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An Experimental Analysis of Empathy: Comparing Animal and Human Responses to Emotional Distress

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ABSTRACT

This study seeks to elaborate on the emotional response of humans towards other humans and animals. In these circumstances, a video presentation has been utilized as the source of the specific details that will be used in an assessment to be answered by the participants. To ensure the accuracy and reliability of the study, 20 college students were carefully selected. These participants were screened to exclude individuals with a history of traumatic experiences involving animals or humans, minimizing potential biases that could influence their emotional responses. A paired sample t-test was utilized since the researchers used a within-subject design. The p-value of 0.001 is below the threshold of 0.05. This signifies a statistically significant difference in empathy scores between the two groups, with participants exhibiting greater empathy towards animals than humans, as indicated by the positive t-statistic. Based on these findings, the null hypothesis was rejected, stating no difference in empathy scores between humans and animals.

INTRODUCTION

Do humans feel more empathy for animals or their fellow humans? Empathy refers to the capacity to emotionally resonate with the feelings of others, encompassing feelings of sympathy and concern. According to Gamble *et al.* (2024), empathy is a core aspect of human social cognition that plays an essential role in social interactions and is, therefore, integral to our emotional well-being. The growing connection between humans and animals has prompted researchers to explore the links between empathy towards other humans and empathy towards animals.

Moral philosophers, including Kant, have long suggested that there is a positive correlation between compassion for animals (human-animal empathy) and compassion for people (human-human empathy) (Cardoso *et al.*, 2022). It is generally thought that individuals who possess a high level of empathy towards humans are likely to extend that empathy to animals as well, meaning they can emotionally relate to the feelings of animals. For example, people who exhibit violence towards animals and show low levels of empathy towards them may also show similar aggressive behavior and lack of empathy towards humans. While human-centered and animal-centered empathy is based on similar psychological processes, they are distinct and affected by different influences. Research indicates that pet owners tend to show greater empathy towards animals but may exhibit lower empathy towards humans than those without pets. Furthermore, a correlation between human- and animal-centered empathy was noted among those who adopted a pet, but not in those who gave one up. This suggests that while human-centered empathy can be connected to animal-centered empathy, they are fundamentally different (Giacomin *et al.*, 2023). Past studies on empathy have produced varying results.

Some research emphasizes more intense emotional reactions towards animals, whereas other studies concentrate on empathy for other humans. These differing results raise interesting questions about the essence of human empathy. A study by Gómez-Leal *et al.* (2021) examined the connection between emotional intelligence (EI) and compassion for both people and animals, and their research showed that human and animal empathy are positively correlated. While the association between EI and empathy for animals depended on the participants' prior experience with pets, the results also supported the notion that EI is favorably connected to empathy for people. Another study by Gu *et al.* (2024) investigates the triadic relationships between pro-animal sentiments, empathy for animals, and empathy for humans using a cross-sectional survey approach indicating that (a) higher frequency and quality of contact with companion animals significantly predicted more empathy with humans and other animals as well as more positive attitudes toward animals; (b) older participants exhibited more empathy with humans than younger participants, but younger participants exhibited more empathy with animals than older participants; (c) empathy with animals fully mediated the relationship between attitudes toward animals and empathy with humans. And lastly, a study by Faner *et al.* (2024) that investigates the link between pet attachment, animal empathy, and prosocial view towards humans, proposes that animal empathy mediates the relationship between pet attachment and prosocial views. While empathy for both humans and animals has been extensively studied, there is a gap in research regarding how distressing situations specifically impact people's empathy toward humans vs. animals. Our study aims to assess participants' emotional states before the

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experiment to control for personal biases that may influence their responses. An experiment on empathy towards animals versus humans in response to distressing videos could reveal how emotional reactions differ based on the subject's species, offering insights into the factors influencing empathy in emotionally charged situations. This research could inform strategies to enhance empathy in educational, therapeutic, and advocacy contexts, highlighting the role of emotional stimuli in shaping compassionate behavior toward both humans and animals.

This study seeks to elaborate on the emotional response of humans towards other humans and animals. In these circumstances, a video presentation has been utilized as the source of the specific details that will be used on an assessment to be answered by the participants to answer the following questions:

1. Does the student's empathy lean more on the well-being of animals or humans?
2. Is there a significant difference in the level of empathy between humans and animals?
3. Does the distressing situation have a significant impact on the student's empathy?

It aims to explore how experiencing a distressing situation affects individuals' empathy towards both animals and humans. By assessing participants' emotional reactions and empathy levels when they observe the suffering of either group, the research seeks to uncover the influence of distress on empathetic responses across different species. Ultimately, this research endeavors to enhance the understanding of the relationship between distress and empathy in interactions between humans and animals. The study offers significant insights into human psychology ethics, and social behavior. By understanding how humans emotionally respond to different beings, researchers can uncover valuable information that can be applied to various fields.

The findings could provide valuable insights for understanding the nature of empathy: such as comparing emotional responses to humans and animals, ethical implications, psychological insights, educational applications, animal welfare, public health, and environmental conservations.

MATERIALS AND METHODS

Participants

The participants in this study consisted of 20 college students from diverse academic years, courses, and genders, selected through purposive sampling. A preassessment was conducted to ensure that participants had no prior traumatic experiences related to the death or abuse of a pet or loved one, nor had they witnessed or experienced human cruelty. This screening was implemented to eliminate potential biases that might affect the study's outcomes.

Instrument

The researchers used an empathy towards animal scale with 11 items using a fivepoint scale, as well as the

perspective-taking scale and the empathic concern scale with seven items each also utilizing a five-point scale that assesses the level of empathy participants feel toward both animals and humans.

Procedure and Design

This study uses an experimental design with a within-subjects approach. In this experiment, the same participants are exposed to varying conditions to observe how they respond to emotional distress in both humans and animals. This approach helps minimize the influence of individual differences, as each subject reacts to both human and animal emotional distress scenarios. Additionally, by lowering subject variability, the within-subjects design enhances the reliability of the results. While keeping an effective and controlled structure, this experimental design enables a more thorough understanding of empathy across species. Before the research begins, the space will be carefully set up to be peaceful, quiet, and distraction-free, and each participant will have a comfortable seat. All required equipment, such as computers, speakers, and projectors, will be meticulously set up beforehand to avoid any technological disturbances.

The first step in the procedure is recruiting volunteers, who are then given a preassessment to see if they are a good fit for the research. To preserve the integrity of the study by using deceit, 20 qualified college students will be chosen following the evaluation and provided a brief summary of the research, purposefully leaving out the title and purpose. Every participant will be asked for informed permission, guaranteeing they are completely aware of the work at hand and the dangers and advantages involved. This thorough planning and ethical consideration will make a successful and scientifically sound study possible. Once the participants are settled, they will receive a brief overview of the study's objectives, with the purposeful use of deception to ensure the collection of genuine emotional responses. The introduction will include a casual greeting, such as, "Hello everyone! Good afternoon/morning! We're excited to have you here today for our study. You'll be watching a short video featuring some scenarios of humans and animals in their daily lives. It will only take about 10 minutes of your time. So during the video, we kindly ask that you put your phones down and enjoy the video fully. Afterward, we'd love for you to share your thoughts by completing a quick questionnaire. Thank you so much for being here and for your cooperation!" Afterward, the lights will be turned off to create a calm atmosphere for the viewing session, where participants will watch a compilation of videos featuring both human and animal hardships, as well as neutral and positive scenarios. Once the video ends, each participant will complete a test questionnaire measuring their emotional responses, guided by the researchers. Finally, participants will be thoroughly debriefed on the study's true purpose and given the opportunity to ask any questions they may have.

Ethical Considerations

Participants will receive an informed consent form before the study begins. This form will explain the purpose of the research, the procedures involved, and any potential risks. Participants must sign this form before taking part in the study. To protect confidentiality, all collected data will be kept anonymous, and no identifying information will be shared. Participation in the study is completely voluntary, and participants have the right to withdraw at any time without facing any penalties. After the study concludes, participants will be debriefed about the true

purpose of the research and will have the opportunity to ask any questions they may have.

RESULTS AND DISCUSSION

Results

A Shapiro-Wilk test was conducted to assess the normality of the data for empathy on animals and humans. The results indicated no significant deviation from normality for both conditions ($W = 0.965$, $p = 0.643$), suggesting that the normality assumption was not violated for either variable.

Table 1: Normality Test (Shapiro-Wilk)

		W	p	
Empathy on Animals	-	Empathy on Humans	0.965	0.643

Note. A low p-value suggests a violation of the assumption of normality

Table 2: Descriptives

	N	Mean	Median	SD	SE
Empathy on Humans	20	49.4	48.5	3.42	0.766
Empathy on Animals	20	45.9	46.0	4.30	0.962

Descriptive statistics revealed that the mean score for empathy in humans was $M = 49.4$ ($SD = 3.42$, $SE = 0.766$), while the mean score for empathy on animals was

$M = 45.9$ ($SD = 4.30$, $SE = 0.962$). The median scores for empathy in animals and humans were 48.5 and 46.0, respectively. Each condition included $N = 20$ participants.

Table 3: Paired Sample T-test

	statistic	df	p		Effect Size
Empathy on Empathy on Student's	3.72	19.0	0.001	Cohen's d	0.831
Animals Humans t					

Note. $H_a \mu \text{ Measure 1} - \text{Measure 2} \neq 0$

This study was carried out to examine the differences in empathy levels for humans compared to animals. A paired sample t-test was employed due to the within subject design used by the researchers. The p-value of 0.001 is below the threshold of 0.05. This signifies a statistically significant difference in empathy scores between the two groups, with participants exhibiting greater empathy towards animals than humans, as indicated by the positive t-statistic. Cohen's d value of 0.831 reflects a large effect size, suggesting that the distinction in empathy scores between animals and humans is considerable. On these findings, the null hypothesis, which stated that there is no difference in empathy scores between humans and animals, was rejected.

Discussion

This study analyzed the empathy between humans and animals and found a significant difference between the two groups, as indicated by the Paired Sample T-test ($p=0.001$). Statistical analysis supported this significant difference, suggesting that humans have a greater empathy for animals, as Cameron *et al.* (2022) point out that people appear to sympathize with animal suffering but ignore it when it conflicts with human interests, and Faner *et al.*

(2024) suggest that pets can serve as both a stable base and a safe haven, offering reliable comfort and being sought after in times of distress, which may contribute to greater empathy for animals. Stronger pet bonds are associated with more empathy for animals, which in turn leads to more prosocial views of people. Research from a variety of demographic groups has confirmed this link, showing that emotional attachment to dogs fosters compassionate behavior (Front Psychol, 2024). Furthermore, Prato-Previde *et al.* (2022) research shows that people's characteristics—like their personalities, attitudes, empathy, attachment styles, and beliefs about the mental capacities of animals—have a big impact on how people see, treat, and care for animals. This result is consistent with another study by Barklam *et al.* (2024) that shows parents are more empathetic toward people than people without children. Such related studies help explain the observed increase in empathy towards animals, particularly among participants who are young college students ranging from 18 to 23 years old.

This study may possess certain limitations due to the exclusion of participants with traumatic experiences, which could have constrained the diversity of empathy responses captured. Additionally, the research did not

adequately consider the cultural and societal factors that influence perspectives on animal welfare, potentially leading to a skewed interpretation of the findings. Future researchers are encouraged to broaden the scope of their studies by incorporating a more diverse and representative population. Continuous research is essential to deepen the understanding of human empathy, particularly concerning the relationships between humans and other animals. Additionally, it is recommended that the emotional responses of participants be assessed by varying the intensity of video presentations and contrasting neutral content with distressing imagery. This approach may yield more nuanced insights into the emotional dynamics at play.

CONCLUSION

This research aimed to explore the differences in levels of empathy between humans and animals, concentrating on how distressing situations affect emotional reactions. The results indicated that participants showed significantly greater empathy toward animals than humans, as evidenced by a paired sample t-test ($t = 3.72, p = 0.001$) and a substantial effect size (Cohen's $d = 0.831$). These findings imply that although empathy is a common emotional experience across species, individuals, especially younger adults, tend to respond more intensely to animals in distressing circumstances. The results are consistent with earlier studies that emphasize the impact of emotional connections, like those established through owning pets, on empathetic reactions. These findings highlight the need to comprehend how personal experiences, personality characteristics, and cultural elements affect differences in empathy. Nevertheless, the research's omission of individuals with trauma and its insufficient attention to cultural influences could have limited its applicability. The findings have significant implications for fields like psychology, education, and advocacy for animal welfare. They highlight the necessity of specific interventions aimed at building empathy in different settings, which encourages caring actions toward both people and animals. Upcoming studies should aim to include a wider demographic and experiment with different levels of emotional impact in order to gain a deeper insight into the intricacies of empathy. This could result in more effective methods for nurturing emotional bonds between species and improving overall societal health.

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