The effects of stereotypes about animals' competence and warmth on empathy choice

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Abstract

The present preregistered research examined whether animal stereotypes predicted choosing to empathize with them. In two studies (*N*'s = 173 and 202), participants chose between taking an empathic or objective perspective with 48 animals representing 16 different species, classified into four groups representing perceived competence and warmth. While less likely to choose an empathic than an objective perspective for all animal groups, empathy choice was stronger for species stereotyped as high-competent (vs. low-competent, Study 1 and 2) and high-warmth (vs. low-warmth, Study 2 only) species. Variation in cognitive difficulty of being empathic (vs. objective) helped explain empathy choice preferences derived from stereotypes about animals, most robustly stereotypes about an animal's competence (Studies 1 and 2). Suggesting the importance of empathy choice, empathy choice was positively associated with the amount participants were willing to donate toward each animal's welfare (Study 2).

Key Words: motivated empathy, animals, stereotypes, competence, warmth

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People have an ambivalent relationship with animals. Some animals (e.g., pets) are considered our closest companions (McConnell et al., 2017). Yet, for many, other animals (e.g., snakes) are feared and seen as disgusting (Polák et al., 2019). In between, people respect some animal species (e.g., tigers; Sevillano & Fiske, 2016a, 2016b) but still take actions that threaten their existence by directly killing them or destroying their habitats (Burke, 2015; Guynup, 2014). People instructed to empathize with threatened animals report altruistic motivations and willingness to help them (Berenguer, 2007; Sevillano et al., 2007; Swim & Bloodhart, 2014). However, without such prompts, people may selectively choose to empathize with some animals more than others, resulting in uneven care and protection (Miralles et al., 2019).

The present research aims to understand psychological motives influencing preferences to take an empathic versus an objective perspective for some animal species more than others. Within the range of different types of empathy (Batson & Ahmad, 2009; Hall & Schwartz, 2019), here we consider facets of empathy that involve sharing another's internal experience. In contrast, being objective involves describing another's external features. Consistent with Cameron et al. (2019), empathy *choice* refers to the decision to share in an internal experience of animals (i.e., be empathic) rather than describing external features (i.e., be objective) for a particular animal or averaged across animals.

Additionally, empathy choice *preferences* refer to the preference for this decision for certain animals more than other animals (i.e., a within-person effect). The purpose of the present research is to consider a) whether empathy choice preferences are influenced by stereotypes about the animals, b) whether appraised difficulty in being empathic (vs. objective) is associated with empathy choice preferences, and c) whether appraised difficulty in being empathy explains the effects of stereotypes on empathy choice preferences.

Stereotypes about Animal Competence and Warmth

Competence and warmth are argued to be universal social-cognitive dimensions of perceptions of humans (Fiske et al., 2007) that can similarly be applied to perceptions of animal species (Sevillano & Fiske, 2016a, 2016b, 2023). Competent groups have more general capacities or power (e.g., intelligence and skills) to achieve their goals than less competent groups. Warm groups are more non-threatening and friendly than less warm groups. These two dimensions result in four social categories of humans and similar categories of animals. The animal groups categorized by two levels of competence and warmth are (1) Companion animals, such as dogs, horses, and cats (high-competence/high-warmth); (2) Predators, such as tigers, bears, and lions (high-competence/low-warmth); (3) Prey (aka subordinate animals), such as cows, rabbits, and hamsters (low-competence/medium to high-warmth[1]); and (4) Pests, such as lizards, hippos, and snakes (low-competence/low-warmth; Sevillano & Fiske, 2016a, 2016b, 2023).

Competence and warmth stereotypes may contribute to variation in choosing to empathize with animals as suggested by effects of stereotypes on the treatment of different animals. Competence and warmth are positively associated with willingness to help and not harm animals (Sevillano & Fiske, 2016a, 2016b, 2019). Perceptions of dolphins versus sharks suggest that dolphins would be classified as companion animals (high competence, high warmth) and sharks as predators (high competence, low warmth). While this study cannot address treatment of high vs low competence, following perceiving dolphins as warmer than sharks, people have more favorable conservation attitudes and donation preferences for dolphins than sharks (Neves et al., 2022). These associations and the role of empathic concern in helping people (Batson, 2011) suggest that competence and warmth may contribute to empathy choice preferences among different animals.

Research on moral concerns suggests that perceived competence influences empathy (Crimston et al., 2018). High-sentient animals may be perceived as competent because of associations between mental abilities and competence (Fiske et al., 2007). Moreover, moral concern is greater for high-sentient animals (e.g., dolphins, chimpanzees, and cows) than low-sentient animals (e.g., fish, chickens, bees), and expansive moral concern is associated with greater empathy (Crimston et al., 2016). Thus, to the extent that greater empathy is a result of choosing to be empathic, then people may choose to be more empathic with more competent animals. However, via the lens of the stereotype content model applied to animals (Sevillano & Fiske, 2016a, 2016b, 2023), high-sentient animals

included in research studying moral concern are also stereotyped as warm (Crimston et al., 2016), suggesting the value of independently examining competence and warmth as we do in the present research.

Focusing on warmth, research investigating the effects of conflict with animals and treatment of animals suggests the importance of warmth for empathy. Perceived realistic conflict between humans and animals (e.g., over land), with conflict suggesting low warmth, is a proposed source of less concern over animal welfare (Amiot & Bastian, 2015). Similarly, people are more willing to give resources to, make sacrifices for, and consider the importance of fairness for beetles described as not in conflict with and being of utility to people (Opotow, 1994). To the extent that similarity can be used as a cue for interpersonal warmth and cooperation (DeSteno, 2015), this association may explain why in previous work, people more often choose empathy and compassion for more phylogenetically close animals (Miralles et al., 2019).

Cognitive difficulty and motivated empathy

From a motivated empathy perspective, empathy can be difficult, and people regulate their emotional state by assessing the projected costs and benefits of being empathic (Cameron, 2018; Hodges & Biswas-Diener, 2007; Zaki, 2014). Appraised costs and benefits can be influenced by economic consequences (e.g., an obligation to help someone harmed), social consequences (e.g., reputation), and appraised cognitive difficulty (e.g., difficulty determining another's internal state) of being empathic. Being

empathic with people is perceived as more effortful than being objective (Cameron et al., 2019). Such perceptions are negatively associated with choosing to be empathic (vs. objective) for various human target groups that vary in race and gender (Cameron et al., 2019). Cognitive difficulty of empathizing with an animal (e.g., koalas) is also negatively associated with choosing to empathize with that animal (Cameron et al., 2022).

Here we focus on variation in motivated empathy across different animal species. Keysers and Gazzola (2014) differentiate between a general ability to be empathic and a propensity to be empathic. They argue that general ability provides an upper bound to one's likelihood of being empathic, whereas propensity varies from situation to situation as people decide whether to empathize within particular contexts. Thus, independent of a general ability to be empathic with animals, there will likely be variation in the propensity to be empathic for some animals more than others. Moreover, from a motivated empathy perspective, variation in the propensity to empathize among animal targets (i.e., empathy choice preferences) might be explained by variation in the perceived difficulty in being empathic among animal targets. For example, Cameron et al. (2022) illustrated that different tendencies in choosing to be empathic with humans versus animals could be explained by differences in the assessed difficulty of being empathic with humans versus animals (in that paper, the animals were koala bears).

In the present research, we test whether variation in perceived difficulty of being empathic relative to the perceived difficulty of being objective among different animal species is associated with variation in empathic choices among animal species (i.e.,

empathy choice preferences). We further test whether stereotypes about competence and warmth influence assessed difficulty in being empathic (vs. objective) and, subsequently, empathy choice preferences.

Inferring emotions from an animal perceived as competent may be easier than those perceived as less competent. Traits used to assess competence, such as skill and intelligence (Sevillano & Fiske, 2016b), imply mental capabilities. The belief that animals have mental states similar to people is associated with attributing emotions to animals, perhaps via anthropomorphizing animals (Urquiza-Haas & Kotrschal, 2015; Wilkins et al., 2015). Eddy et al. (1993) found that greater perceived similarity between 30 different animals plus humans was associated with inferring more cognitive abilities. These inferred cognitive abilities could signal greater perceived confidence in one's ability to access animals' internal states via anthropomorphizing. For example, Epley et al. (2007) argue that anthropomorphizing is an inductive process where a perceiver accesses their knowledge about a target and then uses that knowledge to infer characteristics of a target. Thus, an animal perceived as incompetent may increase the difficulty in being empathic relative to an animal perceived as more competent. According to a motivated empathy perspective, this difficulty will diminish the likelihood they will be empathic with an animpal perceived as incompetent relative to an animal perceived as competent.

Perceived warmth may influence the desirability of being empathic, with less desirability making it more difficult to be empathic. Perceived conflict or threat is associated with

low-warmth and high-competence animals, and disgust and contempt are sometimes associated with low-warmth and low-competent animals (Sevillano & Fiske, 2019). These associations suggest that drawing oneself psychologically close to low-warmth animals rather than being objective and psychologically detached will be more aversive and, thus, more psychologically difficult than with high-warmth animals. Therefore, relative difficulty of being empathic (vs. objective) here is not based on confidence in being able to be empathic but on the greater aversion of drawing close to low-warmth animals more so than high-warmth animals.

Research on motivated empathy and the above logic suggest the previously argued variation in competence and warmth across animal species on empathy choice preferences may be explained by the effects of competence and warmth on cognitive difficulty of empathizing with these animals. That is, there may be an indirect effect of competence and warmth on empathy choice preferences via the perceived difficulty in being empathic.

Present Research

In two studies, with Study 2 replicating Study 1, we predicted that participants would show greater preference to be empathic (vs. objective) for animals stereotyped as being high-competent than those stereotyped as low-competent (Hypothesis 1) and animals stereotyped as being high-warmth than animals stereotyped as low-warmth (Hypothesis 2). We predicted that, within participants, greater difficulty in being empathic (vs.

objective) across animal species would be negatively associated with empathy choice preferences (Hypothesis 3). This pattern would indicate a motivation to be empathetic (more than objective) for some species more than others. This prediction is consistent with between-person associations in prior work on empathy choice for humans (Cameron et al., 2019; Scheffer et al., 2021) and animals (Cameron et al., 2022). Yet, because the prediction is within-participant, our design eliminates the possibility that third variables, such as trait empathy, might account for negative associations found in studies testing between-person associations. Also, focusing on within-person effects, we predicted that relative difficulty in being empathic (vs. objective) by animal type would mediate the effect of competence and warmth on empathy choice preferences (Hypothesis 4).

We do not assess whether empathy choice is associated with feeling empathy (which has been suggested by findings from Cameron et al., 2019, Study 11), but we do test whether empathy choice is associated with willingness to help animals. That is, the predictions noted above assess predictors of choosing to be empathic, rather than to be objective and thus, non-empathetic. Choosing to empathize can be regarded as a behavioral choice worthy of study in its own right, for example, as an indicator of emotion regulation strategies such as situation selection (Cameron et al., 2019; Cameron, 2018). Yet the potential implications of empathy choice for helping behaviors were of interest. Thus, in Study 2, we added a measure of willingness to donate money to the welfare of each animal species they considered in the study. Choosing to empathize with child refugees is positively associated with willingness to donate money to an international relief organization (Cameron et al., 2019; Study 11). Extending to animals, we predict empathy

choice preferences would be positively associated with donation preferences across animal categories (Hypothesis 5). Therefore, we test whether Cameron et al.'s (2019) between-person correlation of donation with empathy choice extends to a within-person correlation between empathy choice preferences among varying animals and preferences to donate money to help the same animals.

Method

Pre-registration on the Open Science Framework specified sample size, exclusions, variable creation, and analyses (Study 1: https://doi.org/10.17605/OSF.IO/TH653; Study 2: https://doi.org/10.17605/OSF.IO/TH653). Relative to the pre-registration, hypotheses were edited, combined, and renumbered for clarity but encompassed the same hypotheses. Pre-registration tests of associations between empathy choice and contact with animals, willingness to eat animals, perceived warmth, and competence are reported at the same OSF address. This research was approved by the authors' institutional IRB: Study00008983.

Participants

Using power equal to .80, alpha equal to .05, correlation among repeated measures assumed to be equal to 0.50, power analyses with a 2 x 2 within-person analysis with an effect size of f = .10 (small), required 180 participants and effect size of f = .25 (medium) required 30 participants (GPower, Faul et al., 2007). Because we had not previously used

an empathy selection task comparing across animal groups, we assumed small effect sizes for Study 1. Some of the effect sizes in Study 1 were small, so we anticipated they would also be small in Study 2. Further, assuming we would need to exclude participants following pre-determined exclusion criteria, we recruited 200 (Study 1) and 251 (Study 2) participants from the [deidentified] psychology department participant pool. Participants were given course credit for their participation.

Following pre-registration, 27 of the 200 participants in Study 1 and 49 of the 251 participants in Study 2 were disqualified and removed from the studies based upon not answering or responding with nonsense answers in open-ended responses required within the empathy selection task. These exclusions resulted in a final sample size of 173 in Study 1 and 202 in Study 2. A slight majority identified as women (53% & 55%). Most identified as White (Study 1: 76% and Study 2: 70%) and were college students (Study 1: 18 to 42 (M = 19.82, Mdn = 19, Study 2: 18 to 54 (M = 19.49, Mdn = 19). In separate analyses for each demographic variable, we tested whether demographic groupings moderated effects of competence and warmth on empathy choice. There only moderated effect in Study 1 was not replicated in Study 2.

Procedure

After providing informed consent, the empathy selection task was described to participants. Then participants needed to respond correctly to two questions that ensured

they understood the instructions (see supplemental materials). If they responded incorrectly, they were asked to re-answer the question until they gave the correct response. Next, they completed the empathy selection task. After the empathy selection task, participants completed the following measures in the following order: cognitive difficulty for being empathic and cognitive difficulty being objective, perceived warmth and competence, willingness to eat, contact, and willingness to donate. Each measure had a question for each of the 16 animal species included in the empathy choice task. As noted above, results for perceived warmth and competence, willingness to eat, and contact are at the same OSF location as the pre-registration. Last, participants provided demographic information and were debriefed.

Materials

Empathy Selection Task. The empathy selection task is a behavioral measure of empathy regulation, validated and used in previous work (Cameron et al., 2019; Cameron & Inzlicht, 2020; Cameron et al., 2022; Ferguson et al., 2020; Hu et al., 2020). Participants choose between two virtual decks of cards: A "Describe deck" and a "Feel deck" for each entity presented to them. In the present study, the entities were 16 animal species. In the instructions, participants were told that if they selected the "Describe deck", they were to be objective, focusing on external appearances, and if they selected the "Feel deck", they were to be empathic, focusing on sharing the animal's internal experiences (see supplemental materials for exact wording). Participants freely selected decks and were told they could switch decks whenever they wanted.

In each trial of the empathy selection task, participants saw a descriptive label for the intended target (e.g., "Domestic Cat") above the virtual "Describe deck" and the "Feel deck". After selecting one deck, participants saw an exemplar picture depicting the target animal species and a shortened version of either the "Describe" or the "Feel" instructions corresponding to their selection. Under the shortened description, they were told, "Please write three words [describing this animal/about what this animal is experiencing or feeling." They typed their responses in a blank box under this statement. This selection task was repeated until participants made choices for 16 animal species, each paired with three exemplars, totaling 48 choices presented in random order.

Animal pictures and categorization. Pictures of the 48 animals presented to participants were obtained from internet searches and are available upon request. All pictures were front views of the animals' faces, except for lizards, because we could not find lizard pictures from this view.

The 16 species represented four types of target animal species within the four clusters derived from Sevillano & Fiske (2016b): high-competence/high-warmth: domestic cats, elephants, horses, domestic dogs (replaced by monkeys in Study 2); low-competence/high-warmth: cows, ducks, hamsters, rabbits; high-competence/low-warmth: bear, leopards, tigers, lions; low-competence/low-warmth: chickens, hippopotamuses, lizards, snakes). We replaced dogs with monkeys in Study 2 because, although dogs were in the high-competence/high-warmth cluster, they were an outlier in perceived warmth ratings. Removing dogs from analyses in Study 1 resulted in the same pattern of effects reported below.

Confirming the four groups, in both studies we replicated Sevillano and Fiske's (2016b) four clusters and two dimensions of competence and warmth (see supplemental materials). The replications used participants' continuous ratings of competence and warmth that they provided after the cognitive difficulty ratings. This replication confirmed our use of each species to represent the four animal types. The two dimensions confirmed our use of a 2 x 2 analyses representing warmth and competence with the a priori categorization of animals.

Measures

Empathy Choice. Participant's empathy choice selection for each of the 16 species was used to determine average empathy choice for the four types of target animals. First, for each of the 16 species, scores ranged from 0 to 1, reflecting the proportion of times participants chose to empathize with the three exemplars representing a particular species. Second, the proportions for the four species defined each animal cluster (high-competence/high-warmth; low-competence/high-warmth; high-competence/low-warmth; low-competence/low-warmth) were averaged to indicate the average proportion of times participants empathized with the four types of target animals (a ranged from .73 to .80 across both studies).

Cognitive difficulty. After the empathy selection task, participants indicated how difficult they found empathizing with each of the 16 species using a five-point scale ranging from "Very easy to be empathic" (0) to "Very difficult to be empathic" (4). Likewise, they indicated how difficult they found being objective with each of the 16 species using a five-point scale ranging from: "Very easy to be objective" (0) to "Very difficult to be objective" (4). Half the participants rated difficulty being empathetic first and half rated the difficulty being objective first. These measures were correlated with each other (Study 1: $r(2,580) = 0.27$, $p < 0.001$, Study 2: $r(3,001) = 0.29$, $p < 0.001$. Ratings of being objective were subtracted from ratings of being empathic, so higher scores indicated greater difficulty being empathic than objective for each species. These ratings are different than the multiple-item measure used in previous empathy choice studies (e.g., Cameron et al., 2019). The difficulty measure for each species type captured

the essence of difficulty while reducing the number of items participants were asked to complete if we had used the previously used measure.

Willingness to donate. Unique to Study 2, participants indicated the amount of money they would be willing to donate to each of the 16 species via an animal welfare organization, using a slider scale ranging from $0 to $30 ($M$ = 13.70, SD = 6.99).

Results

Empathy choice by competence and warmth

We conducted a 2 (Competence: Low vs. High) x 2 (Warmth: Low vs. High) repeated measures ANOVA predicting empathy choice. High and low competence and warmth were the *a priori* identified dimensions and resultant clusters established by Sevillano & Fiske (2016b) and replicated in our analyses (see supplemental materials). In both studies and across animal types, participants were less likely to choose to be empathic than objective, as indicated by empathy choice being less than chance (.50) for high and low competence species and high and low warmth species, $p < 0.001$ (see Table 1). That is, on average, they were less likely than chance to be empathic and more likely than chance to be objective in all conditions of the study. Yet, the ANOVA indicated that there were differences in average proportion of time they choose to be empathic (versus choose to be objective) based on the animal type's perceived competence and warmth. Consistent with Hypothesis 1, the proportion of time participants choose empathy was higher with high-

competence than low-competence animal species. Consistent with Hypothesis 2, the proportion of time participants choose empathy was higher with high-warmth than low-warmth animal species, albeit the effect was only marginally in Study 1, $p < 0.10$ (see Table 2).[2] There was no interaction between competence and warmth in either study (Study 1: $F(1, 172) = 0.95$, $p = 0.332$, $\eta^2_p = .01$, Study 2: $F(1, 201) = 0.04$, $p = .836$, η^2_p 0< .001).

<Insert Table 1 and Table 2 about here>

Cognitive difficulty

Participants reported more cognitive difficulty (vs. ease) when they were empathic than when they were objective (See Table 3). Per our preregistered predictions, we used multi-level modeling to test the associations between cognitive difficulty and empathy choice and test task difficult as a mediator between predictor variables of warmth and competence and the outcome variable of empathy choice (Selig & Preacher, 2008). Analysis formulas can be found in supplemental materials. Random intercept models tested within-person associations. Random intercepts accommodated individual variation in empathy choice. There were no between-person variables. Each of the 16 species was nested within each person. Each of the 16 species was classified as either high or low competence and high or low warmth and nested within participants. The classification was *a priori* derived from the stereotype content model as applied to animals (Sevillano & Fiske, 2006).

Consistent with Hypothesis 3, cognitive difficulty being empathic (vs. objective) was negatively associated with empathic choice (see Table 3). That is, participants empathized with one species less than another species when they perceived that it was more difficult to be empathetic than objective for that species relative to the other species. Importantly, we document this at the within-person level, showing that within participants, different animals provided varying degrees of challenging empathetic contexts.

<Insert Table 3 about here>

Results from mediation analyses were consistent with the predicted effects specified in Hypothesis 4 (see Figures 1). Participants were more likely to choose to be empathic for high vs. low competent animals and high vs. low warmth animals (see Table 1 for these direct effects). Competence and warmth were negatively associated with cognitive difficulty. Cognitive difficulty was negatively associated with empathy choice in the mediation model. And the indirect effects from competence and warmth to empathic choice via cognitive difficulty was significant.

<Insert Figure 1 about here>

Willingness to donate

Consistent with Hypothesis 5, in Study 2, within participants, empathy choice preferences across species were positively associated with donation preferences across species, b_{1j} = 3.20, $t(2,705) = 4.78$, $p < 0.001$, 95% CI [1.89, 4.52], $R^2 = 0.01$. Formulas for the analyses can be found in supplemental materials. Thus, the more participants preferred to empathize with an animal species over other animal species, the more likely they preferred to donate to that animal species over other animal species.

We explored whether competence and warmth (defined by the 2 x 2 analyses and a priori categories) would predict willingness to donate. Replicating results for empathy choice, there was a main effect for competence, $F(1, 143) = 272.31$, $p < 0.001$, $d_z = 1.38$, and warmth, $F(1, 143) = 16.84$, $p < 0.001$, $d_z = 0.34$, on willingness to donate. However,

unlike findings for empathy choice, there was also an interaction between competence and warmth predicting willingness to $F(1, 143) = 10.96$, $p = 0.001$, $\eta^2_p = 0.07$. Bonferroni corrected follow up tests revealed that participants were more likely to donate to high vs. low competence species for both low warmth animals (Low warmth-High competence: $M = 17.67$ vs. Low warmth-Low competence: $M = 8.94$, $SD = 9.05$) and high warmth animals (High warmth-High competence: $M = 18.19$, $SD = 10.14$ vs. High warmth-Low competence: $M = 11.41$, $SD = 9.70$), $ps < 0.001$. Yet, consistent with the presence of an interaction, a tendency to donate to high warmth animals more than low warmth effects was found within low competent animals (High warmth-Low competence: $M = 11.41$, $SD = 9.70$ vs. Low warmth-Low competence: $M = 8.94$, $SD = 9.05$, $p < 0.001$), but not high in competence (High warmth-High competence: $M = 18.19$, $SD = 10.14$ vs. Low warmth- High competence: $M = 17.67$, $SD = 9.70$, $p = 0.308$). Considering contrasts between high and low competence alongside of contrasts between high and low warmth, the pattern of result was that participants were least likely to donate to the low warmth-low-competent animals.

Discussion

It is valuable to understand when people choose to empathize with nonhuman animals because empathizing with animals is a mechanism for increasing the likelihood of helping nonhuman animals (Berenguer, 2007; Sevillano et al., 2007; Swim & Bloodhart, 2014). The present research provides a novel approach to understanding variation in the choice to be empathic (i.e., sharing another's emotional experience) versus be objective,

by testing the role of stereotypes about groups (here, groups of animals) on these empathy choice preferences. As with empathy choices for people (Cameron et al., 2019; Cameron & Inzlicht, 2020), participants were less likely, on average, to choose to be empathic than objective for animals. Yet, stereotypes about competence and, to a lesser extent warmth, predicted the extent to which they made this choose. Additionally, by examining variation in appraised difficulty in being empathic (vs. objective) across species, the paper provides insights into within-person choices about empathizing versus being objective for different targets. Perceived greater difficulty in being empathic than objective for certain species more than others helped explained why stereotypes about animal species' competence and warmth influence empathy choice preferences across animal species. Also, the association between empathic choice preferences and donation preferences suggests that empathy choice could influence relative preferences in helping some animals more than others.

Potentially crucial for understanding which species are helped more than others, stereotypes about animal species' competence and warmth predicted empathy choice preferences. Participants were likely to choose to be empathic rather than objective with animals perceived as being high than low in competence and high than low in warmth. In both studies, the effect size for competence on empathy choices was greater than that for warmth on empathy choices. Following the smaller effects size, the effect for warmth was marginally significant in Study 1 and significant in Study 2.

The more cognitively difficult it was to be empathic (vs. objective) with a particular

animal species relative to other animal species, the less likely participants chose to empathize with that animal species (vs be objective) relative to other animal species. This association is consistent with the finding that relative difficulty empathizing with humans versus animals is associated with relative differences in choices to empathize with humans versus animals (Cameron et al., 2022). Thus, our findings with cognitive difficulty are consistent with the argument that empathy can be hard and that its difficulty can inhibit choices to empathize (Cameron et al., 2019). Because the study used within-person analyses, our study adds that empathy choice preference among animals can be affected by within-person relative perceived difficulty in empathizing with different animals, independent of a person's general tendency to empathize with animals.

While participants on average perceived it was more difficult to be empathic then objective, participants perceived it was less difficult to be empathic (vs. objective) for stereotypically high competent than low competent animals. The possibility that animal competence implies mental states like those of humans (e.g., Eddy et al., 1993) and people are more likely to infer emotions in animals that are assumed to have mental states similar to people (Urquiza-Haas & Kotrschal, 2015; Wilkins et al., 2015) suggests why competence predicted cognitive difficulty ratings and was associated with empathy choice: Participants may believe it is easier to detect emotions in stereotypically high-competent (vs. low-competent) animals. The mediation analyses suggest this greater ease in being empathic than objective with stereotypically competent species (relative to less stereotypically competent species) subsequently motivates the decision to empathize (rather than be objective).

We found similar effects for warmth across studies. In both studies, participants perceived it was less difficult to be empathic (vs. objective) for stereotypically high warm than low warm animals. Also, we found an indirect effect from warmth to empathy choice via cognitive difficulty. Our prediction for warmth was derived from the assumption that being empathic (vs. being objective) would be harder for less warm animals (vs. more warm animals) because sharing internal experiences with an animal perceived as threatening, disgusting, or contemptuous would be less appealing. Yet, there was no actual likelihood of threat from animals or contact with them in the present studies, potentially explaining the weak effects of warmth on empathy choice. Moreover, the presence of an indirect effect but no total effect in Study 1 suggests that suppressors may counter the indirect effect (MacKinnon et al., 2000; Rucker et al., 2011). Perhaps the suppressor is that it is appealing to empathize with low warmth (high threat) species in the safe context of the study.

Suggestive that empathy choice has practical consequences for animals, the more people choose to empathize with an animal, the more likely they were to donate to that animal. Because this is a within person effect, the association is a function of characteristics of the animals and not characteristics of people who tend to choose to be empathic. Our exploratory analyses revealed that one characteristic is the ascribed competence of the animal, with participants donating more to stereotypically high than low competent animals. Moreover, the pattern of result was that the low-warmth-low-competent animals were distinct from the other three types of animals, with participants being least willing

to donate to that group.

Limitations and future research

Future research could examine more fully the behavioral implications of empathy choice. First, enhancing perceived efficacy in one's ability to empathize increases choices to empathize with people (Cameron et al., 2019). Making it easier to interpret animals' emotions could increase empathy with animals and, as a result, increase helping that species. Second, we found within-person that empathy choice and donations were correlated in Study 2. Research demonstrating that perspective-taking increases donations to help animals (Swim & Bloodhart, 2014) suggests that empathy choice preferences in the present study may have have resulted in helping certain species over other species. Exploratory research suggest that it is worth examining how stereotypes about competence and warmth may both influence donation preferences across species. However, the within-person correlation in the present research is an association and not necessarily a causal relationship. Although the within person effect rules out characteristics of people explaining the association, a third variable that varies similarly across animals could account for the association. Third, a range of behavioral outcomes is worth examining to understand the effects of stereotypes on helping animals. Like Sevillano and Fiske's (2019) studying the consequences of stereotypes on behaviors, it may be worth distinguishing between passive and active harm and helping.

The animal pictures in the study were selected to have "neutral" expressions. Future research could test empathic responses to animals displaying or inferred to be experiencing different types of emotions. Affective displays, whether positive or negative, could make the task cognitively easier because displays of emotions may make it easier to infer internal experiences. Yet, positive and negative emotions may have different psychological consequences for empathy. Positive emotions could increase the psychological reward of emotionally connecting with an animal. In contrast, negative emotions could be psychologically painful. Exposure to pictures of distress due to human actions has been the focus of research on the effects of encouraging empathic perspective-taking on helping animals (Berenguer, 2007; Sevillano et al., 2007; Swim & Bloodhart, 2014). The psychological pain from this type of distress may be particularly poignant if one is unwilling or unable to change the human cause of the problem, potentially reducing motivation to choose to be empathic. However, we note that empathy avoidance was found for both positive and negative human targets in prior work (Cameron et al., 2019).

Our results may be limited to the animal species we selected. Although the reliability of empathy choice within clusters was strong, different exemplars within animal species could matter. For example, snakes vary in the extent to which they are deadly, and dogs have been bred based on different types of utility to people. For example, "working dogs" were bred to help people, whereas "toy dogs" were bred to be companions (American Kennel Club, n.d.). Moreover, a wider range of species might result in larger contrasts

between low and high-competent and low and high-warm animals, potentially enhancing the effect sizes found in the present research.

The present study is the first to relate stereotypes about competence and warmth to empathy choice preferences. Taking the stereotype content model back to its origins in understanding social-cognitive processes influences responses to different groups of people, one could test whether these same stereotypes influence empathy choice preferences among different groups of people. Competence and warmth are related to emotional prejudice (e.g., pride for ingroups and contempt for outgroups) and theoretically explain discriminatory behavior (Fiske, 2018). The empathy selection task could assess discriminatory behavior in the form of empathy choice preferences among different human targets potentially *a priori* defined in terms of stereotypes about their competence and warmth.

Conclusion

Animals are diverse, with varying stereotypes ascribed across species (Sevillano & Fiske, 2023). This variation has implications for the decisions people make about whether to take the perspective of one species more than another, and then, potentially, the downstream effects of such empathy choice on feeling empathy and helping some species more than others. Our research extends the assertion that empathy is motivated and can be hindered by its cognitive difficulty (Cameron et al., 2019, 2022; Cameron & Inzlicht, 2020) to understanding why people will take the first step of choosing to be empathic

with some species more than others. Our research demonstrated that stereotypes about animals influences cognitive difficulty, and subsequently contributes to preferring to empathize with some species more than others. We find that stereotypes about an animal's competency is particularly relevant to such choices, but stereotypes about an animal's warmth can also influence them, with cognitive difficulty being a reason for both of these stereotypes on empathy choices. Because our analyses were within-person, we demonstrated that the association between cognitive difficulty and empathy choice is not a result of general willingness to be empathic but a result of characteristics of targets of empathy.

Endnotes

[1] Relative to pests and predators, prey are high in warmth, but prey are not as high in warmth as the companion animals, resulting in prey being characterized as moderate in warmth.

[2] We pre-registered comparing four clusters in a one-way ANOVA as an alternative to the 2x2 analyses reported here. Results confirmed a stronger effect for competence than warmth in both studies. Study 1 results suggest a stronger preference for high-warmth vs. low-warmth animals for high-competent but not for low-competent animals. However, this difference in empathy choice between high and low warmth preferences within competence was not replicated in Study 2, and our 2x2 analyses in both studies indicated no interactions between competence and warmth.

The authors state there are no conflicts of interest.

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