Children's Conservation Attitudes After Visiting an Animal Hospital Exhibit

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Development and Understanding of Children's Knowledge

Introduction

- Establishing early positive attitudes toward conservation in childhood could be important for developing future conservation attitudes and actions in adulthood.
  - By 8 years of age, children recognize how their own conservation behaviors can impact the environment around them (Clayton, 2012).
- Children with increased connectedness to nature feel individual responsibility for conservation and have stronger animal-nature-human oneness beliefs (e.g., people cannot live without plants and animals; Hughes et al., 2018).
- Nature connectedness is fostered through children's interactions with the natural world via promoted and free action (Reed, 1996).
  - **Promoted action** leads to positive nature attitudes gained through learning that is extrinsically facilitated by parents or educators.
  - **Free action** allows children to choose how to play in nature, directed by children's curiosity, and promotes intrinsic desires for conservation.

The Present Study

- Children's conservation attitudes and animal-human oneness beliefs (i.e., human-animal-body similarity) were examined after a visit to the Animal Hospital Exhibit at a local science center where they participated in either a promoted or free action experience.
  - In the promoted action condition (i.e., the procedure condition), children watched a live veterinary procedure in the Animal Hospital Exhibit.
  - In the free action condition (i.e., the walkthrough condition), children visited the Animal Hospital Exhibit during a time when there was no live veterinary procedure and explored the exhibit independently.

Hypotheses:

- Children in either the procedure or walkthrough conditions could develop higher conservation attitudes, as both can promote nature connectedness.
- Older children (i.e., 8-to-10-year-olds) will hold higher conservation attitudes.
- Human-animal-body similarity beliefs will be positively associated with to children's conservation attitudes.

Method

Participants

- 72 5-to-10-year-old children (*M* age = 7.72, *SD* = 1.49, 42 girls)
- Conditions: procedure (*n* = 34) and walkthrough (*n* = 38)

Conditions

Procedure Condition:

- Participants viewed a live animal medical procedure conducted by a veterinarian through a window at the Animal Hospital Exhibit and listened to a narration provided by the veterinarian and the staff educator.
- Participants had the opportunity to ask and answer questions from both the veterinarian and staff educator.
- Participants were instructed that they had to watch the procedure for at least 10 minutes.

Walkthrough Condition:

- Participants explored the Animal Hospital Exhibit with their guardian without participating in any specific activities or being given any guidance on how to interact with the exhibit features.
- Participants did not have any opportunity to interact with any science center staff.
- There was no minimum time limit for this condition – participants were told that they could spend as much time as desired in the exhibit area.

- Once their visit to the Animal Hospital Exhibit was finished, all participants, regardless of condition, received a questionnaire about how they felt during their visit (i.e., emotional reactions), their conservation attitudes, and their human-animal-body similarity beliefs.

Method (Cont.)

Questionnaire

Conservation Attitudes:

- "How worried do you feel about animals going extinct?"
- Participants' scores ranged from 1 (not at all), 2 (a little), 3 (very)

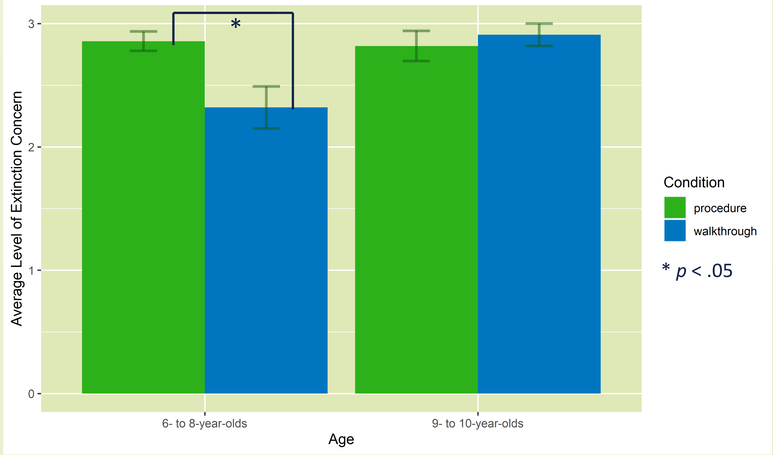
Human-Animal-Body Similarities:

- "Does a (snake's/ red panada's) (heart/lungs) work the same way as your (heart/lungs)?"
- Participants' scores ranged from 1 (no) to 2 (yes) for each item

Children's Emotional Reactions:

- "How [nervous/curious/excited/disgusted] did you feel about seeing where animals go to the doctor?"
- "How much did you like seeing where animals go to the doctor?"
- "How interested would you be in watching a (or another) live animal doctor's visit?"
- Participants' scores ranged from 1 (not at all), 2 (a little), 3 (very) for each item

Figure 1: Age X Condition on Conservation Attitudes



Results

Conservation Attitudes & Condition

- 2 (age: 6-to-8-year-olds and 9-to-10-year-olds) X 2 (condition: procedure and walkthrough) between-subjects ANOVA revealed a significant interaction between age and condition on conservation attitudes $F(1,68) = 4.15$, $p = .046$, $\eta_p^2 = .061$.
  - Younger children reported stronger conservation beliefs in the procedure condition ($M = 2.86$, $SD = 0.36$) compared to the walkthrough condition ($M = 2.32$, $SD = 0.85$). Older children did not differ by condition ($M_{procedure} = 2.82$, $SD_{procedure} = 0.41$; $M_{walkthrough} = 2.50$, $SD_{walkthrough} = 0.78$; see Figure 1).

Conservation Attitudes & Human-Animal-Body Similarities (See Figure 2)

- Children's conservation attitudes were positively correlated with beliefs that a snake's heart has a similar function as a human heart, $r(72) = .33$ [.10, .52], $p = .006$.

Conservation Attitudes & Emotional Reactions (See Figure 3)

- Children who scored higher on concerns about conservation…
  - reported feeling more curiosity in the Animal Hospital Exhibit $r(71) = .41$ [.19, .59], $p < .001$,
  - had higher liking ratings of the Animal Hospital Exhibit $r(71) = .43$ [.22, .60], $p < .001$,
  - reported greater interest in seeing a live animal doctor visit (again) $r(71) = .46$ [.26, .63], $p < .001$.

Figure 2: Body Similarities Correlations

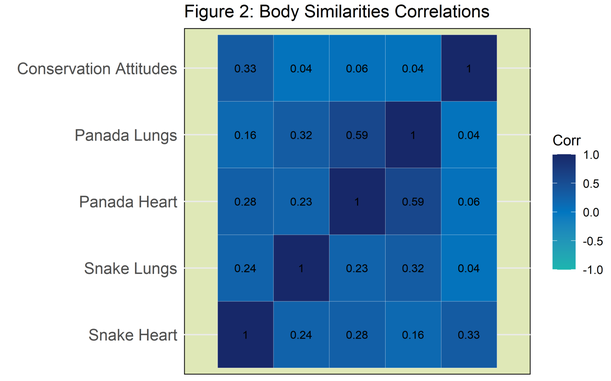
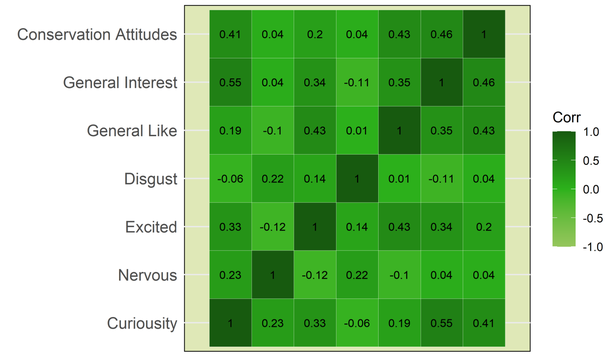


Figure 3: Emotional Reactions Correlations



Discussion

- Younger children may have benefited more from the scaffolding provided by the promoted action experiences in the procedure condition because they have yet to develop a full understanding of conservation (Cohen & Horm-Wingerd, 1993, Hughes et al., 2018).
  - Direct experience with animal care and messages related to conservation from the science center staff had a larger impact on their conservation attitudes compared to older children, who had the same conservation attitudes in both conditions.
  - Promoted action may be a valuable source for nature learning for younger children who have yet to develop an intrinsic interest in conservation.

- The correlations between children's emotional reactions towards the exhibit and their conservation attitudes is consistent with research that found a positive association between children's curiosity about nature and their conservation attitudes (Clayton, 2012).
  - Curiosity and interest in the Animal Hospital Exhibit could be indicative of children's general interest in animals, which in turn relates to a higher desire to protect animals from extinction.

- Consistent with previous research on the association between children's animal-human oneness beliefs and conservation attitudes (e.g., Hughes et al., 2018), children's conservation attitudes were related to their beliefs that snake and human hearts serve the same biological purpose.
  - The specificity of this finding (snakes, but not red pandas) suggests that children who have human-animal-body similarity beliefs with animals that are less taxonomically similar to them (e.g., reptiles vs. mammals) may have stronger feelings of connectedness to nature.

- Overall, results suggest that science centers and zoos should design exhibits with more directed learning activities that promote curiosity about nature and emphasize animal-human oneness to foster higher conservation attitudes in children

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