($\beta = .14$, $p = .206$). Bootstrapping procedures demonstrated that the estimate of the mediation effect was significantly different from zero (95% CI [.11, 2.42]; see Figure 4). The findings suggests that our animal-to-human framing manipulation increased concern for marginalized outgroups, in part by expanding the circle of moral inclusiveness.

The findings of Study 3 replicate and build upon Studies 1 and 2. First, we replicate our findings for moral inclusiveness, demonstrating that framing effects explain increased moral inclusiveness. Second, we extend this finding, demonstrating that expanding moral inclusiveness positively influences attitudes toward animal welfare. Third, we demonstrate that the effects from Studies 1 and 2 can be obtained simply by framing the direction of comparison between humans and animals. This provides strong support for our hypothesis that simply framing the human–animal divide has consequences for moral inclusiveness. Fourth, inclusion of a control condition reveals that it is the process of likening animals-to-humans (vs. humans-to-animals) that drives the effect of expanding moral concern toward animals. Finally, we demonstrate that framing human–animal similarity comparisons also has implication for the extension of moral concern to marginalized human outgroups.

General Discussion

Across three studies, we find evidence that framing the human–animal divide has significant implications for the expansion of moral concern. Study 1 provides evidence that people naturally frame their thinking about the human–animal divide in divergent ways, comparing animals to humans or comparing humans to animals. Moreover, this natural framing systematically relates to recognition of animal mental states and increased moral inclusivity in predicted ways. Study 2 confirms these effects using an experimental manipulation, suggesting that the differential framing of the human–animal divide generates differences in moral concern. Although people show natural tendencies to frame the human–animal divide in specific ways (Study 1), these framing effects can be manipulated experimentally (Study 2). Finally, in Study 3 we refine our framing manipulation to simply manipulate the direction of comparison between humans and animals, without providing information on similarity or differences between humans and animals. Importantly, we demonstrate that framing effects have implications for attitudes toward a broad range of animal welfare concerns via an increase in moral inclusiveness. Furthermore, we demonstrate that this increase in moral inclusiveness toward other animals extends to heightened moral concern toward marginalized human outgroups.

Overall, we find that the attribution of morally relevant mental capacities (sensation states) explains moral inclusiveness (Studies 1 and 2) and that moral inclusiveness in turn explains attitudes toward animal welfare and moral concern for marginalized outgroups (Study 3). We interpret these findings with reference to previous research on similarity framing (Codol, 1975; Leyens, 1990; Tversky, 1977; Tversky & Gati, 1978), demonstrating that framing effects not only explain differences in the judgment of human–animal similarity, but also have implications for the extension of moral concern toward others. Importantly, we demonstrate that whereas comparing animals to humans increases moral concern, comparing humans to animals produces similar effects to when no relevant comparisons are made (i.e., in the control condition). This finding suggests that comparing humans to animals maintains the status quo, while it is the comparison of animals to humans that produces increased moral inclusiveness.

Importantly, our work holds implications for animal welfare campaigns. It may seem intuitive that focusing on the similarities between humans and animals should have benefits for animals; however, our work shows that done in the "wrong" way (i.e., comparing humans to animals) it may have little positive effect on speciesism and may maintain the status quo, whereby animal rights are arguably neglected.

Focusing on what we share with others improves our favorability toward them (Dovidio, Gaertner, Isen, & Lowrance, 1995; Gaertner, & Dovidio, 2000). Our findings demonstrate that drawing attention to the basic capacities shared by humans and animals has the effect of expanding moral concern, not only to animals but also to human outgroups. Seeing animals as similar to humans triggers greater moral concern by highlighting their morally relevant capacities. However, we speculate that this process also naturally highlights that these same capacities are shared by all humans, thereby triggering increased moral concern for human outgroups. As recently demonstrated by Costello and Hodson (2010), viewing animals as more human-like lessens the derogative value of animalistic outgroup dehumanization and increases favorable outgroup attitudes. In the present case, focusing on animal-to human similarities may inadvertently "humanize" outgroups by highlighting the moral capacities shared with the ingroup, making the outgroup worthy of moral concern. Future research may examine these processes more directly, providing insight into why focusing on the qualities that humans share with animals (as opposed to those qualities that distinguish humans from animals) has positive implications for our care and concern toward other human groups.

In conclusion, our findings provide unique and important insights into the consequences of framing the human–animal divide. Animals and humans share many similarities, but simply thinking about these similarities does not necessarily lead to increased moral concern for animals. *How* the similarity comparison between humans and animals is framed has significant consequences for our treatment of animals and expansion of moral concern to others more broadly.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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