

The Influence of Animals on Climate Change Concern and Pro-Environmental Behavior

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Abstract

This study examined how viewing animal-related images influenced climate change concern and likelihood to engage in pro-environmental behavior. The sample included 76 undergraduate students enrolled in Monmouth University psychology courses. There was a significant effect of time ($p = .004$), as well as the interaction of time and condition ($p = .03$), on mean climate change concern ratings. However, condition did not have an effect on likelihood to engage in pro-environmental behavior ($p = .11$). While animals may be a strong enough influence on individuals to show concern over the effects of climate change, there may be a need for something more in order to spark real action.

Research Questions

- Does the exposure to animal-related images displaying negative impacts from climate change cause people to show higher levels of environmental concern?
- In addition to environmental concern, might these images influence individuals to commit more to engaging in pro-environmental behavior?

Introduction

Effects of Climate Change

Food crop systems are becoming more and more vulnerable to climate change, and in many geographic regions, agriculture performs a key role in maintaining economic expansion and rural livelihoods (Challinor et al., 2007).

Attitudes Toward Wildlife

Stereotypes and conservation status play a large role in shaping peoples' feelings towards wildlife (Castillo-Huitrón et al., 2020).

The Importance of Emotions

Emotion-driven thinking and high ethical expression are the most common grounds of conservation communities (Nelson et al., 2016).

The Benefits of Human-Animal Interactions

In the past decade, feelings of insecurity and susceptibility following peoples' experiences among wildlife have dramatically decreased, with more positive feelings emerging leading to improved mental health, a stabilization of emotions, and increased learning (Methorst et al., 2020).

Method

Participants

The study consisted of 76 students enrolled in a psychology course at a mid-size, private university on the northeast coast (19 males, 55 females, two unspecified). The students ranged in age from 18 - 23 ($M = 19.38$, $SD = 1.24$). The majority of the sample was White (68.4%) and majoring in Psychology (36.8%). Participants were selected by convenience through the psychological department participant pool and were compensated for their involvement with academic credit (.05 SONA points).

Materials

Materials used for this experiment included one pre-test questionnaire, a vignette (one of three versions), one post-test questionnaire, a behavioral measure, a commitment measure, and a demographic survey entailing a manipulation check.

Design

The study used an experimental 3x2 mixed method, multi-group design, with the vignette item accomplishing the manipulation of climate change effect at three levels. The participants in the study were randomly assigned to these levels (animals, humans, nature). The independent variables in the study are climate change effect (between-subjects) and time (within-subjects). The dependent variables are climate change concern and willingness to act pro-environmentally, which were measured through quantitative items.

Procedure

Climate Change Concern Pre-Test

- 10 statements regarding concern about climate change
- $\alpha = .83$

Climate Change Effect Vignette

- Humans, animals, & nature (control)
- 3 pictures and brief description
- Assigned at random



Note. Image used in human condition



Note. Image used in animal condition



Note. Image used in nature (control) condition

Climate Change Concern Post-Test

- Mirrored pre-test questionnaire with 10 statements reordered and reverse-coded
- $\alpha = .83$

Pro-Environmental Behavior Measure

- 5 statements regarding likeliness to act pro-environmentally
- $\alpha = .89$

Commitment Measure

- 2 items measuring participants' commitment to pro-environmental behavior
- Email for wildlife conservation fund donation opportunity

Demographics Form w/ Manipulation Check

- Gender, age, ethnicity, major, & year in school
- Asked to recall topic that they read about and viewed pictures of to demonstrate manipulation was successful

Hypotheses

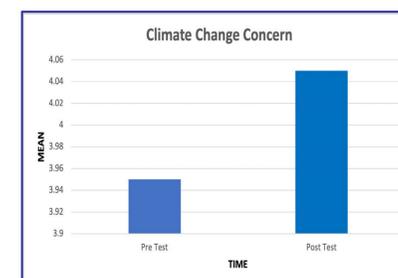
- Hypothesis I**
 - Regardless of group, participants will demonstrate higher climate change concern in the post-test than the pre-test.
- Hypothesis II**
 - Participants assigned to the animal condition will demonstrate the greatest increase in climate change concern in the post-test (compared to the other two conditions).
- Hypothesis III**
 - Participants assigned to the animal condition will demonstrate higher likeliness to engage in pro-environmental behavior (compared to the other two conditions).

Results

Hypothesis I

- As hypothesized, there was a strong overall significant main effect of time on climate change concern, being that overall climate change concern was higher in the post-test than the pre-test
- $F(1, 71) = 8.77, p = .004, \eta_p^2 = .11$

	Pre-Test	Post-Test	N
Nature	3.97 (.75)	4.0 (.82)	24
Human	3.94 (.59)	3.99 (.55)	25
Animal	3.94 (.49)	4.18 (.42)	25
Total	3.95 (.61)	4.05 (.61)	74



Results

Hypothesis I I

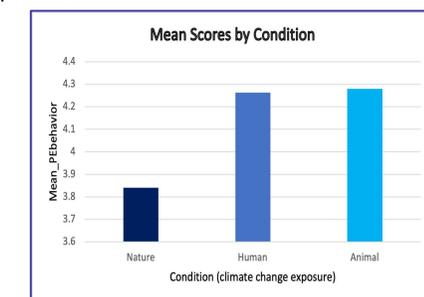
- As hypothesized, combining both the effect of time and climate change exposure made for a significant interaction effect
- $F(1, 71) = 3.58, p = .03, \eta_p^2 = .091$



Results

Hypothesis III I

- Contrary to what was hypothesized, the test (one-way ANOVA) revealed no significant differences between the conditions
- $F(2, 72) = 2.309, p = .11, \text{effect size} = .18$



Results

Commitment Measure

- Chi-square revealed positive, strong relationship between likelihood to engage in pro-environmental behavior and donation behavior
- $\chi^2(14, N = 75) = 40.8, p < .001, (M = 5.76, SD = 3.07)$

Discussion

- Results demonstrated that the simple visual exposure to negative effects of climate change, especially on animals, directly influences an individual's concern
- From this, it can be concluded that human emotion may serve as the foundation for wildlife protection and climate change conservation
- Perhaps humans care more about the welfare of animals than they do that of themselves when it comes to the detrimental effects of climate change
- Since the hypothesis regarding pro-environmental behavior was not supported, while the tugging of emotions is enough to cause individuals to show concern, perhaps it is not enough to actually spark reformative action, highlighting a need for something more to influence real change

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