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Perception of Nature Based on Childhood Experiences

An Undergraduate Thesis Proposal

By

Kaitlyn Richards

Presented to

The Environmental Studies Program at the University of Nebraska-Lincoln

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For the Degree of Bachelor of Science

Major: Environmental Studies

Emphasis Area: Natural Resources

Thesis Advisor: Julia Torquati

Thesis Reader: Name: Lindsey Chizinski

Lincoln, Nebraska

Introduction

It is essential that humans view themselves as a part of nature rather than viewing themselves as separate from it. Especially with issues on the rise such as climate change, habitat destruction, and the degradation of natural resources. Childhood experiences with nature are critical in developing pro-environmental behaviors (Duzenli, 2019). Pro-environmental behaviors are defined as attitudes and actions that focus on the improvement of environmental conditions, while also being vigilant of ways to reduce negative impacts on the environment (Tian, 2022).

Oftentimes, the way children perceive nature is shaped by their vicarious interactions in childhood. Vicarious learning is “an indirect pathway to fear (Askew et. al, 2007).” Through observing adults in their lives such as parents and teachers, children can develop a fear or disgust for elements of nature such as specific species of animals. Zoophobia is amongst the highest types of specific phobias (Zsido et. al, 2022). This could happen because of early experiences with vicariously learning to fear specific animals. This may impact how threatening children think animals are and their avoidance of those species (Askew et. al, 2014).

Restorative behaviors, also called perceived restorativeness, relate to the connectedness someone feels to their natural environment and how that relates to the actions they perform to protect it (Berto et. al, 2018). These behaviors can include recycling, reducing water and energy consumption, etc. The development of restorative behaviors can promote a much-needed connection to nature for future generations. When children are exposed to nature during their development, their senses are engaged and they are more likely to develop empathy for the environment (Ernst et.al, 2022). When the environment is struggling, they are more likely to take

action, whether the action is direct or indirect. Without these connections to nature, the fate of the earth lies in question for future generations. If young children are not exposed to nature-based learning and recreation, a decline in restorative behavior exhibitions may occur.

Childhood experiences with nature are important because they enhance an individual's well-being. It is imperative that children spend time engaging with nature, as this plays a role in their physical and mental health. Physically, time spent outdoors decreases the chance that a child will become overweight, which in turn could prevent future health problems (Chawla, 2015). Spending time in nature also lowers rates of asthma and other respiratory conditions (Chawla, 2015). Mentally, engaging with natural settings increases relaxation and improves attention span in children (Chawla, 2015). This is especially significant for children with attention-deficit hyperactivity disorder (ADHD) because it lessens symptoms (Collado & Staats, 2016). Spending time in nature also encourages creativity as children utilize their imaginations (Ernst et. al, 2019). Through spending time in nature, children will not only better understand environmental issues, but they can also use their developed skill of creativity to solve these problems as adults (Duzenli et. al, 2019).

As mentioned earlier, vicarious learning is “an indirect pathway to fear (Askew et. al, 2007).” With this, hate and fear are learned, so, therefore, biases are also learned. With animal phobias onsetting during childhood, the role that vicarious learning has in the development of zoophobia is prevalent (Muris et. al, 2012). Another reason why the perception of nature is important is that those who have a connection with nature are not only more likely to engage in restorative behaviors but also are more likely to view themselves as part of nature rather than separate from it. The biophilia hypothesis is the idea that humans are inherently fascinated with

the natural world (Kellert, 1993). The perceived restorativeness an individual possesses depends on their fascination with nature (Berto et. al, 2018). In other words; if someone is fascinated by something, they are more likely to protect it. Perceived restorativeness depends on the biophilic quality and the connection to the environment (Berto et. al, 2018). Through childhood participation in nature, attitudes and behaviors in adulthood are more likely to be pro-environmental (Wells & Lekies, 2006). In fact, in past studies, adult environmental activists credit both childhood experiences and vicarious learning through their role models for their own commitment to environmental protection (Collado et. al, 2013).

The purpose of this paper is to address the following research question?

How do nature-based experiences during childhood impact one's view of nature?

The hypothesis is that vicarious learning and environmental engagement at a young age increase the likelihood of someone exhibiting pro-environmental attitudes and behaviors during adulthood. The desired achievements of this thesis include the following.

- ***Identify predictors of perceptions of nature (viewing oneself as a part of nature, viewing nature as existing for one's benefit, viewing oneself as someone who should provide for nature, or did not give any consideration to this).***
- ***Evaluating how childhood experiences connect to adults exhibiting pro-environmental behaviors (recycling, lower water, energy consumption, etc.).***

Literature Review

Emotional attachment to nature has been measured in a variety of ways, including biophilia and biophobia. This was one of the findings in a study, conducted by Pablo Olivos-Jara,

focused on children aged five years old. Both parts of the two-part study involved showing the children thirty pictures of nature. The first part revealed how the children express emotions in the photographs, and the second part revealed how the children express emotions as well as their explanations for how they respond to the pictures. Part one of the study presents findings that certain animals such as potentially harmful animals are met with surprise and fear and species like insects are met with disgust from the surveyed group. The second part of the study found that “emotional intelligence enables a partial perspective on nature (Olivos-Jara, et. al, 2020).” Meaning that the ability to understand and manage their own emotions, and the emotion of others, gives them a certain perspective on the natural world around them.

Another study, capturing data on people aged 15-87, focuses on the connection between nature and human health and well-being. After a large pool of questionnaires was analyzed, it was found that those who had a high connection to nature in ways such as spending time in natural outdoor environments, also presented feeling like they have a higher sense of purpose. Overall, individuals with higher connectedness to nature were found to have higher social, emotional, and psychological well-being (Cervinka, et, al. 2012).

One more important source of literature evaluated in this thesis is a study completed by Reynolds and Askew in 2019. This study focused on vicarious fear and disgust learning. The objective was to examine how this impacts children. This is significant to this thesis report because the study is focused on children aged 7-9 years old. The study concluded that both types of vicarious learning, fear, and disgust, can breathe biases (Reynolds & Askew, 2019). This is important to recognize because biases can cause different perceptions of nature later in the individual’s life, during the adulthood stages.

Methods

Design

In this thesis report, a mix of qualitative and quantitative methods will be used. The data will be collected through an anonymous Google Forms survey. The survey will ask both demographic questions and reflections on the interviewees' environmental perspectives. The research design is what classifies this study as a correlation study. This will be completed by separating the survey results into two groups; People with significant childhood experiences with nature and those without significant childhood experiences. The criteria for these categorizations rely on how the participants respond to questions about what activities they participated in before age 18, and how often they participated in those activities.

Confidentiality will be ensured throughout the course of the data collection, as no names or emails will be asked for in the survey. Anonymity is essential for this type of research as the individuals will have to reflect on their environmental perspectives as well as experiences they experienced when they were young.

Sample

Convenience sampling was used as the sampling method for the survey. This survey was advertised on social media, digital posters/signage with a QR code linking to the survey, and in person outside of the University of Nebraska-Lincoln's City and East Campus Unions. To avoid bias, the link was sent to departments outside of the School of Natural Resources (SNR). If SNR was the only department that the survey was geared towards, this would have led to a bias and skew of data.

In a study conducted by Katherine Hoover in 2020, these same types of methods were used to complete data collection. Hoover also completed a convenience sample, in which she asked demographic questions such as gender, income, and age (Hoover, 2020). She surveyed high school-age students, whereas, in this study, college-aged adults (19+) will be surveyed. Hoover's conclusions drawn from her study justify why this design and approach can provide sufficient data.

The sample size was 77 (19 years +) students at the University of Nebraska-Lincoln. One survey was removed from the sample because the individual claimed that they were not a student at UNL. This means that the analyzed sample size ended up being 76.

Measures

Here are the questions asked on the survey:

<p>Are you a student at the University of Nebraska-Lincoln? (Including any status: Full-time, part-time, transfer, undergraduate, and graduate)</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Other...</p>	<p>What of the options below best describes the environment you lived in as a child? (Before the age of 18) *</p> <p><input type="radio"/> Rural</p> <p><input type="radio"/> Urban</p> <p><input type="radio"/> Suburban</p> <p><input type="radio"/> Other..</p>
<p>What is your gender identity *</p> <p><input type="radio"/> Female</p> <p><input type="radio"/> Male</p> <p><input type="radio"/> Nonbinary</p> <p><input type="radio"/> Other...</p>	<p>On average, how much time did you spend outdoors weekly growing up? (1-Rarely, 2-Occasionally, 3-Sometimes, 4-Often, 5-Almost Always) *</p> <p style="text-align: center;">1 2 3 4 5</p> <p>Rarely <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Almost Always</p>
<p>What year were you born? *</p> <p>Short answer text</p> <hr style="width: 200px; margin-left: 0;"/>	<p>On average, how much time do you currently spend outdoors weekly? (1-Rarely, 2-Occasionally, 3-Sometimes, 4-Often, 5-Almost Always) *</p> <p style="text-align: center;">1 2 3 4 5</p> <p>Rarely <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Almost Always</p>

Rank the activity based on how often you did them **before the age of 18**. *

	Never	Occasionally	Often
Fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Educatio...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gardening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hiking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Watching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Rank your beliefs on climate change/global warming (1- Don't believe, 2- somewhat believe, 3- Neither agree or disagree, 4- Believe, 5- Strongly Believe) *

	1	2	3	4	5	
Don't Believe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Believe

To your knowledge which of the following **can** be recycled in the traditional recycling system? (Select all that apply) *

- Plastic Straws
- Paper
- Aluminum cans
- Styrofoam
- Cup lids
- Leftover foods

To your knowledge which of the following is **not** one of the 4 r's? *

- Reduce
- Recycle
- Reuse
- Refuse

Which best describes your perspective towards the environment **growing up**? (Before the age of 18)

- Viewed yourself part of natural systems
- Viewed nature existing for your benefit
- Viewed yourself as someone who should provide to nature (through conservation, preservation, etc.)
- Did not give any consideration to this growing up

Which best describes your perspective towards the environment **currently**? (Adulthood)

- View yourself part of natural systems
- View nature existing for your benefit
- View yourself as someone who should provide to nature (through conservation, preservation, etc.)
- Do not give any consideration to this

Which one best describes your **childhood**? (Before the age of 18) *

- Majority of the time spent outdoors engaging with nature
- Majority of the time spent indoors engaging with technology (Video games, TV, Any electronic devices)

Which one best describes how you **currently** spend most of your time? (Adulthood) *

- Majority of the time spent outdoors engaging with nature
- Majority of the time spent indoors engaging with technology (Video games, TV, Any electronic devices)

Which of these sustainability practice do you do on a regular basis? (Select all that apply) *

- Recycle
- Reduce red meat consumption
- Participate in trash cleanups
- Contact elected officials about environmental issues
- Read about environmental issues
- Take courses on environmental issues
- Talk about nature with family/friends/peers
- Consider your own impact on the environment

Each question was designed to help categorize participants into groups. These groups included: gender identity, activity level in childhood, perception of themselves towards nature, and environmental IQ.

Analysis

What of the options below best describes the environment you lived in as a child? (Before the age of 18)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Rural	19	25.0	25.0	25.0
Suburban	45	59.2	59.2	84.2
Urban	12	15.8	15.8	100.0
Total	76	100.0	100.0	

Figure 1

What is your gender identity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	49	64.5	64.5	64.5
Male	22	28.9	28.9	93.4
Nonbinary	5	6.6	6.6	100.0
Total	76	100.0	100.0	

Figure 2

	N	Minimum	Maximum	Mean	Std. Deviation
On average, how much time did you spend outdoors weekly growing up? (1-Rarely, 2-Occasionally, 3-Sometimes, 4-Often, 5-Almost Always)	76	1	5	3.95	.908
On average, how much time do you currently spend outdoors weekly? (1-Rarely, 2-Occasionally, 3-Sometimes, 4-Often, 5-Almost Always)	76	1	5	2.88	1.045
Valid N (listwise)	76				

Figure 3

Rank the activity based on how often you did them before the age of 18.

	N	Minimum	Maximum	Mean	Std. Deviation
Fishing	76	1	3	1.92	.627
Camping	76	1	3	1.80	.693
Boating	76	1	3	1.86	.743
Outdoor Education Camp	76	1	3	1.70	.712
Hunting	76	1	3	1.38	.673
Gardening	76	1	3	2.07	.660
Hiking	76	1	3	1.92	.779
Animal Watching	76	1	3	1.97	.765
Biking	76	1	3	2.39	.694
Valid N (listwise)	76				

Figure 4

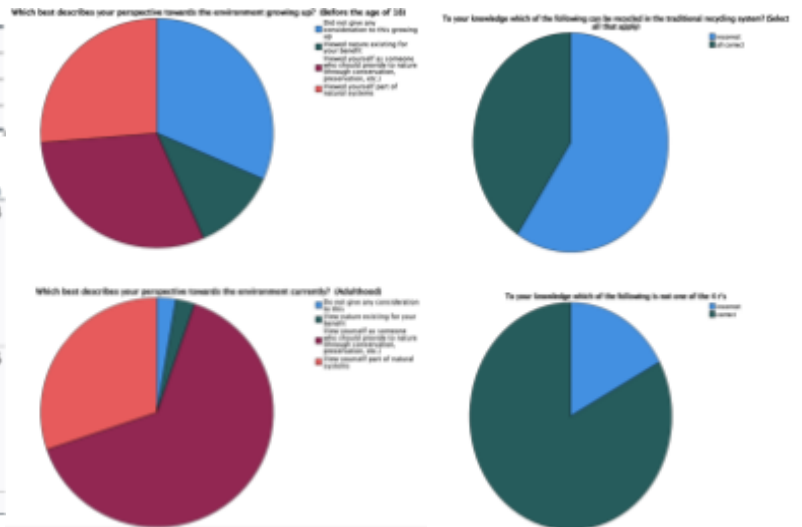


Figure 5

Figure 6

When reviewing the collected data, groupings, and modifications were made. For example, one person wrote that they grew up in a small town when asked what environment they lived in as a child. To synthesize the findings, this individual was classified as growing up in a rural setting.

To analyze the results, software called Statistics for Social Science (SPSS) was used. This software allowed for the generation of tables and graphs, allowing a visual look at the data.

When looking at the results, one participant was excluded. This individual claimed that they

were not a student at the university. Including this data may have altered the results of the research.

By using the figures above, and calculating the amount of sustainability practices each exhibiting, the conclusion is that those with a higher amount of time spent outdoors growing up exhibit more pro-environmental behaviors. These individuals also have a higher environmental IQ as seen in Figure 6. With the questions asked in Figure 6, the answers were all or nothing. Meaning if the students guessed one element incorrectly, they received an “incorrect” and vice versa.

In terms of the recycling questions, this answer could vary in answers based on the environment the students are familiar with. For example, people who grew up in urban settings were more likely to get this question right. This may be because larger communities are able to contribute more funding towards recycling and environmental education.

There was also a general trend with the people who claimed to spend lots of time outdoors in Figure 3, and how these described their perspective towards the environment. These individuals generally answered the question, as shown in Figure 5, saying that they viewed themselves as someone who should provide for nature rather than nature existing for their benefit. Considering this, these individuals are more likely to exhibit pro-environmental behaviors because they want to help nature. As stated earlier, this was also seen within the data collected.

Another potential predictor of how people perceive nature is gender. In general, individuals who identified as female or gender non-conforming viewed themselves as someone who provides for nature and as one with nature. Whereas, those who identified as men had a

larger range of how they responded. Men claimed to perceive themselves as scattered across all of the available options (viewing oneself as a part of nature, viewing nature as existing for one's benefit, viewing oneself as someone who should provide for nature or did not give any consideration to this).

Discussion

If this project were to be completed again in the future, modifications to the process could be made to answer the research questions more thoroughly. One modification, in-person interviews, would allow for conversations about vicarious learning in youth to occur. In-person conversations would have enabled elaboration on specific childhood experiences. Another modification would be surveying more people for this study. A sample size of 70+ is a great sample size, trends and conclusions would be more accurately drawn with a larger sample size.

For future studies, vicarious learning could be looked into within interviews/surveys. This topic stayed in the literature review portion, but it could have been insightful to see this theory within the results of this study. Another potential topic to further investigate is how gender impacts environmental views. As seen in the analysis section, within the survey results, gender may have been a predictor for how people perceive themselves compared to nature. This trend would be interesting to examine closer in future studies.

Timeline

	January	February	March	April	May
Continue Research					
Surveying Population					
Organizing Data					
Writing Paper					
Presentation					

Budget

Research Student:	Kaitlyn Richards	
Thesis Title: Perception of Nature Based on Childhood Experiences		
Thesis Advisor:	Julia Torquati	
Thesis Reader:	Lindsey Chizinski	
Category	Details	Cost
Stationery (list items)	<ul style="list-style-type: none"> • Research notebook • Pencil 	\$0
Printing / Copying	<ul style="list-style-type: none"> • Poster for presentation 	\$0
Postage	<ul style="list-style-type: none"> • NA 	\$0

Equipment (list items)	• Computer	\$0
Travel	• NA	\$0
Laboratory Expenses (list details)	• NA	\$0
Other (list details)	• NA	\$0
Total Amount Sought		\$0

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