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11-2013

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Torquati, Julia C.; Kroeker, Julia; and Kok, CarMun, "PRESCHOOL CHILDREN'S CONSERVATION REASONING AND UNDERSTANDING ABOUT NATURE" (2013). *The Nebraska Educator: A Student-Led Journal*. 7.

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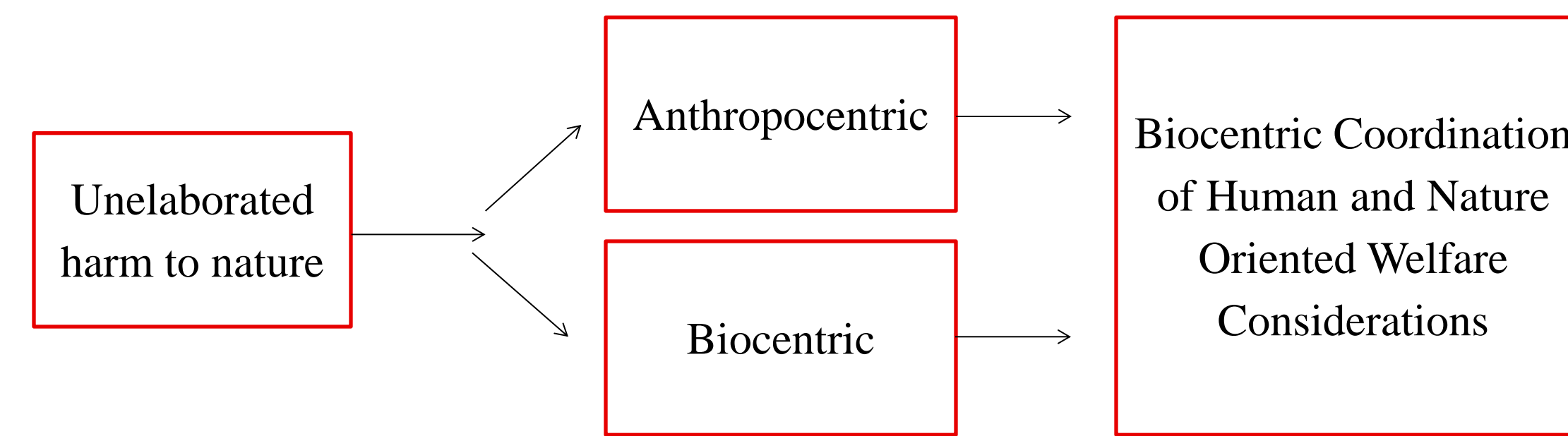
PRESCHOOL CHILDREN'S CONSERVATION REASONING AND UNDERSTANDING ABOUT NATURE

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Introduction

This research uses Moral Domain Theory to examine preschool children's reasoning about conservation. Three criteria differentiate between moral, personal, and conventional issues: universal application to all people in morally similar situations; not contingent upon societal rules; justification tied to rights and welfare.

Kahn (2001) reported that young children use predominately "harm to nature" justifications when asked about potentially harmful actions such as throwing trash in a waterway. Based on his investigation on environmental moral reasoning of participants ages 6 years to young adulthood across multiple cultures, Kahn proposed a developmental model that progresses from justifications (for prohibiting an action) focusing on harm to nature, to anthropocentric and biocentric reasoning, which is later integrated into a biocentric coordination of human and nature oriented welfare.



Research Questions and Purpose

The purpose of this study is to extend Kahn's research to a younger age group than has been previously investigated, and to compare environmental moral reasoning of children who are attending a nature-focused preschool to that of children attending a non-nature focused preschool.

Research Questions

- Do preschool-aged children demonstrate understanding of harm to nature in the case of throwing trash in a lake? Is the level of understanding similar or different from that reported for 6-year-old children in Kahn's (2001) study?
- If preschool-aged children judge throwing trash in a lake as wrong, how do they justify their judgment? Do justifications differ by preschool type?
- Do preschool-aged children consider harm to nature as a moral issue that transcends location and social convention?
- Do preschool-aged children consider pets, wild animals, plants, and parks/gardens to be important, and why?

Method

Sample:

- Nature: n = 53
- Non-nature: n = 73

Measures:

- Children were asked:
 - Whether they think about nature, and what they think about
 - Whether pets, wild animals, plants, and parks/gardens are important or not important and why
 - Whether it would be ok if one person threw trash in a local waterway, and why
 - Whether it would be ok for everyone to throw trash in the water, and why
 - Whether they think trash would affect the water, birds, fish, or people, and if they cared if harm occurred and why
 - If it would be ok to throw trash in the water in a far-away city like their own, except that there was a rule that allowed littering.

Findings

RQ1: Do Preschool-aged Children Demonstrate Understanding of Harm to Nature?

90.4% of all children said that it would **not** be okay for someone to throw trash in a lake. This is slightly less than the 96% of first, third, and fifth graders reported by Kahn (2001).

Chi-square analysis also showed that a greater proportion of children attending nature-focused preschool thought that throwing trash into a lake would harm fish at a marginal level of significance, $X^2(1) = 3.07, p = .08$. Children from the nature and non-nature-focused preschools did not significantly differ in their assessments of whether trash would harm birds, water, or people.

Table 1. Proportion of children indicating that throwing trash in the lake would harm fish, birds, water and people

	Nature (n=53)	Non-nature (n=73)
Fish	82.0% (41/50)	67.6% (46/68)
Birds	56.9% (29/51)	50.7% (34/67)
Water	43.8% (21/48)	53.7% (36/67)
People	45.8% (22/48)	51.5% (34/66)

RQ2: How do Preschool Children Justify their "Not OK" Judgments, and Do Justifications Differ by Nature/Non-nature Preschool?

Chi-square analysis showed that there was a marginally significant difference in children's justifications of why it was not okay for someone to throw trash in a lake according to whether they attended a nature-focused preschool, $X^2(3) = 7.59, p = .06$. A greater proportion of children attending nature-focused preschool provided 'harm to nature' justifications (i.e., the fish might eat the trash and get sick), and a greater proportion of children attending non-nature-focused preschool provided social convention justifications (i.e., your mom said so; you're supposed to throw it in the trash can), but post-hoc analysis did not reach significance for either comparison.

Table 2. Proportions of children who used each type of justification for why it is not okay to throw trash in the lake

	Center		Total
	Nature (n=36)	Non-nature (n=45)	
Harm to nature	63.9%	42.2%	51.9%
Anthropocentric	25.0%	20.0%	22.2%
Biocentric	2.8%	6.7%	4.9%
Social convention	8.3%	31.1%	21%
Total	100%	100%	100%

Note: The number of children in each group is less than the total sample because some children provided uncodeable responses (i.e., "I don't know" or "because.")

RQ3: Do Preschool-aged Children Consider Harm to Nature as a Moral Issue?

84.0% of children in the nature program and **69.7%** in the non-nature programs said that it would not be okay to throw trash in the lake in another city even if there was a rule that said it was okay to do so; these proportions were not significantly different. A greater proportion of children attending the nature-focused preschool used harm to nature and anthropocentric justifications, and a greater proportion of children attending non-nature-focused programs provided social convention justifications. Overall, harm to nature justifications were the most frequent, followed by social convention and anthropocentric responses. Biocentric responses were least frequent, consistent with Kahn's (2001) study of slightly older children (6 years old).

Table 3. Proportions of children who used each type of justification for why it is not okay to throw trash in the lake even if there was a rule that said it was okay to do so

	Center		Total
	Nature	Non-nature	
Harm to nature	44.4% (n=16)	35.0% (n=14)	39.5%
Anthropocentric	27.8% (n=10)	17.5% (n=7)	22.4
Biocentric	8.3% (n=3)	5.0% (n=2)	6.6%
Social convention	19.4% (n=7)	42.5% (n=17)	31.6%
Total	100%	100%	100%

Note: the proportions of children with codeable responses for this question were 60% for the nature program and 56% for the non-nature program.

Findings (cont...)

RQ4: Do preschool-aged children consider pets, wild animals, plants, and parks to be important, and why?

A majority of children in both programs judged pets, wild animals, plants, and parks as important, and there were no significant differences between children from the nature and non-nature programs.

Table 4. Proportions of children who said pets, wild animals, plants, and parks and gardens are important

	Nature Program	Non-nature Program
Pets Important	68.1%	87.1%
Wild Animals Important	61.4%	66.2%
Plants Important	73.2%	71.6%
Parks & Gardens Important	64.3%	81.2%

Table 5. Proportions of children who used each type of justification for importance of pets, wild animals, plants, parks and gardens

	Harm to Nature		Anthropocentric		Biocentric		Social Convention	
	Nature	Non	Nature	Non	Nature	Non	Nature	Non
Why Pets	11.8%	2.9%	76.5%	88.2%	11.8%	8.8%	0%	0%
Why Wild Animals	0%	5.0%	44.4%	60.0%	55.6%	35.0%	0%	0%
Why Plants	0%	6.1%	61.1%	69.7%	38.9%	24.2%	0%	0%
Why Parks & Gardens	0%	2.8%	86.7%	86.1%	13.3%	8.3%	0%	2.8%

Conclusions

- The majority of children judged throwing trash in a lake to be wrong.
- "Harm to nature" was the most frequent justification, consistent with Kahn's study of slightly older children.
- Anthropocentric reasons were the second most frequent justification, closely followed by social convention justifications
- A majority of children demonstrated moral domain reasoning by applying their judgments universally and without contingency for rules, stating it would be **not ok** to throw trash in the lake even if there was a rule that it was ok to do so.
- A majority of children in nature and non-nature programs considered pets, wild animals, plants, and parks to be important, and
 - Children provided mainly anthropocentric reasons, consistent with Kahn's research.
- Children from the nature and non-nature programs did not significantly differ in their justifications for their importance ratings