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Seeing through the eyes of an Albatross: Perspective-taking at the Monterey Bay Aquarium

Introduction

As consumerism expands and our global population rises, an increasing number of our disposed plastic items have found their way into oceans, causing harm to ecosystems and the animals that inhabit them. Approximately 268,940 tons of plastic are currently floating in our world's oceans, being mistaken for food by birds and marine life (Erikson et al., 2014). Everyday objects we use such as plastic straws, bottle caps, and water bottles break down into smaller bits known as microplastics. These microplastics clog the intestines and stomachs of birds and fish that are vital parts of our marine ecosystems (Azzarello and Van Vleet, 1987). The negative impact of plastic on these marine ecosystems worldwide reduce the stability of the environment, causing key species to become unhealthy or even near extinction.

To reduce environmental pollutants, psychologists have proposed strategies to increase citizens' concern for the environment and engagement in helping behaviors. Current strategies include educational programs on human impact on the environment, installing frequent recycling centers, and using social norms to promote helping behaviors (Schultz, 2014). These strategies have been shown to differ in effectiveness based on situation, and no study has yet been conducted to determine which strategy is most effective overall. Schultz (2000) proposed that concern for the environment can be evoked by perspective-taking, or asking participants to take the perspective of people or animals in nature. In his study, Schultz (2000) asked participants to take the perspective of nature and animals in photographs. Results revealed that those

participants demonstrated greater concern for all living things, a concept he termed “biospheric concern”, compared with participants who were not asked to take the perspective.

Perspective-taking has been found to be effective in inspiring helping behaviors in an environmental context, known as pro-environmental behaviors (Berenguer, 2007; Tam, 2015).

With this link established, research is led to examine how perspective-taking can be used to not only evoke concern for the environment, but also promote pro-environmental behaviors in daily life. The current study aims to build on the findings of Tam (2015) and Schultz (2000) by being the first to move out of the laboratory and examine the effects of perspective-taking on biospheric concern in a real-world setting.

The present study tested the effectiveness of perspective-taking as a strategy to evoke environmental concern in visitors to the Monterey Bay Aquarium. Visitors viewed one of two types of shows at the Aquarium: one show in which visitors were asked to take the perspective of the Laysan Albatross, a seabird threatened by plastic pollution; and a virtually identical show that did not encourage visitors to take the perspective of the bird. I hypothesized that there would be a significant difference in self-reported environmental concern in visitors who were asked to take the perspective of the threatened species of Albatross, compared to visitors that did not. Second, I hypothesized that visitors who were asked to take the perspective of the Albatross would have more biospheric concern than non-perspective-taking visitors. The goal of this study was to replicate the findings of Schultz (2000) in a field setting. Perspective-taking can be used as a tool by organizations outside of the psychological discipline to help repair the environment, which is essential if we hope to preserve it for future generations.

Method

Participants. One hundred and forty-five participants (M age = 41, range 18-88) completed the Monterey Bay Aquarium Guest Survey. Requirements for participation included English language fluency and completion of the survey after the end of the program, with only one member per group being allowed to fill out a survey.

Materials. The Albatross Encounter program was an educational show about the Laysan Albatross, a bird from the Northwestern Hawaiian Islands that is strongly affected by plastic pollution. Albatross consumption of plastic has caused the species to be harmed, drawing the attention of environmental organizations like the Monterey Bay Aquarium. Through educating visitors about the Laysan Albatross, the Monterey Bay Aquarium hoped to encourage awareness of plastic consumption and how it affects the health of ocean life.

The Monterey Bay Aquarium Guest Survey included the Dimensions of the Visitor Experience (DOVE) survey developed by Packer and Ballantyne (2016), the Environmental Concern Scale by Stern and Dietz (1994), and ten self-reported learning and guest experience questions developed by the Monterey Bay Aquarium (See Appendix). This study focused on the 15-item Environmental Concern Scale, which used a Likert-type scale that ranged from 1 “not important” to 7 “supreme importance” to indicate the degree to which participants were “concerned about environmental problems because of the consequences for” items such as children, birds, my future, etc.

Design. Participants voluntarily attended and were not randomly assigned to the Albatross Encounter during one of two time frames, making this study quasi-experimental. Participants who attended the program during the first time frame experienced an objective narrative, while participants who attended during the second time frame experienced a perspective-taking

narrative. Attendees at objective show heard information about the effects of plastic pollution on the Laysan Albatross in an way that did not explicitly ask participants to take the perspective of the Albatross. Attendees who experienced the perspective-taking show heard the same facts, but with a narrative that explicitly asked participants to imagine how they would feel about plastic pollution if they were an Albatross.

Procedure. After receiving approval from the Committee for the Protection of Human Subjects, data were collected at the Monterey Bay Aquarium during November 2016, December 2016, and January 2017. Consenting participants were given a sealed Monterey Bay Aquarium Guest Survey and were asked to wait until the end of the program to complete the survey. Surveys opened prior to the end of the program, or surveys filled out by more than one visitor, were not included in this study. Most participants completed it in 3-5 minutes and were given a Monterey Bay Aquarium postcard as gratuity.

Results

The current study hypothesized that there would be a significant difference between perspective-taking and non-perspective taking groups on self-reported environmental concern; and that perspective-taking visitors would report more biospheric concern than non-perspective-taking visitors. An independent samples t-test revealed no significant difference between perspective-taking ($M= 2.15$, $S.D.= .48$) and non-perspective-taking ($M= 2.25$, $S.D.= .32$) shows on environmental concern; $t(1, 143)= 1.385$, $p= .168$, $d= 0.25$. These results partially contrast Schultz (2000), which found a significant interaction between perspective-taking and objective shows across biospheric ($F = 4.44$, $p = .013$), and altruistic concerns ($F = 5.95$, $p = .003$), but not for egoistic concerns ($F = 1.33$, $p = .27$). A multivariate analysis of variance

(MANOVA) of the Environmental Concern Scale was used to evaluate type of environmental concern (DV: egoistic, altruistic, biospheric) evoked in visitors across perspective-taking and non-perspective-taking shows (IV). In contrast to Schultz (2000), the current study found no significant difference between perspective-taking and objective shows across biospheric ($F = .023, p = .879$), altruistic ($F = 1.558, p = .214$), and egoistic concern types ($F = 1.877, p = .173$), $F(1,143) = .736, p = .532$; Wilk's $\Lambda = .985$, partial $\eta^2 = .015$.

Discussion

Previously, only studies performed in laboratories had found a correlation between perspective-taking and biospheric concern. After running our experiment in a real-world museum setting, evidence was found contrary to literature (Schultz, 2000; Tam, 2015). Visitors who took the perspective of the Laysan Albatross did not display greater self-reported environmental concern than those who observed virtually the same show, without the presence of perspective-taking. Additionally, the current study found no statistically significant difference in type of concern (egoistic, altruistic, biospheric) reported by visitors across perspective-taking and non-perspective-taking show types. This may suggest that perspective-taking is not an effective strategy at inspiring biospheric concern in an aquarium setting, where visitors may be more likely to have a pre-existing interest in environmental well-being. Future research should replicate this study in various public settings to examine differences in the environmental concern of those who choose to visit museum settings compared to those who do not. Future studies should also evaluate perceived benefits and disadvantages visitors consider while perspective-taking in museum settings, as the overall visitor experience may affect focus on perspective-taking strategies during programs.

References

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Appendix

MONTEREY BAY AQUARIUM GUEST SURVEY

Please fill out one form per party

The following words and phrases can be used to describe the way we feel or respond to various situations in our lives. We want to know the extent to which these words and phrases describe what you experienced as part of attending the program. We don't want to know how you normally feel, only how **the program today** made you feel.

Please indicate which of the following words or phrases best describe what you experienced during the program. Check all that you experienced more than you would in your everyday life:

I felt:

- Sociable
- Connected spiritually
- Independent
- Active
- Thoughtful
- Refreshed
- Attentive
- Excited
- Concerned for nature
- Overloaded
- Mobile
- Privileged
- Deep in thought
- Alert
- Honored
- Energetic
- Concerned for others
- Reflective
- Reverent
- Relaxed
- Fascinated
- Amazed
- Stressed
- Grateful
- Fortunate
- Peaceful
- Exhilarated
- In control
- Confident
- Introspective
- Intrigued
- Tense
- Concerned for the world
- Serene
- Uncomfortable
- Vigorous
- Concerned for animals
- Restored
- Observant
- Enthusiastic
- Frustrated

- Fulfillment
- Nostalgia
- Respect
- Grandeur
- Wonder
- Choice
- Togetherness
- Growth
- Beauty
- Community
- Companionship
- Connection to the past
- Accomplishment
- Worship
- Appreciation of objects
- Deciding
- Fellowship
- Self-discovery
- Enjoyment
- Pondering
- Elation
- Sacredness
- Concentration
- Attachment
- Aesthetic appreciation
- Connection with nature
- Compassion
- Connection with objects
- Self-actualization

I experienced a sense of:

It engaged me:

- Spiritually
- Physically
- Mentally

**It engaged my:
ABOUT THE PROGRAM**

Senses

Imagination

1. Please rate your overall experience during the program today.
 Poor Fair Good Excellent Superior
2. Did you learn anything new during the program today?
 Yes No (*If no, skip to #3*)
- 2a. What did you learn?

3. Did the program inspire you to consider doing something to help protect or conserve the ocean and ocean life?
 Yes No (*If no, skip to #4*)
- 3a. What will you do?

ABOUT YOU

4. People around the world are generally concerned about environmental problems because of the consequences that result from harming nature. However, people differ in the consequences that concern them the most.

Please rate each of the following items from 1 (not important) to 7 (supreme importance) in response to the statement below:

I am concerned about environmental problems because of the consequences for:

Plants	1	2	3	4	5	6	7	Birds	1	2	3	4	5	6	7
Me	1	2	3	4	5	6	7	Animals	1	2	3	4	5	6	7
Humanity	1	2	3	4	5	6	7	People in the Community	1	2	3	4	5	6	7
Whales	1	2	3	4	5	6	7	My lifestyle	1	2	3	4	5	6	7
Children	1	2	3	4	5	6	7	My Health	1	2	3	4	5	6	7
Trees	1	2	3	4	5	6	7	Future generations	1	2	3	4	5	6	7
Marine Life	1	2	3	4	5	6	7	My prosperity	1	2	3	4	5	6	7
My Future	1	2	3	4	5	6	7								

5. What time did you enter the Aquarium today? _____
6. Is this your first visit to the Monterey Bay Aquarium?
 Yes No
7. Are you a member of the aquarium?
 Yes No
8. In what year were you born? _____
9. Is anyone in your party under 18 years of age?
 Yes No