Environmental identity and education among older adults: An interpretative phenomenological analysis

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Environmental identity and education among older adults: An interpretative phenomenological analysis

Abstract
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Participants endorsed a strong affiliation with the natural environment and reflected on many of the positive effects. They also expressed a number of concerns related to the future of the natural environment and current societal trends. Results highlighted the lack of research to date for this particular topic area and demographic. Implications for future research include learning more about older adults’ environmental actions and examining potential age and cohort effects as well as exploring environmental education for older adults.

Degree Type
Dissertation

Degree Name
Doctor of Psychology (PsyD)

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Subject Categories
Psychiatry and Psychology

Comments
Library Use: LIH

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Keywords: environmental identity, older adults, environmental education.
Acknowledgments

I would like to extend my deepest gratitude to the family, friends, and mentors who have kept me motivated and spent countless hours by my side through this endeavor. Thank you to my chair, Dr. Genevieve Arnaut, for your patience and remarkable guidance and to my reader, Dr. BJ Scott, for your willingness to support my research. Most importantly, I would like to thank and dedicate this project to my late Great Uncle Harold and Auntie Lou, who inspired me to challenge the assumptions I had regarding the worldviews of older adults and planted the seed for this project. I never would have guessed that a casual lunch at the beach would leave my head spinning with the very questions leading to this research. Thank you.
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Introduction

A relationship to the natural environment is a unique experience that each individual creates over the course of a lifetime. Among extant literature, the term environmental identity can be summed up as how a person relates to the natural world, which is reflected in his or her values, attitudes, and behaviors (Clayton & Opotow, 2003). Research has shown a positive association between emotional connection to the environment and favorable environmental behaviors (Hinds & Sparks, 2009). In short, if people feel for the environment and maintain a connection, they are more likely to take care of it.

The state of research on environmental identity leaves much to be discovered. For example, once an environmental identity is formed, is it rigid? Does it change over time? In addition, how is information about the environment and ecological behavior disseminated to the public? Throughout this paper and subsequent qualitative interviews, I hope to clarify the answers to some of these questions and identify areas for future research.

Many of the efforts in environmental education to date have been focused on a younger generation, while older adults have been overlooked. Yet the population aged 65 and above is projected to more than double by the year 2050, growing from 40.2 million in 2010 to 88.5 million in 2050 (U.S. Department of Health & Human Services, 2010). With such a change in demographics, questions arise about the future of our natural environment and how the increasing older population will impact it. In a paper reviewing current and past literature using a consensus conference process, Pillemer, Wagenet,
Meador, and Parise (2011) examined considerations related to aging and the environment. The consensus conference included prominent members representing fields of study from gerontology to sociology and medicine to environmentalism. Three of the major themes derived from this process included exploring environmental threats to the health and wellness of older adults, proenvironmental behavior and volunteerism in later life, and the environmental impact of housing. Specifically, the authors pointed out possible negative impacts within the current older adult demographic compared to previous cohorts of the same age group, such as increased use of cars by older adults, decreased likelihood of using public transportation in later life, and increased environmental impact from the rise in independent and assisted-living facilities. Suggestions for further research included examining older adults’ proenvironmental attitudes and behavior, identifying strategies to reduce environmental footprint, and exploring barriers to behavior change.

The purpose of the current study was to explore the experiences of older adults in developing an environmental identity and receiving environmental education. I was particularly interested in exploring current proenvironmental behaviors of older adults and potential barriers to green behavior. In this study, green behavior is defined as actions that promote sustainability and ecological conservation such as recycling, using energy efficient appliances/transportation, and buying local. For purposes of this study, older adults were defined as those 65 years and older.

The rationale for this project lies in the limited number of studies exploring environmental identity and the role of environmental education for this population. In the following literature review, I first explore the concept of environmental identity, an
emerging term in the field of environmental psychology. After creating a framework for the concept, I draw on the relation of environmental identity to ecological and sustainable behavior and attitudes, followed by an examination of the topic of environmental education. Due to the lack of research specific to older adults and concepts of environmental identity and education, I will begin each section with a broad review before addressing the relevance of the topic to this population specifically.
Literature Review

In this section, I explore the components of environmental identity, how an environmental identity influences proenvironmental behaviors, and how this information is presented to individuals across the lifespan. First, I look explicitly at environmental identity and the attitudes and experiences that help to shape this characteristic, paying special attention to older adults’ attitudes towards the environment. Next, I consider environmental sustainability and ecological behavior in relation to environmental identity. Finally, I examine environmental education in general and with older adults.

Environmental Identity

The term *environmental identity* was first coined by Clayton (2003) as “a sense of connection to some part of the non-human natural environment, based on history, emotional attachment, and/or similarity, that affects the ways in which we perceive and act toward the world” (pp. 45-46). In short, Clayton would say that the construct of an environmental identity suggests that our natural world is a salient characteristic in defining who we are.

Environmental identity is an evolving concept in the field of environmental psychology and, as such, it encompasses a broad range of definitions and meanings. Closely related to this topic are schools of thought regarding connectedness to nature, implicit associations with nature, and attitudes toward the natural environment. For purposes of this paper, the essential difference between attitudes toward the environment and environmental identity is that attitudes are assumed to be influenced more easily than
is identity. Environmental identity can be conceptualized as a component of personality, which is less flexible than environmental attitudes.

By first defining in greater detail the concept of an environmental identity, I draw upon related theories to provide a framework for the remainder of this paper. In addition, the development of environmental identity and common assessment tools will be examined.

As an integral component of identity, personality plays a significant role in how an individual relates to nature. In short, individuals who demonstrate certain personality traits may have a healthier attitude toward the natural environment than individuals without those traits. In a study examining personality and environmental concerns, Hirsh (2010) explored the relationship between personality traits and attitudes toward the natural environment. Hirsh looked specifically at Agreeableness and Openness, two of the Big Five personality traits (the other three traits are Extraversion, Conscientiousness, and Neuroticism). Participants included over 2,500 German adults with an average age just above 54 years and a fairly balanced ratio of male to female respondents (47% and 53%, respectively). Participants were asked to complete a version of the Big Five Inventory, as well as respond to questions about environmental concern. Results indicated positive relationships between both Agreeableness and Openness and proenvironmental attitudes. Based on these findings, Hirsh speculated that individuals who had a higher degree of empathy and who were less self-focused were more likely than were individuals who were lower in Agreeableness and who tended to be more selfish to foster a personal relationship to nature, which in turn was predictive of their proenvironmental attitudes.
Brügger, Kaiser, and Roczen (2010) also examined how environmental identity can be shaped through positive experiences in nature, which have been linked to efforts toward environmental conservation. In their research, a convenience sample of the general population in Zurich, Switzerland, was utilized through an Internet-based survey of approximately 1,300 participants. Participants completed a questionnaire comprised of seven instruments assessing environmental identity, connectedness to nature, environmental concern and ecological behavior. The authors suggested that these experiences also help shape how an individual views him or herself in relation to the natural environment. Environmental identity based on positive experiences in nature was reflected by findings from Brügger, et al. in the Disposition to Connect with Nature scale, one of the administered questionnaires. The authors noted that interpretation of this scale allowed a valid and accurate picture of individual differences in a person’s psychological connection to nature. To better understand how environmental identity is measured, I next explore some of the common tools used in assessment.

In an effort to operationalize environmental identity, Clayton (2003) developed the Environmental Identity Scale (EID) to determine how strongly an individual identifies with the natural environment. The EID consists of 28 items rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate greater identification with the natural environment and related causes. Two other measures have been developed to assess connection to nature. The Connectedness to Nature Scale (CNS), developed by Mayer and Frantz (2007), assesses the emotional connection an individual feels with the environment and is made up of 14 items rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Responses to
these items indicate how much a person feels a part of his or her natural world (Mayer & Frantz, 2007). Finally, the Inclusion of Nature in Self (INS; Schultz, 2001) scale takes a different approach. On a single-item graphic consisting of seven overlapping circles, the individual is asked to circle the image that best describes his or her relationship with the natural environment.

In a study exploring individuals’ connection to nature using the Implicit Association Test (IAT), Schultz and Tabanico (2007) drew from an undergraduate population at California State University for their sample. Participants completed the Environmental Motives scale and the Inclusion of Nature in Self scale. In addition, implicit associations with nature were measured through responses within two general categories on the IAT: nature/built or me/not me. Examples from the nature/built category include items such as animals, plants, and trees, or car, city, and factory. Examples from the me/not me category include me, mine, and myself or other, their, and them. Findings suggested flexibility in self-nature associations; however, the potential for change in how closely an individual associated him- or herself with the natural environment was largely dependent upon long-term repeated experiences. The authors also concluded that implicit associations with nature may be somewhat malleable but are not easily manipulated as a result of context.

Environmental Identity and Attitudes Among Older Adults

Research specific to the attitudes and beliefs of older adults toward the natural environment is scarce at best, and I could find no research specific to older adults and environmental identity. The little information that is available has typically been presented in popular press or on websites and blogs rather than in scholarly works. In a
In a study looking at positive relationships between identity maturity, generativity, and environmentalism, Matsuba et al. (2012) suggested that as individuals develop a mature identity they tend to have greater openness to concern for generative issues related to the environment, (i.e. global warming, pollution, etc.) which in turn provides motivation for proenvironmental behaviors. Openness to concern could be viewed in relation to older adults who, by virtue of their age, are assumed to have a mature self-identity. As a result, older adults may feel motivated to engage in environmental behaviors out of concern for younger generations. Matsuba et al. conducted a study exploring the influence of generativity and identity development as motivation for environmental behavior in a sample of over 100 Canadian individuals (half of whom were environmental activists). Participants completed questionnaires related to identity, generativity, and the environment. The authors found a significant correlation between identity maturity and environmental identity, suggesting that individuals with greater identity maturity would be expected to act in ways that would preserve the environment.

In another study examining generativity across three age groups (young adults 22-27 years old, midlife adults 37-42 years old, and older adults 67-72 years old), over 150 participants in California were asked to complete measures regarding generativity,
quality of life, and behavior (McAdams, de St. Aubin, & Logan, 1993). The authors compared age-cohort differences in four features of generativity, including generative concern, commitments, actions, and narration. Similar to Erickson’s developmental theory, participants in the midlife group scored higher than did young and older adults on generative concern (McAdams et al., 1993). Young adults scored lower than did midlife and older adults on generative commitments and narration.

**Environmental Sustainability/Ecological Behavior**

Having a positive experience in nature is likely to encourage ecological behavior (Harting, Kaiser, & Strumse, 2007). For purposes of this paper, ecological behavior refers to actions that preserve the natural environment. Some examples include recycling, riding a bike rather than driving a car, not using aerosols, using alternative energy, and using a re-usable bag. In this section I briefly define how the term *environmental sustainability* was used for purposes of this study. I then examine two models that describe ecological behavior and environmental sustainability. Additionally, I address potential barriers to acting in environmentally friendly ways, as well as factors that may promote green behaviors in older adults.

The concept of sustainability with regard to policy was first introduced in the Brundtland Report of 1987 (Kulman & Farrington, 2010). Although the term *sustainability* covers more than just environmental concerns, including economic and social/political sustainability, the term used hereafter refers to sustainability of the natural environment. It encompasses a number of potential actions and behaviors that are intended to preserve resources and minimize impact on the environment. Specifically, *environmental sustainability* focuses on use of commodities such as food, water, air and
energy (Goodland, 1995). A similar definition of sustainability by Kuhlman and Farrington (2010) highlights the importance of maintaining wellbeing for future generations. In short, environmental sustainability is concerned with preservation of natural resources through conscious thought and intentional behavior.

Two behavioral models of sustainability and ecological conservation have been developed. The first model merges both social and psychological influences on behavior and it implies that how an individual acts toward the natural environment is a result of numerous factors including past experiences, situational context and motivations (Clayton & Brook, 2005). This social psychological model of conservation behavior lends insight into what maintains certain actions and what may initiate positive change. Clayton and Brook (2005) highlighted the influence that others’ expectations and behavior has on an individual’s behavior. That is, people generally obtain information about how to act by observing those around them, and social norms are highly influential in determining behavior, which the authors identified as the first premise of their model. Along these lines, Clayton and Brook referenced a study in which individuals were found to be less likely to litter if they observed someone else picking up litter than if they had not observed such behavior (Reno, Cialdini, & Kallgren, 1993). The second premise of the social psychological model suggests that past experiences, stored knowledge, and motives have a strong influence on individual’s understanding of their context.

A second model of responsible environmental behavior resulted from a meta-analysis conducted by Hines, Hungerford, and Tomera (1987), who sought to identify factors that had the greatest influence on encouraging proenvironmental behavior. Hines
et al. noted that responsible environmental behavior was the result of not just knowledge, but of other factors such as attitudes, locus of control, accessibility, and action.

Both models just discussed share a similar focus of promoting sustainable behavior by acknowledging the necessary steps that need to be taken. With a brief understanding of two models of ecological behavior I now shift towards exploring factors that might encourage or possibly inhibit such behavior.

**Considerations for Ecological Behavior**

In a study examining why individuals act environmentally, Tabernero and Hernández (2010) distributed measures exploring environmental behaviors, intrinsic and extrinsic motivations, and self-regulatory behaviors. Participants were more than 1,000 adults residing in Cordoba, Spain, over 40% of whom were aged 51 years or older. These individuals were randomly sampled and asked to complete a questionnaire, which contained items related to demographics and three questions related to specific recycling behaviors. The last part of the questionnaire contained measures of intrinsic and extrinsic motivation and measures of variables of self-regulation. Findings supported the notion that both self-efficacy and intrinsic motivation are important for individuals to engage in environmentally responsible behaviors.

Ecological behavior, as depicted above, is a combination of knowledge, affective components, and willingness. In a paper stemming from a conference on aging and the environment at Cornell University, Boscia (2010) explored the topic of helping older adults understand the future of the natural environment and suggested that older adults may prove to be a valuable asset in environmental conservation. Specifically, the author pointed out that many older adults have time, money, and motivations not present among
other demographics. Additionally, the author suggested that older adults are driven by a sense of generativity; that is, they want to leave the world a better place for future generations.

Although older adults may have initiated the movement in past decades toward being more environmentally friendly, the infrastructure and support to continue acting ecologically is not in place. As Boscia (2010) stated in his paper, “the green movement may have to go gray” (p. 19). He also indicated that further research specifically addressing the changing environmental attitudes of older adults was necessary to better understand motivation to support environmental causes. Even though there may be a working knowledge of what constitutes ecological behavior, older adults may still be challenged to act in congruence with their beliefs. Boscia also suggested that this challenge might have risen from a lack of dedication and research at engaging the older adult population at efforts to improve their relationship with the natural environment.

As reflected above, a large divide lies between environmental knowledge and proenvironmental behaviors (Kollmuss & Agyeman, 2002). In a comprehensive review of the literature, Kollmuss and Agyeman (2002) clearly outlined past and present models of ecological behavior and pointed to a multitude of barriers to acting ecologically ranging from economic factors, social/cultural factors and motivation. What follows is a closer look at how knowledge of the natural environment is obtained.

**Environmental Education**

In this section, I continue to explore the role of environmental education across the lifespan, how older adults might obtain education about the natural environment, and potential challenges older adults might face in the acquisition of this knowledge.
The topic of environmental education was first formally addressed at the Tbilisi Intergovernmental Conference on Environmental Education of 1977 (Hungerford & Volk, 1990). What resulted from this dialog were five central objectives regarding environmental education, including awareness, sensitivity, attitudes, skills, and participation. Although the intention behind such objectives was to promote ecological behavior through increased knowledge, Hungerford and Volk (1990) identified factors such as the economy, social influence, and personal choice as determinants of whether or not individuals act proenvironmentally. Thus, whereas environmental education aims to change behavior, many other factors must be considered to ensure the knowledge is put to use. Hungerford and Volk also pointed to “critical educational components” that, when implemented on various levels, have the possibility to maximize potential for a change in behavior. The overall objectives of individuals engaged in such discourse are to further exploration on development of environmental education programs, foster public awareness about these concerns, present problems and solutions, and engage an active community (Ballantyne, Connell, & Fein, 1998).

Education is believed by many to be a central tenet of change, as noted in the discussion about critical education components above. But how does information about the environment make its way into the minds of those who have the greatest power to make a difference? Educational programs addressing the rising concern for our natural environment are introduced at a young age in the United States, and by the time they are in elementary school many children have been exposed to curriculums related to environmental issues (Stewart, 2001). In one survey of middle school students in the United States, 9% reported that they had learned about the natural environment at home,
31% had learned about it in school, and 53% stated that their primary mode of learning about the natural environment was through various media (Stewart, 2001). Although various media are common avenues of relaying information, the different types do not always prove to be equally reliable. A more reliable medium is specific programming aimed at environmental education.

The role of environmental education programs is a key component in initiating change. However, there is debate within the literature regarding the most effective approach. Pooley and O’Connor (2000) suggested that programs need to target the affective domain to influence environmental values and behaviors. Pooley and O’Connor administered an Environmental Attitude Survey to a convenience sample of 92 participants in Australia ranging in age from 18 to 55 years. Results suggested that both affect and cognition were integral factors to consider in environmental education programs to increase the likelihood of behavior change. It was also suggested that programs should extend beyond the classroom and involve the larger community. Additionally, Pooley and O’Connor recommended that focusing on individuals’ emotions and beliefs about the environment could be a more effective approach than a focus on knowledge alone.

During early adulthood, opportunities for environmental education are diminished as young adults enter careers or college. Whereas in grade school environmental education might have been integrated into many curricula, it is not a central focus in higher education unless pursued. Those who have a particular interest in environmentalism may choose to take specific classes and continue to build their knowledge, whereas individuals who do not pursue a related major are not offered the
same choices. The path of environmental education can almost be viewed as a funnel, narrowing as we move across the lifespan. Although present in early childhood through formal education, additional knowledge about the natural environment becomes optional for those later in life.

Little is known about the environmental attitudes, concerns, and actions of older adults or how the growing older adult population will impact the environment (Wright & Lund, 2000). What is known is that significant changes need to be made in environmental adult education due to the lack of available opportunities (Bush-Gibson & Rinfret, 2010). In a paper exploring the idea of environmental education for adults, Bush-Gibson and Rinfret (2010) examined how to approach this task in formal and informal settings. They proposed that one way to improve older adults’ education about the natural environment is through transformational learning, which has the essential goal of transitioning adults’ basic knowledge about the environment into an action phase.

One way of seeking engagement in proenvironmental behavior, and ultimately education about the natural environment, is through national groups and organizations. Organizations such as the Environmental Alliance for Senior Involvement (EASI) aim to engage older adults with the environment though volunteerism and other means (Morrow-Howell, 2006). Technology has also provided a platform for environmental education among older adults; for example, the organization Gray is Green (www.grayisgreen.org) refers to itself as the leading environmental education, action, and advocacy organization for older adults.

As highlighted by Wright, Caserta, and Lund (2003), “the natural environment has been a missing topic from education and public policy forums concerning an ageing
society” (p. 151). Additionally, most adults gain knowledge about environmental education through the media, a method that has proven ineffective at influencing environmental action (Ballantyne et al., 1998). This statement draws attention to the fact that, despite a desire to protect the environment, many older adults do not want to involve themselves in protective actions, such as making significant lifestyle changes (Wright et al., 2003). Wright et al. collected data from 394 older adults in southwestern Utah (55 years and over) who were asked to complete self-report questionnaires regarding environmental concern and attitudes. They found that one of the most influential factors in taking action in support of the natural environment was encouraging a higher level of awareness of environmental consequences. As suggested by the authors, older adults would be more willing to change their behaviors if they were made aware of the environmental impact. Limitations of the study were specific to the demographics of the sample; participants were primarily White, married, educated, and religiously affiliated.

Another challenge in educating older adults about the natural environment is that ways in which environmental education is made available must both appeal to and be accessible to diverse populations, including older adults (Stewart, 2001). Access to environmental education may be a barrier for older adults, even if they choose to pursue it. As noted by Ballantyne et al. (1998) in an article looking at intergenerational influences in environmental education, educating adults can be problematic. Some common barriers highlighted by the authors included the size of the community education audience, lack of time or commitment, lack of funding or resources, and lack of programming. One potential solution offered by the authors involved helping elementary school children teach their parents and others in the community about what they have
learned about the environment. The intention behind such an intervention is to spread knowledge to those who are not immediate consumers of environmental education and would not otherwise receive it. Bush-Gibson and Rinfret (2010) also noted that older adults were a good example of a demographic that could benefit from intergenerational learning.

**Purpose of the Current Study**

The above literature review highlights the absence of older adults in research conducted on the concept of environmental identity, motivations for ecological behavior, and the efficacy and design of environmental education. The objective of the current study was multifaceted. At a minimum, I aimed to raise awareness about the fact that older adults are often overlooked when it comes to improving proenvironmental behaviors and providing environmental education. Because little is known about this topic, I used using qualitative methodology to collect and analyze the data. The rationale for this approach was based on the richness of data that can be extracted from qualitative interviews. This characteristic allowed for unique insight into understanding the experience of older adults in relation to their environmental identity and obtaining environmental education.
Method

Qualitative Methodology

Although to date quantitative approaches have been the primary method for exploring environmental identity and education, it was expected that qualitative methodology would capture the essence of defining what an environmental identity means for older adults. Qualitative research allows for the individual to provide a genuine, authentic response without an a priori hypothesis or theory. Qualitative methodology is a valued approach within health services and health policy research and can be a way of giving voice to underrepresented populations (Sofaer, 1999). It also serves as a means of reducing bias and generating areas for additional research (Sofaer, 1999), which are especially relevant to this proposal. Results are specific to this sample and reflective of how participants have come to learn about the natural environment as well as gain insight into their relationship with the natural environment.

The qualitative approach chosen for this study was Interpretative Phenomenological Analysis (IPA). This approach, which draws on the principles of phenomenology, aims to bring understanding to the lived experience of a research participant regarding a particular phenomenon (Reid, Flowers, & Larkin, 2005). The foundational theories underlying IPA include phenomenology, hermeneutics, and idiography, which share similar aims of interpreting and finding meaning in individual experience (Smith, 2011). Researchers using IPA attempt to understand the perspective and experience of the individual participants as closely as possible by learning to see things as the participants see them (Smith & Osborn, 2008). IPA uses a bottom-up, or
inductive, strategy that reinforces the richness and quality of the data by focusing on the individual account rather than testing a hypothesis (Reid et al., 2005). Additionally, as part of the research process and analysis, it is important that the researcher suspend prior beliefs and assumptions to stay as close to the participant’s experience as possible. Qualitative inquiry requires the researcher to attend to the process and remain present in the moment.

IPA was chosen for this study due to the richness of data that can be yielded through this approach. As such, an in-depth process such as IPA has helped build a foundation for future research in this area by identifying themes and commonalities among participants.

**Sample Characteristics**

For this study, I targeted a specific age demographic, thus employing purposive sampling methods to draw from a pool of older adults at a local senior community. Snowball sampling was also employed to recruit peers within the same target population. My inclusionary criteria were as follows: Participants had to be autonomous adults who lived independently in a senior community and who were at least 65 years of age but not older than 84 years of age. The rationale for this age range stemmed in part from literature examining clinical issues in older adults. Bayer (2011) found that individuals who fell within the “old-old” age range (85+) were more likely to be functionally dependent and both physically and cognitively frail than were individuals in the “young-old” and “old” age ranges (65-84), who are in good health much of the time. Additionally, older adults who are not functionally independent may not have the same options for proenvironmental behavior as independent older adults. Thus, the likelihood
that participants would meet study criteria was increased by marking a cut-off at 84 years old. In addition, those individuals who resided within the community but who met requirements for assisted living were excluded from the study because they may not have been functionally independent if they met requirements for assisted living, in turn suggesting that they may be more physically and cognitively frail (Bayer, 2011) and have more serious health problems. Individuals were also excluded if they could not read or write in English or if they could not complete the semistructured interview or written measures for any reason.

As highlighted by Smith and Osborn (2008), there is “no right answer to the question of the sample size” (p. 56) with an IPA approach. Smith and Osborn noted that successful studies have employed single-case design, and five or six interviews have been recommended for student research. In the current study, I interviewed five participants. As a whole, the sample was fairly homogenous; all participants were White, retired, and female, and nearly all had completed a graduate degree (80%). The average age of participants was 80.4 years ($SD = 3.2$). The median age of participants was 82 years, with an age range between 75 and 83 years of age. Two of the participants were married, two were widowed, and one was divorced.

**Measures and Interview Questions**

**Interview Questions.** The semistructured interview was guided by two sets of questions. The first set explored environmental identity and the second was specific to environmental education. These questions were intended to be open-ended and allowed for depth of response.
**Environmental Identity Questions**

- How would you describe your relationship to the natural environment (i.e., the outdoors, the wilderness, and so forth)?
- What are some of your attitudes and beliefs about the natural environment?
- What behaviors do you believe are influenced by your relationship to the natural environment (e.g., recycling, spending time in nature, buying organic products, and so forth)?
- How do you believe your relationship with the natural environment has developed over your lifetime? How has this relationship changed over the years?
- What important experiences do you believe have contributed to your sense of self in relation to the natural environment?

**Environmental Education Questions**

- How have you learned about the natural environment?
- What opportunities have you had during your lifetime to learn about proenvironmental behaviors, ecology, and sustainability?
- Can you think of a specific time during your education or early adulthood when you were taught about the natural environment or ways to protect it? What value does environmental education have?
- What trends have you observed regarding proenvironmental behaviors and attitudes?
- What do you know about sustainable practices such as recycling, using alternative transportation, buying local and “being green” in general?
Interview questions were designed to serve as a guide and not as an exhaustive list to be answered. Throughout the interview, I aimed to build rapport while also eliciting rich data through follow-up questions as necessary.

**Environmental Identity Scale.** The Environmental Identity Scale (EID) was also administered to supplement the descriptions that participants provided regarding their concept of environmental identity. IPA has been noted to work well in mixed-method studies that incorporate both qualitative and quantitative data (Smith, 2011). Furthermore, use of a semistructured interview allowed for a broader definition of environmental identity as it pertained to older adults and served as a comparison during data analysis.

The EID is a 28-item self-report measure created by Clayton (2003) to assess an individual’s relationship to the natural environment (see Appendix C). Each item is rated on a 5-point Likert scale from 1 (*strongly agree*) to 5 (*strongly disagree*). As noted by Clayton, high scores indicate greater identification with the environment and causes related to the environment.

Olivos and Aragones (2011) explored the psychometric properties of the EID using a sample of 282 university students to examine the construct and convergent validity of the measure. Participants completed the EID in addition to similar measures such as the Connectedness to Nature Scale (CNS) and Inclusion of Nature in Self (INS) scale. The average score on each item of the EID was 3.58 (*SD* = 0.51), which suggested that participants identified with the natural environment. Internal consistency for the EID was high, as reported by Olivos and Aragones at .90. Findings from the same study also suggested consistent construct validity and the EID as an overall reliable measure for assessing the degree of environmental identity.
Demographics Form. Participants were asked to complete a brief demographics form that included questions regarding age, gender, race, ethnicity, and other descriptive variables.

Procedure

Solicitation for study participants began following approval from the Pacific University Institutional Review Board. Once permission was granted to recruit participants, a time was selected to present the topic and research study to a group of residents at an older adult living facility located in Hillsboro, Oregon. The study and the criteria for participation were discussed during a scheduled presentation to a group of residents at the facility. After the presentation, interested individuals were asked to provide contact information (either phone number or e-mail) to schedule a convenient time for an individual interview. Interested individuals were prescreened for eligibility at that time.

I completed in-depth, semistructured interviews with each participant. I interviewed participants until saturation of the data became apparent with a target of five and 10 interviews. Saturation of the data was indicated when consistent themes began to emerge through the interview and transcription process and was largely dependent upon the richness of data collected. Data collection commenced after the first participant agreed to complete the study and continued until consistent themes began to emerge and saturation was achieved. Interviews took place at the adult living facility in a private conference room.

The procedure with each participant was as follows: At the beginning of each individual session, I explained the study in more depth. I reviewed the informed consent
form, obtained the individual’s consent, and answered any questions. Data were gathered through semistructured in-person interviews lasting approximately 1 hr. To orient participants to the content of the study prior to the interview, they were asked to complete the Environmental Identity scale (EID) and a brief demographics questionnaire. Interviews were audio recorded.

Participants were debriefed following the interview and encouraged not to discuss the nature of the study with other members of the community until data collection had ended. Once the interviews were complete, each record was transcribed verbatim. Data analysis followed transcription and resulted in a narrative summary of findings.

Data Analysis

Three key components in the process of IPA analysis include interpretability (i.e., that the analysis remains subjective), transparency (i.e., that it uses examples from the data), and plausibility (i.e., that it makes sense to participants and readers; Reid et al., 2005). Reid et al. (2005) also highlighted the importance of self-reflection. They noted that the researcher using IPA should be able to comment on his or her role in processing the data and writing the narrative, as well as what considerations should be made regarding any outside influences.

With respect to my own self-reflection, I initially became interested in this topic through a conversation with two older relatives. During that conversation, I realized how little I knew about older adults’ environmental attitudes and behaviors. To assist in self-reflection throughout the study, I kept a research journal. This allowed me to review themes, to compare the words of participants to my own, and to ensure that personal biases and influences were minimized. This process allowed me to remain as close as
possible to understanding the lived experience of the participants and reduce the themes
to those truly reflective of the interviews. One example of how self-reflection and
keeping a research journal aided in bracketing was during thematic analysis and writing
the narrative. Initially, I interpreted a subtheme of helplessness stemming from
participants’ concerns about the future of our natural environment. During the process of
writing the narrative, continually referencing the transcripts, and incorporating objective
feedback, I realized that the sense of helplessness was really my own. Although
participants’ concerns and fears for the future were valid, the theme of helplessness did
not accurately reflect their phenomenological experience.

Data analysis followed guidelines suggested by Smith and Osborn (2008). I began
by reading the first transcript multiple times. In the left-hand margin, I took notes
regarding significant statements, language used, or comments regarding the content of the
interview. Once this step had been thoroughly completed, I started again from the
beginning and used the right-hand margin to identify potential themes as recommended
by Smith and Osborn. The next step required that I begin looking for connections among
the themes by listing them on a separate sheet of paper. Once this was accomplished, the
themes were translated into a table and checked for accuracy within the transcript. This
process was completed for each of the transcripts. To ensure reliability, two transcripts
were analyzed by a peer researcher familiar with qualitative research; I reviewed the
themes generated by the second reader to identify any significant discrepancies from my
own themes and modified my themes as appropriate based on the reader’s input. Finally,
a table of superordinate themes was created, drawing from those within each individual
account. At that time, data were reduced and a master thematic table was put together.
The final stage of analysis involved taking the themes across all interviews and forming a narrative. During the write-up, it was important to include verbatim excerpts from the transcripts to help capture the essence of individual experience while also highlighting similarities across accounts.

It is important to note that, for a successful IPA study, the guidelines for analysis must be followed closely. In a recent paper reviewing the contribution of IPA to research, Smith (2011) detailed criteria for his IPA quality evaluation guide. Smith stated that a good paper, while also meeting all the requirements of acceptable IPA research, is well-focused, has data and interpretation that are strong, and keeps a reader engaged. I aimed to adhere to these guidelines during the research process, analysis, and write-up.
Results

The purpose of this study was to describe older adults’ sense of environmental identity and understanding of environmental education throughout their lifetime. Qualitative interview and thematic analysis using IPA were the primary methods I used to extract the essence of these individuals’ experiences. Additionally, I used the EID as a reference to assess degree of environmental identity. In this section, I briefly review descriptive statistics and interpret results from the EID. I continue by focusing my attention on the phenomenology, which is supported through thematic analysis, direct quotes, and similarities across interviews.

Environmental Identity Scale

Total possible scores on the EID range from 28-140, with a high score suggesting that an individual had a strong identification with the natural environment and, subsequently, with environmental causes (Clayton, 2003). The mean score on the EID for participants in the current study was 99.1 ($SD = 11.86$), suggesting high identification with the natural environment and environmental causes. It also suggests high awareness of environmental concerns. The average score for each item on the EID was 4.13 out of 5 ($SD = 0.49$). This score reflects greater affinity towards the natural environment compared to the norming sample’s average item score of 3.58 ($SD = .51$; Olivos & Aragones, 2011). The participants’ high scores in the current study mirror the essence of the research findings noted below. The qualitative analysis adds authenticity and unique understanding to this EID score. Participants reported that some items on the measure were not applicable due to their age and/or physical limitations (e.g., *I really enjoy*
camping and hiking outdoors, I take pride in the fact that I could survive outdoors on my own for a few days, and I spend a lot of time in natural settings).

Participants’ Identities

A review of the transcripts revealed broad categories within each set of questions. The first set of questions pertained to environmental identity and the second pertained to environmental education. Table 1 provides a representation of the themes and subthemes found in the interviews that were reflective of participants’ identities. Main themes included respect, connection, wellbeing, sources of knowledge, and generativity. A number of subthemes were also identified and are detailed below. It is important to note that, although the broad theme of generativity and its accompanying subtheme were consistent with participants’ identities, their detailed accounts of fears for the future were reflective of how the participants perceived others. In essence, their responses supporting this subtheme highlighted a distinction between their phenomenological experiences and their views of younger generations’ experiences.

Theme I: Respect. Within the broader theme of respect arose numerous subthemes related to a positive relationship with the natural environment. Participants’ reverence for the natural environment and appreciation for all it has to offer was clearly indicated throughout the interview process. The participants’ conception of environmental identity is demonstrated in the following sections through detailed extraction and analysis. The following subthemes, excerpts, and quotes portray the essence of environmental identity for these five participants.

Subtheme I: Appreciation for nature. During the course of the interviews, all participants referenced appreciation for the natural environment. This appreciation ranged
from simple admiration of natural beauty and standing in awe of God’s creation to gratitude for what can be provided for by the earth. As Participant 1 stated, “It’s just important—what you put into the ground is what you get back.” The participant continued to describe how her family’s livelihood as farmers depended greatly on a reciprocal relationship with the natural environment. She elaborated on how observing her father working in the fields fostered her appreciation of this relationship and how her father had imparted his knowledge of caring for the earth upon her.

Regarding the reverence for natural beauty, Participant 5 described a memorable experience from a camping trip: “The granite rocks you see…just beautiful, great big granite rocks and us, those memories, makes memories that go with you. You don’t get
rid of the environment, it’s always in your head.” She described numerous trips and adventures with her family that allowed them to experience the many natural wonders of their surroundings. Furthermore, her statement also suggested the impact that appreciation for the natural environment could have as something unforgettable.

Two participants’ identification with religious faith demonstrated a third perspective of appreciation. When describing her attitudes and beliefs about the natural environment, Participant 5 was matter-of-fact, stating, “Well, God made it for us I mean, it’s amazing…” Similarly, in defining the intersection of her religious beliefs with her environmental identity, Participant 2 commented, “I believe in a, more essence of the divine, and that essence I find in you and everyone here and uh, every living thing, and so that makes all living things precious.”

Although the driving force behind each participant’s appreciation and respect for the natural environment varied slightly, all participants expressed their views in genuine and authentic ways.

**Subtheme II: Responsibility for environment.** Throughout the interviews, all participants emphasized a feeling of responsibility for the environment. Values of conservation and preservation were inherent within this theme. When asked about her attitudes and beliefs about the natural environment, Participant 2 stated the following:

Well, I think we’re responsible for it. Ya know, we’re part of it. We have no right to destroy it. We have, uh, it’s not there for us ya know so, we are not in charge of it, we’re keepers of it really. Just like we’re keepers of our own children. Ya know we’re keepers of all of that and uh, and that’s kind of our mission to – to keep it and take care of it.

Later, she noted, “I think we’re keepers…I guess, of the planet.” Similarly, Participant 5 commented on motivation to take responsibility for the environment, noting,
“When you see the damage that’s been done to the earth people want to correct that.” As participants reflected on their experiences in the natural environment, they referenced the finite nature of resources and the dangers of environmental exploitation. Participant 1 discussed her experiences growing up on a farm and her intimate connection with the land, saying, “We learned how to rotate crops so that it didn’t eat up the earth.” Again, participants expressed sensitivity for the natural environment and reiterated respect through the value of behaving responsibly. Later, in thinking of behaviors that were influenced by her past, Participant 1 noted, “Well, [what] I brought from my past is that you take care of what’s there and give back.” Participant 2 similarly shared, “You don’t let, ya know, talking about Mother Earth, you don’t let your mothers just decay and die.”

Two of the participants referenced national parks or groups such as the Audubon Society or Sierra Club as ways of gauging peoples’ awareness of conservation and taking accountability for preserving the natural environment. Overall, being accountable and taking responsibility for the natural environment proved to be a poignant subtheme within the broader context of respect. As Participant 4 explained, recycling in the 1970s was a concerted effort and, for many people, a deterrent. Throwing something in the garbage was much more convenient:

When did we start recycling in this country? The first recycling that I remember, um, was when we were living in Hyde Park as young faculty members. There was a recycling center in the neighborhood, we’d drive our stuff over there. Um ya know, a place where you would usually have walked to there but we drove the glass bottles and this, that, and the other.

Participant 4 further explained her commitment to recycling and highlighted the importance of choice:

Yeah, I mean we’re conscientious about recycling. We do, ya know, paper, tin, glass, everything, even where it’s been difficult to do it. I get very upset to see
people who are, don’t pay attention to it at all, um, I think, I think probably we’re gonna, run out of everything.

**Subtheme III: Indifference of nature.** Two participants referenced the stark reality that nature is indifferent. They drew from personal experiences to describe coming to terms with the fact that nature is apathetic towards injury, disease, disability, and circumstance. As part of the broader theme of respect, participants reflected how we as humans are at the mercy of nature. As Participant 4 stated, “I do think nature is indifferent. To people and, therefore, it’s terribly important to be safe.” Later in the interview she described her husband’s diagnosis of a degenerative disease and the ambivalence in nature that they both experienced as a result. The following quote about her husband’s disease highlights this subtheme well:

> It affects upward and downward vision but not straight ahead and so on, and it also slurs speech and ultimately it affects swallowing, it’s a little bit like ALS [amyotrophic lateral sclerosis] except it, that isn’t what it is but anyhow, uh, um, the elk didn’t notice…the mountains didn’t notice [his struggle] but it became harder and harder to relate or to do what you needed to do for ourselves for each other and so on in isolated circumstances.

Participant 4 summed up her experience by remarking, “Nature is truly indifferent.”

Other participants shared how physical limitations played a role in their relationships to the natural environment while also referencing how nature did not make special accommodations. Participant 3 discussed how her physical limitations “took over” her ability to spend time outdoors, noting, “Since my knees have gotten bad, the circle I travel just got smaller, so that physical decline really influences what I can do.” The essence of participant responses seemed to suggest that, although the environment continues on around us, it does not cater to our aging selves.
Subtheme IV: Intergenerational influences. Intergenerational influence was often described as one way participants developed a relationship with the natural environment. All participants made references to learning from parents and grandparents during formative years and then from children and grandchildren later in life. Describing the latter, Participant 2 commented, “I think I’ve learned a lot from my children,” regarding how she views her own relationship to the natural environment. Regarding intergenerational influences, Participant 3 added, “How you think turns up in your children sometime, you aren’t even conscious of the effect you’ve had.” In describing formative experiences with the natural environment, Participant 1 discussed learning respect from her father:

Well, my dad was always a fabulous farmer, always had a feel for the land. He could go out in the mornings and take a piece of hay and twist it a little bit and smell it and say, “Okay, it’s time to cut the hay,” and he had that kind of sensitivity to his environment.

Two participants also expressed the importance of sharing their appreciation for the natural environment with their children and grandchildren. Participants noted how spending time outdoors as a family allowed their children to experience the wonders of nature firsthand. Participant 1 described a fond memory of her daughter experiencing the natural environment:

My favorite vision of my oldest daughter in my mind was when we lived in Colorado. We were taking a drive, as I always like to get out and drive and be in the, out in the woods. She would, would stop, she’d go leaping down the road just throwing her hands up and just enjoying and exuberating in nature.

Later, Participant 1 continued by explaining the value she saw in exposing her grandchildren to the natural environment. Describing herself as an “encourager,” she
stated, “…and I’ve taken each one of ’em to different places and we’ve done different things and I think that’s been good for them. They remember that with pleasure.”

Subtheme V: Influence of religious beliefs. The influence of religious beliefs was another subtheme that emerged within the broader category of respect for the natural environment. Three participants referenced their involvement within religious communities as foundational for the respect they had for the natural world. In describing why she believed people should care about the natural environment, Participant 5 replied, “…to commune with God and be thankful for what He’s given us.” Later, she described how the Unitarian church helped her build a deeper appreciation for, and connection to, the natural environment:

When we belonged to the Unitarian church back in Pennsylvania, we had connections with an organic farmer. You bought a share and every week you got a bag of wonderful fresh food People that are attracted to that kind of religion are the ones that would be in the Sierra Club, and so they’re the kind of friends I had.

Participant 3 elaborated on her experience of the Unitarian faith: “Well, we’ve been Unitarians for many years and that’s one of the principles of the Unitarian church: that you’re one with nature. No better, no worse.”

Theme II: Connection. All participants spoke of a definitive sense of connection in their relationship with the natural environment. They described feeling that they were a part of something bigger than themselves and of the “circle of life,” as well as feeling a sense of continuity. They also discussed ways in which developing a connection to the natural environment could be jeopardized. Subthemes included a sense of belonging and increasing awareness.

Subtheme I: Sense of belonging. Stemming from the broader theme of connection, all participants noted that their relationship with the natural environment
often provided a sense of belonging to something bigger than themselves. Regarding her sense of self in relation to the natural environment, Participant 4 responded in the following way:

I’ve always felt, because I think people are, as human beings, we’re part of the natural environment, but we have, most of us, been acculturated to feel separate from it, um, and I’m not talking about people who see, uh, uh, are animistic and see souls in rocks and so on and so forth. Uh, I have never seen souls in rocks, um because that isn’t part of what I was ever taught, but it is a part of what some people are taught, and they are very respectful of nature.

Participant 2 shared a similar experience regarding sense of connection:

Well, you feel like you are a part of something so big and uh, so that you’re, you are a part of this huge system of life. It’s a, it’s an example of, of life and of course especially with rocks and fossils you realize that life had gone on for millions of years and so you had this feeling of continuity with it. Several participants also described a sense of community, fostered through a positive relationship with the natural environment. Participant 5 described how spending time in nature could bring people together, noting, “You build a relationship with people also. When you’re out you have things to talk about like falling stars, the granite rocks…” Likewise, Participant 3 spent time recounting camping trips with her family and described what it was like to be away from technology and the stress of work: “We were really part of the environment.” Participant 1 also noted how a sense of community was achieved through interaction with the natural environment. She described her experience of growing up in a farming family:

’Cause what we raised and stuff and uh we learned to…early on to take care of victory gardens back in the times of war and uh, we did a lot of helping neighbors with different things that they needed ’cause we were all farmers so everybody helped everybody else and all the people that I knew took good care of their land.
Later, in discussing how her relationship with the natural environment had developed over her lifetime, Participant 1 simply stated, “It’s a part of me and part of my family.”

**Subtheme II: Increasing awareness.** Three participants highlighted a relationship between their sense of connection to and their awareness of the natural environment. This relationship suggested that increased awareness of environmental concerns led to having a greater sense of environmental identity, which, in turn, fostered greater respect for the natural environment. Participant 4 reflected on current trends and noted, “I think it’s in the culture now, to be careful of the environment or certainly [to be] aware of environmental issues.” She later described how her increased awareness led to thinking consciously about choices to buy local, which led to feeling connected to her immediate surroundings.

Regarding trends in proenvironmental behaviors and attitudes, Participant 1 shared similar sentiments congruent with her beliefs and experiences: “I think people are becoming more aware of what the environment has to do with their lives.” With this increased awareness, she later described how people may feel a more personal relationship to the natural environment and be influenced to make earth-conscious decisions because “they feel like they are an integral part to some degree.”

**Theme III: Wellbeing.** Wellbeing was the final broad theme that emerged out of the questions related to environmental identity. All participants commented on an experience in the natural environment that was restorative or therapeutic. Two main subthemes arose: therapeutic value and a sense of comfort.
**Subtheme I: Therapeutic value.** All participants described the benefits of having an established relationship with the natural environment, including relieving stress and providing a sense of peace and ease. Participant 5 commented, “I mean that ocean, ya know, it takes all your worries away when you see that ocean, it’s healing.” Similarly, when asked what she noticed about herself while outside or in nature, Participant 1 replied, “What do I notice? Calmer.” Later, drawing from another example of the therapeutic value of the natural environment, she spoke of her sister-in-law:

And she works with dead, death a lot so she has a lovely garden and they’d just gotten their kids moved into her dad’s old house, which was redone so, and yesterday I was over there and she and both little boys were out in the yard planting and she, it’s important for her she said, that’s the only way she can renew with the stress she’s under all the time.

In describing her relationship to the natural environment, Participant 2 shared what it was like living in Michigan and how this was healing for her:

So uh, we lived across from a large park that went down to the river so I could hike in there with our dog and uh, that was a wonderful way to get away from anything that was at all stressful and just walk through there.

Later, in reference to nature, Participant 2 added, “It’s very calming. It seems to take away any anger and put you in kind of a state of grace really.”

**Subtheme II: Sense of comfort.** Three participants also referenced a sense of comfort and security provided by a relationship with the natural environment. Participant 2 commented on this comfort while recounting times when she would climb into trees as a child: “You can create and climb in something and just be part of it. It’s kind of wrapping you up.” Later, she described a “thinking tree” and noted, “I’m very thankful to have a relationship with things that, well, for one thing you talk to ’em. I have a tree I talk
to all the time.” She continued by telling a story of her daughter, who also found comfort in her thinking tree:

So uh, my daughter was funny. One day she came in when she was, I dunno, in junior high or something and she said, “Mother do something! They’re cutting down my thinking tree!” And they were building next door and I didn’t even know she had a thinking tree but it was just the right way to climb in, I, I was so tickled because at our cottage I had a thinking tree and I thought well, gosh, I wonder if all girls have thinking trees.

**Theme IV: Sources of knowledge.** The fourth theme addresses the experience of learning about environmental education across the lifespan. Two distinct subthemes were noted: lived experience and media outlets. All participants made a clear distinction that their knowledge was never acquired through formal education.

**Subtheme I: Lived experience.** All participants identified their lived experience as having the most influence on their knowledge about the natural environment. Education occurred through international travel, family, religious upbringing, or interest in literature and self-study. In discussing how she had learned about the natural environment, Participant 2 simply stated, “I would say mostly lived experience.” She later highlighted the importance of spending time in nature as a means of education, noting, “I think you have to experience it.” Similarly, Participant 1 commented, “I read a lot. National Geographic, Smithsonian.” She also mentioned her interest in travel, which supplemented her reading about the natural environment.

In all cases, participants denied ever having formal environmental education. Participant 3 noted, “That was something you learned on your own.” She then added that her primary way of learning about the environment was through reading (“I read a lot, so does my husband”) and described herself as a “self-learner.” Most succinctly, Participant 3 described her way of learning about the environment by stating, “I would say it
happened naturally in the places I lived.” This sentiment was echoed by Participant 4, who discussed the influence of geography in learning about the natural environment, stating, “Montana taught us a lot.” She then further explained her learning process:

Yeah, I mean, I think a lot of it is taught, a lot of it is taught and you watch people and in my case I have, the, I think it’s a privilege of watching people who were…careful not to waste and who believed in the power of nature over them.

Intergenerational education was another way that participants described learning through lived experience. Participants referenced two primary resources for knowledge: their parents and grandparents and their children and grandchildren. As Participant 2 stated:

I think I’ve learned a lot from my children. My son is uh, very involved…and his family and uh, so I think I’ve learned really a, the most through them. Yeah, I think I’ve really learned a lot from him. More than, um, going to a lecture or the things like that.

Participant 2 also referenced the knowledge and increased awareness she acquired through her granddaughters, whom she described as “pretty environmentally minded.” Participant 4 commented on the influence of her parents and noted that learning “was also inherent in watching.”

**Subtheme II: Media outlets.** Another source that four participants referenced for their education about the natural environment was the media, including television, radio, newsprint, magazines, and movies. Media most directly influenced the participants’ educational experiences later in life. Discussing how she had learned about the natural environment, Participant 5 stated matter-of-factly, “Well, of course TV.” Participant 3 shared that her primary means of learning about the environment was through the radio, commenting, “I just listen to National Public Radio, that’s where I get my information. They just had an article, or story, on today about the jet stream.”
As previously stated, all participants denied ever having formal education regarding the natural environment or ways to protect it. They used sources available to them (e.g., media) to supplement their lived experience and to educate themselves about the natural environment.

**Theme V: Generativity.** All participants consistently expressed their concerns for future generations and the future state of the natural environment. Specifically, they referenced current trends and behaviors that substantiate their fears for younger cohorts.

**Subtheme I: Fear for the future.** Elaborating on the broader theme of generativity, all participants noted the lack of concern for the physical destruction of the natural environment and negative environmental impacts. They also expressed worry for the future of their children, their grandchildren, and the planet. Participants referenced several components of their fears including reliance on technology, lack of awareness, abuse of resources, consumerism, and greed. Participant 2 was passionate when discussing her views on the topic:

> Well, it bothers me that people aren’t aware of their desecration or uh, and so many people aren’t and don’t realize how, don’t seem to see how little they could do to make something more beautiful or give it room to grow or – trash things, ya know, and it’s so beautiful and then to have somebody dump something, ya know, leave something untended…it bothers me.

A fear for future generations was inherent in these narrative accounts, as stated by Participant 1, “I worry about the future with the pollution in the air.” Similarly, Participant 5 shared, “It’s important for kids to realize what we have and how we can destroy it, we always talk about the glaciers going away and all of the warming, the change in the weather and all that sort of thing.”
Reliance on technology was identified by four of the participants as another factor related to their fears for the future. These participants consistently referenced the negative impacts that reliance upon technology (including cell phones, TV, and video games) had on the potential to enjoy, appreciate, and relate to the natural environment. Overall, this was interpreted as the negative effects of a culture that is consistently “plugged in,” yet disconnected. Reliance on technology was well captured by Participant 2 when discussing the value of having a relationship with the natural environment:

Kids here, it’s fun to watch them over in the park because they’re so glad to be Outside, ya know, they’re running around… but then you also see them on their cell phones and uh, it seems like, I know when kids are riding in the car and you want to show them something that you’re driving by and they’re looking at a cell phone or playing a game on something and you’re looking to see Mt. Hood over there that looks just gorgeous in the afternoon sun and “Oh yeah, uh huh” in the back ya know? So I think our society right now has become so mechanized and so self-serving that’s to keep people artificially entertained that they don’t appreciate, that you don’t need to have a game in front of you.

Similarly, Participant 5 commented on behaviors she had noticed within her family, remarking, “A lot of my kids are pushing their kids out now because it’s so easy to just sit there with those machines, but they get out and run, ride bicycles, it’s real important, too.”

Four participants explicitly stated their concerns for the future regarding a lack of awareness of negative environmental impacts—population growth being a prominent concern. They also shared concerns regarding the lack of formal education on environmental issues. As Participant 4 began to share her thoughts and concerns regarding overpopulation, she noted the following:

The gas price goes up but more than that I think space gets crowded… uh, by housing. I have wondered this year, ya know, when the news begins with an increase in housing starts… that’s our notion of what the economy is like when it’s
healthy. I don’t think that’s healthy at all…I don’t think that’s a way to start looking at your economy.

She continued by stating a commitment that she and her husband have had for years: “to reduce population growth.” Participant 2 shared similar views when discussing how she believed her relationship with the natural environment had changed over the years:

As I’ve got older as I’ve seen the…huge growth in the population and in the cities and uh, traveling around seeing all the uh, pollution in the air and uh, the cars and roads and uh, driving in Northern Michigan and seeing how much land has been used for hotels and things and then seeing empty buildings that they’re going to, are empty and yet they’re building a new one here when they could restore the one that’s there.

Similarly, Participant 3 noted, “We’re running out of space on this planet.” Later she added, “It would help if there were fewer people in the world.” Participant 1 eloquently expressed what other participants also shared throughout the interviews:

Ya know, at the time I was growing up, there was never any conversation about environment or what can it do for us or anything else or awareness of, the big picture. So I, I never had to, to have classes or anything like that. Never was particularly aware that I was any different than anybody else was about dealing with what was there.

Overall, the common thread within this fear was participants’ concern that people do not know enough about negative environmental impacts to do anything differently.

All participants referenced the many ways in which people are often oblivious to their own abuse of natural resources. Regarding her attitudes and beliefs about the natural environment, Participant 4 commented:

I love places that have been left alone. There is probably no place on earth that has truly been left alone. I mean we are, I mean we are surrounded by uh, uh, people who have corrupted the earth to see if they could find copper or silver or gold and so on and so forth.

Participant 4 offered further insight into some of the many ways in which we have historically abused our natural resources:
We didn’t, you know, we inhabited and exploited this soil. Uh, individual family farming wasn’t terribly destructive of it uh, but mining was, um, uh, the wars between the farmers and ranchers uh, uh had a lot of meaning and so on. We’ve been exploitative almost always.

In discussing trends she had observed regarding proenvironmental attitudes and behaviors, Participant 2 shared similar sentiments, noting, “And everything’s throw[n] away that it’s terribly hard on the environment.” Generalizing to others within her age-group, Participant 3 suggested another reason why younger generations abuse resources so freely, stating, “Anybody that’s my age grew up in the Depression – we don’t waste things.”

Four participants shared a sense of frustration with individuals who see everything as disposable and who neglect to consider the limits of natural resources. This further substantiated their fears for the future and was reflective of the broader theme of generativity. Several participants suggested that people are wasteful for a number of reasons, including being greedy, stylish, and pretentious. Additionally, some participants referenced having lived through tough economic times as a result of the Depression or war, which increased their awareness of the limits of natural resources. Participants noted that living during such circumstances is not an experience that younger generations have had to endure and is another potential reason why younger people tend to be wasteful.

Participant 2 stated the following discussing trends related to proenvironmental behaviors and attitudes:

I think there’s uh, there’s a feeling of you can dispose of everything because everything we have is disposable. And of course it’s gotta go somewhere in a landfill or something like that and so somehow that needs to be taught and explained and, and, uh, course that was one good thing about going through WWII when you were a teenager or preteen you didn’t have you know, you had rationing and all that stuff and that made you very aware, you didn’t need all those pairs of shoes…and you didn’t need to make all that extra fudge.
Participant 5 reflected similar thoughts regarding current consumption: “Well, in those days you had to reuse things. You couldn’t throw like we do now, ’cause you really throw away too much now.” This notion of being wasteful was reiterated by Participant 4, who stated, “You don’t get stylish and throw out the furniture that you once bought new; we live in a wasteful culture, and a pretentious culture.” Participant 3 shared a similar perspective and referenced younger generations who seemed “to have grown up having everything, in a land of plenty.”

Three participants described the powerful desire for material goods in our culture, referencing greed as another of their fears for the future. This reference was compared to necessity and economic hardship, which several participants believed curbed negative environmental impacts during their younger years. These participants frequently commented on the fact that resources were limited during their childhood and at other points in their lives. These experiences led them to be more resourceful later on and to be appreciative for what they had not what they wanted. They clarified that many things today are not “necessary.” Summarizing her thoughts at the end of the interview, Participant 4 remarked:

Ya know, waste is terrible, pretension, uh, styles are terrible…stylishness, an impetus to stylishness is something that I’ve come to intensely dislike partly because I’ve lived in places where um, people who were members of the community…people have costumes and they wear the same one all their lives.

Similarly, Participant 3 commented, “I don’t need a lot of money; I don’t need a lot of objects.” She continued by referencing the influence of marketing, which consistently created a false assumption that Americans need more:
That’s, they’re very good at it, making you think that you have to have all this stuff. We used to keep our cars until they couldn’t run anymore. We were never into needing a better looking car or keeping up with anybody else.
Discussion

The primary aim of this study was to improve understanding of environmental identity in a select sample of older adults. Additionally, a secondary goal was to increase awareness about how older adults have learned about the natural environment (i.e., environmental education) across the lifespan. I chose a qualitative approach with the hope of uncovering a rich and unique understanding of the selected individuals’ lived experiences. In the subsequent discussion, I summarize the results, compare the findings to previous literature, propose strengths and limitations of the study, and suggest areas for future research.

Review of the Results

The essence of each individual account revealed positive regard and a strong affinity for the natural environment. Similarly, results from the EID indicated high environmental identity for all participants. Overarching themes regarding environmental identity included respect for the natural environment, feeling a sense of connection to the natural environment, and noting a sense of wellbeing as a result of their relationship to the natural environment. Overarching themes for environmental education included negative environmental impacts from humans and sources of knowledge such as lived experience and the media.

In essence, the phenomenological experience of the older adults in this study regarding environmental identity and environmental education acknowledged the value of maintaining a relationship with the natural environment throughout the lifespan. At the same time, participants expressed an undeniable concern for the future of our natural
world and threats to future generations building meaningful relationships with the natural environment.

An overarching sense of generativity was noted through thematic analysis and by writing the narrative account. This focus was most evident when participants referenced individuals other than themselves in their responses to interview questions. A clear distinction between their own identities and those of others was made as participants discussed the behaviors of younger generations and the resulting negative environmental impact. As noted by McAdams, de St. Aubin and Logan (1993), generativity can be expressed by adults in a number of ways including, nurturing, teaching, and leading. Similarly, by explicitly discussing others’ identities and relationships to the natural environment, participants in the current study highlighted the importance of providing guidance and support to younger generations.

Relevant to the current study, Erickson’s psychosocial stages of development help to provide a context for better understanding influences on the attitudes and beliefs of older adults. As outlined by Erickson during late adulthood, or the ego integrity vs. despair stage, older adults often experience both positive and negative outcomes such as wisdom and regret. The preceding stage during middle adulthood occurs when generativity vs. stagnation are the predominant developmental tasks, and outcomes include both care and self-absorption (Broderick & Blewitt, 2010). Although participants in the current study fell within Erickson’s developmental stage of late adulthood, generative issues remained figural. In addition, a sense of pride and value inherent in participants’ environmental identities emerged. This sense of worth mirrors observations
during the ego integrity vs. despair stage when older adults come to terms with successes in their lives as well as missed opportunities and failures (Broderick & Blewitt, 2010).

**Comparison to Previous Literature**

As highlighted above, there is a lack of previous research specific to the topic of environmental identity and education among older adults. In one such study, Matsuba et al. (2012) explored positive relationships between identity maturity, generativity, and environmentalism. The authors noted that as individuals develop a mature identity they tend to have greater openness to concern for issues such as global warming, pollution, and so forth, which, in turn, provides motivation for proenvironmental behaviors. Similarly, participants in the present study expressed maturity in their identities, as evidenced by strong opinions, beliefs, and attitudes about the natural environment. Participants also expressed significant concerns for generative issues, such as the future of the natural environment, which Matsuba et al. noted was also related to concern for younger generations.

Harting, Kaiser, and Strumse (2007) stated that having a positive experience in nature is likely to encourage ecological behavior. These findings fit with the current results, in that all participants described positive experiences in the natural environment that, along with other influences, had contributed to their acting proenvironmentally.

The social psychological model of conservation behavior described by Clayton and Brook (2005) takes into account social norms and expectancies and suggests that people generally obtain information about how to act by observing those around them. Consistent with this model, participants in the current study often referenced
intergenerational learning as one of the ways in which they acquired environmental education and built strong relationships with the natural environment.

A final comparison to previous literature relates to themes yielded from research by Pillemer, Wagenet, Meador, & Parise, (2011). In their recommendations for further study, they discussed findings from The Aging and Environment Consensus Workshop. The authors identified examining older adults’ proenvironmental attitudes and behavior and proenvironmental behavior and volunteerism later in life as important considerations. These were addressed in part through the course of this study, which examined the proenvironmental attitudes of older adults. Proenvironmental behaviors were not explicitly assessed in the current study, though participants commented on ways in which they act resourcefully and ways that they are mindful of their negative environmental impact. Additionally, Pillemer et al. noted that understanding the causes for proenvironmental attitudes would be an important area to explore. Results from the current study may help to explain potential causes for proenvironmental attitudes, such as having a strong environmental identity and sense of generativity. Pillemer et al. also suggested that examining cohort versus age effects may be useful regarding proenvironmental attitudes and behaviors. The current study reflected a notable difference between this sample of older adults and a much younger cohort regarding degree of environmental identity, which is closely related to attitudes towards the natural environment.

**Implication of Findings**

The results of the present study indicate a strong identification with the natural environment in this sample of older adults. Participants’ strong environmental identity
was also expressed through concerns related to the future of the natural environment. Additionally, the results revealed that no formal environmental education had been afforded to participants during their lifetime. Environmental education was primarily acquired through lived experiences and the media. These means proved to be the most useful methods for the current sample; however, lived experiences above all else, were referenced by all participants as the most influential and meaningful ways that they had learned about the natural environment.

A broader implication of this study relates to younger generations. Specifically the participants spoke of increased reliance upon technology and the resulting negative impacts, which include losing touch with the natural environment and, subsequently, losing concern or compassion for it. As suggested by these results, participants implied that a weak environmental identity could mean that an individual would have less desire to change current trends in consumption and may result in harm to the natural environment.

**Strengths and Limitations of the Current Study**

One of the primary strengths of this study was the use of a qualitative approach to explore a topic that is not easily quantifiable. The construct of environmental identity has not been examined previously in older adults. While completing the EID, participants often commented on aspects of the measure that did not hold meaning for them or questions that were irrelevant, due to their age and potential physical limitations. This finding is not surprising considering that the measure was normed on a sample of university students, as mentioned by Olivos and Aragones (2011). Measuring environmental identity using only the EID would not have captured the richness of data
yielded from in-depth interviews, nor would it have painted an accurate picture of lived experience. Through IPA, a better initial understanding of environmental identity among this group of older adults has been gained.

Another strength of this research was the lack of an a priori hypothesis. By refraining from working with a hypothesis to inform the study, the data remained raw and authentic. Categories, themes, and meanings grew through the richness of responses and rhetoric, not within a predetermined frame. This approach allowed for the true essence of the individual experiences to emerge, rather than to be masked by a particular research agenda. To aid in bracketing, I kept a research journal during data collection, transcription, and analysis. I used this to reflect on the interviews, the participants, and my thought processes during transcription and analysis, and to remain aware of myself in relation to the experiences shared by participants. The research journal was another method of identifying potential personal biases and assumptions and helped in minimizing outside influences during analysis and interpretation. It also provided an additional means of connecting themes while writing the narrative. The use of bracketing, being mindful of personal beliefs, and consulting with a peer reviewer were included to reduce bias and undue influence by the primary investigator. In a sense, this level of abstraction remains as close to the source as possible.

Certain limitations became apparent during the course of data collection and analysis. One of the greatest limitations to the current study is shared with most qualitative research: These results are not necessarily generalizable to broader populations. A number of factors impact this shortcoming, including the geographical location, the use of snowball sampling, and the fact that the research is largely driven by
the participant and is somewhat unpredictable. In addition, the sample size was small and the participants were relatively heterogeneous. In particular, all participants were women, and, therefore, the results do not address the phenomenological experience of older men. Another potential limitation was in the administration of the study measures. Participants’ narrative responses may have been influenced one way or another by taking the EID prior to the semistructured interview.

Regarding geographical location, many of the participants stated they chose to live at The Springs specifically because of the suburban setting or the proximity to family. This poses the question of whether being in closer proximity to the natural environment influences individuals’ relationships with the environment or their perceived environmental identity. It may also be the case that the facility attracts people who share similar values related to the environment. Many participants also referenced Oregon as a hub for environmentally friendly people, those passionate about sustainability, and socially conscious citizens. Environmental identity and education may look different in older adults in other regions of the United States. Finally, participants were self-selected, and they may have chosen to participate in this study because of their affinity for the topic. Thus, the participants may not have been representative of other older adults either at this facility or in the broader population.

A final limitation of the current study was that environmental behaviors of the participants were not assessed. For this reason, it is not known if there is any relationship between aspects of environmental identity and education and what participants do in daily life.
**Directions for Future Research**

The findings from this study highlight several important considerations for future research. The first is the potential difference between older adults’ motivation to behave in environmentally conscious ways compared to younger generations’ motivation. This theme was noted when participants discussed the influence of the Depression and enduring times of hardship through war, which often resulted in their being mindful of resources. Participants also described their motivation for being resourceful and for conserving as related to the potential impact on the environment. Future investigators may wish to examine how we can encourage proenvironmental behaviors related to personal concern, as seen in the latter group, as cohorts change (i.e., as the older adult population begins to extend beyond those who have lived through World Wars and the Depression). One possibility could be developing opportunities for older adults to spend more time in the natural environment with the intention of improving their environmental identity. With increased environmental identity, the likelihood of engaging in proenvironmental behaviors is improved.

A second consideration is that all participants reflected that they had received no formal environmental education. Future research could be directed at developing such environmental education and outreach programs for older adults if an assessment of current proenvironmental behaviors is conducted and indicates that this may be beneficial. If this were a viable recommendation, it may require collaboration with a residential facility and potentially the city or county in order to hold a workshop or informational session regarding current best practice and information regarding recycling, sustainability efforts, and waste reduction. Formal education may not prove to be the
most effective approach with older adults, given how the participants in this study indicated they had learned about the environment; however, they may benefit from a brief, informational session. Further, the current study demonstrates that older adults have much to offer in terms of their resourcefulness and opinions on the natural environment. Researchers may wish to incorporate the valuable knowledge and opinions of older adults in the creation of education and outreach programs for adults and youth, encouraging a shift in current ways of interacting with the natural environment. This is reflective of generative concerns and wishing to provide contributions to younger generations with the hope of initiating positive changes for the future.

A final consideration for future research may include looking at cohort effects. There was a notable difference between the average item score for the current sample and the sample used by Olivos and Aragones (2011) on the EID, with the average item score for the current sample being higher than the average item score reported by Olivos and Aragones. This suggests that the current sample, and potentially older adults in general, may feel a stronger connection to the natural environment than young adults. However, the current sample was very small; in addition, adults over age 65 comprise several generational cohorts, and it is unknown what effect cohort differences might have. Future researchers may wish to explore differences in environmental identity across age cohorts and examine whether environmental identity becomes more pronounced in later life.

**Conclusion**

Older adults within this sample felt a great affinity for the natural environment. Their strong environmental identity was expressed through their respect for and connection to the natural environment and acknowledgment of the many benefits, both
emotional and psychological, to their wellbeing. Through an in-depth interview, participants revealed their lack of formal education regarding the natural environment and ways to protect it, but they shared the many proactive ways in which they increased their awareness of environmental concerns across their lifetime.

Although much of the participants’ discourse regarding environmental identity was affirming, concern for future generations and the state of the natural environment resonated within each of the accounts. The older adults in this sample highlighted negative environmental impacts, which they believed resulted from a lack of awareness or a lack of motivation to change among the larger population.

In sum, the essence of these five individuals’ lived experiences suggests that life would be simpler, the environment healthier, and everyone better off if we were to reinvest in fostering a genuine, authentic relationship with the natural environment. By increasing awareness of environmental concerns, being mindful of the positive effects of the natural environment, and taking time to “unplug” and live resourcefully, we may begin to see a shift in the way we interact with our environment.
References


Hinds, J., & Sparks, P. (2009). Investigating environmental identity, well-being and


Appendix A

Verbal Solicitation Letter

Hi, my name is Christopher Edwards and I’m a doctoral student in clinical psychology at Pacific University. I am currently in the process of finishing my degree, and as part of the last step I am conducting a study for my dissertation. In this study, I will be exploring how people form an environmental identity, how it changes over time, and how they gain information and education about the natural environment. I am specifically interested in exploring these questions with individuals aged 65-84. To gather the information I will conduct interviews that will last about an hour. In addition, participants will complete a short demographic questionnaire as well as a measure looking at environmental identity.

If you are interested in participating in this study, please meet with me briefly to see if you are eligible. If you are eligible, we will schedule a time to complete the interview and additional forms.
Appendix B

Informed Consent

INSTITUTIONAL REVIEW BOARD
FWA: 00007392 | IRB: 0004173
2043 College Way | UC Box A-133 | Forest Grove, OR 97116
P: 503-352-1478 | F: 503-352-1447 | E: irb@pacificu.edu | W: www.pacificu.edu/irb

Informed Consent

1. Study Title
   Environmental Identity & Education Among Older Adults: An Interpretative
   Phenomenological Analysis.

2. Study Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Christopher Edwards, M.S.</th>
<th>Genevieve Arnaut, Psy.D., Ph.D.</th>
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<tbody>
<tr>
<td>Role</td>
<td>Principal Investigator</td>
<td>Faculty Advisor</td>
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<td>Institution</td>
<td>Pacific University</td>
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<td>Telephone</td>
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3. Study Invitation, Purpose, Location, and Dates
   You are invited to participate in a research study about how people feel and learn
   about the environment. Your participation is completely voluntary and you can choose to
   stop participating at any time. The project has been approved by the Pacific University
   IRB and is planned to begin in August 2013 and be completed by October 2013. The
   study will take place at The Springs at Tanasbourne in Hillsboro, Oregon. The results will
   be used to help develop educational programs about the environment and to learn about
   how people view the environment.

4. Participant Characteristics and Exclusionary Criteria
   Participants will be residents of The Springs at Tanasbourne. Participants will be
   autonomous adults who live independently and who are at least 65 years old but not older
than 84 years of age. As a participant you must be able to read and write in English. You must also be able to have a conversation for at least 1 hour. During the course of data collection the principal investigator may ask you to stop participating if you are not able to complete the required forms or it becomes apparent that you may not be able to complete the interview to the full extent necessary. If you are younger than 65 years of age, are older than 84 years of age, are not able to read and write in English, or cannot complete the interview or written forms for any reason you will be excluded. You will also be excluded if you require assistance for your daily activities.

5. Study Materials and Procedures

If you choose to participate, you will complete two forms and an interview about how you think and feel about the environment. The first form will ask some questions about you. The second is called the Environmental Identity Scale. The interview will last about 1 hour. In all, you will probably spend 1½ - 2 hours completing this study. Interviews will be audio recorded and transcribed as part of the research process. This study is voluntary, so you can withdraw your participation at any time or decline to answer any question. The total number of participants expected will be 5-10.

6. Risks, Risk Reduction Steps, and Clinical Alternatives

a. Anticipated Risks and Strategies to Minimize or Avoid Risk

There are no significant risks associated with this study, and we hope that you enjoy discussing and thinking about the natural environment and your interest in environmental issues and concerns. Due to the nature of the questions being asked, there is little expectation of physical, legal, or economic risk. The chances of social and emotional risk are estimated to be minimal. However, we will look for signs of discomfort during the interview. You can choose not to answer certain questions and can decide not to continue at any time. Due to the nature of data storage there is minimal risk that anyone will learn about your confidential information. Any identifying information will be removed prior to distribution of research findings. If you choose to withdraw, you will not be compensated for your participation.

The principle investigator will minimize risk by addressing concerns, checking in with you during the interview, and reminding you of the voluntary nature of the study. You will also be encouraged to share only what you feel comfortable sharing during the interview process. If you do experience any discomfort we will provide resources to you as appropriate (e.g., mental health referrals).

To minimize risk to confidentiality, identification numbers will be assigned to you and names will not be included on the transcribed interviews. The primary investigator will be the only person who has access to the master list with both your name and identification number. No identifying information will be used in the final summary of findings. The master list will be kept in a password-encrypted file on a password-protected computer accessible to the primary investigator only. Following completion of the study and successful defense of the dissertation, the master list will be destroyed.

b. Unknown Risks

It is possible that participation in this study may expose you to currently unforeseeable risks.
c. Advantageous Clinical Alternatives
This study does not involve experimental clinical investigation.

7. Adverse Event Handling and Reporting Plan

In the event that you become sick, injured, distressed, or otherwise uncomfortable as a result of your involvement in the research study, you may stop your participation immediately. If such an event occurs, promptly notify the principal investigator or the Pacific University Institutional Review Board.

Due to the nature of this study, no adverse events are expected. In the unlikely event that one occurs the following individuals will be notified by the primary investigator at the earliest convenience or next normal business day: Pacific University Internal Review Board for Human Subjects and Genevieve Arnaut (Dissertation Chair). You will be offered an opportunity to debrief and appropriate steps will be taken to resolve the distress (e.g., mental health referral).

In the unlikely circumstance that a major adverse event occurs the IRB office will be notified within 24 hours. The primary investigator will offer you an opportunity to debrief and referrals will be provided for appropriate resources (e.g., mental health services). If limits to confidentiality are broken appropriate steps will be taken when reporting the event.

If the investigator(s) become aware of an adverse event, the IRB office will be notified by the next normal business day for minor events (emotional discomfort/distress) and within 24 hours for major events (physical injury or illness).

If you experience or are directly affected by an adverse event, you will be given the opportunity to withdraw any data collected from you during the study up to publication of the study results.

8. Direct Benefits and/or Payment to Participants

a. Benefit(s)

There is no direct benefit to you as a study participant.

b. Payment(s) or Reward(s)

You will receive a re-usable shopping bag for participation in the study and be entered into a drawing to win a $20 gift card to Whole Foods Market. If you drop out of the study, you will not receive a re-usable shopping bag or be entered into the gift card drawing.

9. Promise of Privacy

Results of this study will be kept confidential. Your interview will be digitally recorded by the primary investigator and stored in a locked briefcase. Your name will not be included in the transcribed interview. No identifying information will be used during the write-up of this study and the informed consent form will be kept separately from your demographic questionnaire and responses on the Environmental Identity Scale. At the time of your interview you will be assigned an identification number. Only the primary investigator will have access to the master list that contains both your name and
identification number. If results are published, no information that could identify you in any way will be used. All hard-copy data will be stored in a locked file. All electronic data will be stored on a password-encrypted file on a password-protected computer accessible to the primary investigator alone. Following completion of this study audio recordings will be destroyed. All other hard-copy data including transcripts, demographic forms, and the Environmental Identity questionnaires will be stored in a locked file and kept for five years following successful defense of the dissertation, at which point they will be destroyed.

There are some limits to confidentiality, which include risk of harm to yourself or others, reported abuse of a child, elderly, or disabled person, or court-ordered information. In the event that confidentiality must be broken during the course of this study, the appropriate authorities will be notified.

10. Medical Care and Compensation in the Event of Accidental Injury

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving complete mental health care as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the investigator(s), or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the investigator(s), or any organization associated with the study. If you are injured and it directly is related to your participation in this study as a research subject, please contact the Pacific University Institutional Review Board at 503-352-1478.

11. Voluntary Nature of the Study

Your decision whether or not to participate will not affect your current or future relations with Pacific University or The Springs at Tanasbourne. If you decide to participate, you are free to not answer any question or withdraw at any time without negative consequences. If you choose to stop after beginning the study, your data will not be used and will be destroyed confidentially. Additionally, you will not receive a free re-usable shopping bag or be entered into a drawing to win a $20 gift card to Whole Foods Market. If significant new findings develop (or are discovered) during the course of this research that could impact your decision to continue participation, such findings will be shared with you and you will be given the opportunity to withdraw from the study.

Upon completion of the study all interview materials will be owned by the primary investigator and stored securely for five years following successful defense of the dissertation. Audio recordings will be destroyed following completion of the study.

12. Contacts and Questions

The principal investigator will be happy to answer any questions you may have at any time during the course of the study. If you are not satisfied with the answers you receive, please call the Pacific University Institutional Review Board at 503-352-1478 to discuss your questions or concerns further. If you have questions about your rights as a research subject, or if you experience a research-related injury of any kind, please contact the investigator and/or the IRB office. All concerns and questions will be kept in confidence.
### 13. Statement of Consent

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<td>I have been offered a copy of this form to keep for my records.</td>
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<td>I voluntarily agree to participate in this study and understand that I may withdraw at any time without consequence.</td>
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<td>I give permission for the researcher to gather audio data for analysis, understanding that any published reports will not use my audio recording in any form.</td>
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*This individual must be trained in obtaining informed consent and have authorization from the principal investigator and/or faculty advisor to do so.*
Environmental Identity Scale

Using a scale of 1 (strongly disagree) to 5 (strongly agree), please rate the extent to which you agree or disagree with the following statements:

1 2 3 4 5
Strongly Disagree

1. I spend a lot of time in natural settings (woods, mountains, desert, lakes, ocean).

2. Engaging in environmental behaviors is important to me.

3. I think of myself as a part of nature, not separate from it.

4. If I had enough time or money, I would certainly devote some of it to working for environmental causes.

5. When I am upset or stressed, I can feel better by spending some time outdoors “communing with nature”.

6. Living near wildlife is important to me; I would not want to live in a city all the time.

7. I have a lot in common with environmentalists as a group.

8. I believe that some of today’s social problems could be cured by returning to a more rural lifestyle in which people live in harmony with the land.

9. I feel that I have a lot in common with other species.

10. My own interests usually seem to coincide with the position advocated by environmentalists.

11. Being a part of the ecosystem is an important part of who I am.

12. I feel that I have roots to a particular geographical location that had a significant impact on my development.

13. I feel that my own interests will sometimes be in conflict with the goal of preserving the environment.

14. Behaving responsibly toward the earth – living a sustainable lifestyle – is a part of my moral code.

15. Learning about the natural world should be an important part of every child’s upbringing.
16. In general, being part of the natural world is an important part of my self-image.

17. I don’t pay much attention to environmental issues.

18. I would rather live in a small room or house with a nice view than a bigger room or house with a view of other buildings.

19. I really enjoy camping and hiking outdoors.

20. Sometimes I feel like parts of nature – certain trees, or storms, or mountains – have a personality of their own.

21. I would feel that an important part of my life was missing if I was not able to get out and enjoy nature from time to time.

22. I take pride in the fact that I could survive outdoors on my own for a few days.

23. I have never seen a work of art that is as beautiful as a work of nature, like a sunset or a mountain range.

24. I like to garden.

25. I feel that I receive spiritual sustenance from nature.

26. I keep mementos from the outdoors in my room, like shells or rocks or feathers.

27. I don’t really care what part of the country I live in. I don’t pay much attention to my surroundings.

28. When I am in a natural setting the needs and demands of others seem to fade away and I can think about what is important to me.
Demographic Questionnaire

Age: __________________________
Gender: _________________________
Race/ethnicity: ___________________

Marital status:
- Married/partnered____
- Divorced____
- Single____
- Widow/widower____

Highest level of education:
- Less than high school____
- High school diploma or GED____
- Some college____
- Bachelor’s or Associate’s degree____
- Graduate degree____

Current annual income (estimated):
- Less than $20,000____
- Between $21,000-$49,000____
- Between $50,000-$74,000____
- Between $75,000-$99,000____
- Over $100,000____

Currently retired?
Yes ____ if yes, how long? ________
income prior to retirement (estimated)________
No ____

Number of children:
- No children____
- 1 child____
- 2 children____
- 3-4 children____
- More than 5 children____

How long have you lived in Oregon?
  a. Less than 1 year____
  b. 1-5 years____
  c. 6-10 years____
  d. 10-25 years____
e. More than 25 years