

EXPLORING THE LINK BETWEEN ENVIRONMENTAL IDENTITY, BEHAVIORS AND
DECISION MAKING

By

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ABSTRACT

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This study was conducted with undergraduate students at a large university to investigate the association between environmental identity, pro-environmental behaviors and environmental decision-making. This study explored how environmental identity as defined by Clayton (2003) influenced the type of pro-environmental behaviors individuals choose to participate in. Environmental decision-making based on Kahneman's (2003, 2011) System 1 and System 2 framework was also assessed in association with environmental identity. A survey including the Environmental Identity Survey (Clayton, 2003), the Environmentally Responsible Behaviors Index (Smith-Sebasto & D'Acosta, 1995), and a Decision Making Questionnaire were administered. After administering the surveys, eight participants were chosen for a 60-minute interview. The quantitative results of the study showed there was a significant relationship between environmental identity and participating in environmental behaviors more often. There was also a significant relation between environmental identity and making the decision to recycle in a fast and automatic way. The interview results showed that participants with both a strong and a weak environmental identity recycled often and thought it was a fast decision. The results of this study show that certain components of environmental identity are important, but other factors like the physical environment and social norms influence the thinking that goes into recycling more than environmental identity alone. This study provides evidence of the importance of social norms and environmental structures in fostering pro-environmental behaviors and influencing the type of thinking that goes into making environmental decisions.

Keywords: environmental identity, environmental behaviors, System 1, System 2,
recycling

I dedicate my dissertation to my late father, Orville Webster. He had an incredible influence on my life, especially when it came to enjoying the natural environment and caring about the world around me. I hope I can have as deep of an impact on my own son.

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CHAPTER 1—INTRODUCTION

Many studies over the years have shown that the general American population knows there are environmental problems and that individuals are concerned about the environment, especially for future generations (Dunlap & Van Liere, 1978; Kempton, Boster, & Hartley, 1996; Kempton & Holland, 2003). The major question many environmental educators and environmental psychologists are now asking is “why do so few people actually participate in environmentally responsible behaviors and make environmentally sound decisions?” This question has been researched and two common answers come out of the findings. One common theme is that people answer survey questionnaires about the environment in socially desirable ways, yet do not hold strong enough convictions to actually act consistently across contexts. Another common reason is people may hold values or worldviews that are consistent with concern for the environment, but those values are not as salient as other social values like showing up the neighbor with a new SUV or sports car. Many times, upholding a social status is much more important than dedicating time and energy to being more environmentally friendly (Kempton & Holland, 2003).

Based on these results, environmental attitudes can influence behaviors, but seem to be weak indicators of the salience of prolonged participation in pro-environmental behaviors and making pro-environmental decisions across a variety of contexts (Dunlap & Van Liere, 1978; Stern, Dietz, Kalof, & Guagnano, 1995; Stets & Biga, 2003). Attitudes and beliefs are complex constructs that can sometimes be predictors of behaviors (Kollmuss & Agyeman, 1999; Stets & Biga, 2003). According to Diekmann and Preisendoerfer (1992), the discrepancy between environmental attitudes and behavior can be explained using a low cost/high cost model. People choose pro-environmental behaviors that require the least economic and psychological (i.e. time,

effort, motivation) cost. In their study, they found that environmental attitude and pro-environmental behaviors such as recycling were significantly correlated but other pro-environmental behaviors like flying or driving less did not correlate with environmental attitudes.

Under certain conditions a strong relationship between attitudes and behavior exists (Stets & Biga, 2003). However, a major criticism of attitude/behavior research is its lack of consideration to one's sense of self and identity (Clayton, 2003; Stets & Biga, 2003). According to Stets and Burke (2002), an important assumption in research on identity is that the self is the most important motivator of any behavior (Stets & Biga, 2003). In addition, values and attitudes are a part of an individual's identity. According to Zavestoski (2003), attitudes and values are mapped onto the cognitive structure of one's self-concept, so logically identity should influence behavior. According to Stets and Biga (2003, p. 420), "identity factors improve our power to predict behavior (compared to attitudes). In a study conducted by Stets and Biga (2003), the findings showed that when controlling for environmental identity, ecological worldview attitudes had no effect on environmental behavior. Having an ecological worldview, in turn is not always associated with pro-environmental behaviors. This may be because the worldview is just a set of general beliefs not related tightly to specific behaviors (Stets & Biga, 2003). These findings help to support the use of environmental identity as a variable with important and significant implications for participation in pro-environmental behaviors and possibly environmental decision-making.

Research Questions

Studying environmental identity has promise for better understanding why individuals act in particular ways toward the environment. Little has been done to study the direct relationship

between identity and pro-environmental behaviors and in particular the link between environmental identity and environmental decision-making. This study will help to answer the following questions that will inform environmental education.

1. What is the nature of the association between environmental identity and pro-environmental behaviors?
2. How does environmental identity influence thinking about environmental decisions?

Definition of Terms

Decision-making: is one of the basic cognitive processes of human behaviors by which a preferred option or a course of actions is chosen from among a set of alternatives based on certain criteria (Wang & Ruhe, 2007, p. 73).

Environmental identity: is how one views oneself in relation to the natural world. Environmental identity is part of the way in which one forms his/her self-concept and a sense of connection to some part of the nonhuman natural environment, based on personal history, emotional attachment, and/or similarity. This connection in turn affects the ways in which one perceives and acts toward the world. In other terms, a belief that the environment is important to a person and an important part of who that person is (Clayton, 2003).

Ecological identity: refers to all the different ways one can construe oneself in the relationship to the earth and can be manifested in personality, values, actions, and sense of self (Thomashow, 1995).

Pro-environmental behaviors or Environmentally responsible behaviors: A person's behavior that are consciously chosen to minimize the negative impact of one's actions on the natural and

built world (e.g. minimize resource and energy consumption, use of non-toxic substances, reduce waste production)” (Kollmuss & Agyeman, 2002).

System 1: Fast, automatic, frequent, emotional, stereotypic, subconscious thinking (Kahneman, 2011).

System 2: Slow, effortful, infrequent, logical, calculating, conscious thinking (Kahneman, 2011).

CHAPTER 2—LITERATURE REVIEW

Environmental Identity

Identity is a difficult construct to define and has two conceptual “camps.” Identity is sometimes thought to be solely individual and it is also sometimes thought of as a social construction. Identities in essence can be broken down into personal and social identities (Gee, 2000). Many personal identities influence how others view individuals and socially imposed identities can change one’s individual self-perception (Clayton, 2003). Personal identities are based on individual traits, values and abilities. Social identities are reflected in one’s position in a social network and influence group memberships. Group identities are based on shared attributes which include physical features like skin color and internal features such as values and attitudes (Clayton, 2003). Group identities are developed through interactions with like-minded people. For example, group membership within political action groups or soccer teams can influence the group’s attitudes and values.

According to Ryan and Deci (2003), identities are acquired over time within particular social and political contexts. Society affects identity in many ways. One way in which the social context affects identity is by making certain personality or behavioral attributes more salient and giving the certain attributes more significance over others in particular contexts. This can be seen in some cultures in the way religion and gender is highlighted. Another way social context impacts identity is in the way identities can be fluid or fixed. Identities that are fluid can change depending on time and place and are much more flexible according to society’s way of thinking. Fixed identities stay stable and do not change over time. For example, identity choice in Western societies is much more fluid today than in the past. This has resulted from the greater flexibility

individuals have in deciding on geographic location, religious affiliation, political ideology, and occupational identity (Clayton, 2003).

The concept of identity within this study will follow Stryker's (1980) position that the self is situated in the context of society and identity comes from social interactions (Stets & Biga 2003). "The self reflects society, resulting in a differentiated self organized into multiple parts or identities which are enacted in local social networks" (Blatt, 2013, p. 468). In this view, an individual will assume multiple roles within a social network, which results in a variety of situational identities coming from different settings. The identities are all organized within a salience hierarchy. The identities that are high on the salience hierarchy are more likely to be enacted across contexts (Blatt, 2013). Gee (2000) views identity in a similar way stating, "all people have multiple identities connected not to their "internal states" but to their performances in society" (p. 99). For example, one individual may act and talk in a way that allows him to be a part of a street gang in one context, but in another context like school he acts like an honors student.

Identity can be further divided into how one connects with the natural environment and how this connection influences one's self-concept or sense of self. This identity is called environmental identity. It is developed through interactions with nature, membership with environmental groups, and attached to one's ideology about environmental issues like environmental education and political action for the environment (Clayton, 2003).

Environmental identity, according to Clayton (2003) is how one views oneself in relation to the natural world. Environmental identity is part of the way in which one forms his/her self-concept. It includes a sense of connection to some part of the nonhuman natural environment that is based on personal history, emotional attachment, and/or, similarity. This connection

affects the ways in which one perceives and acts toward the world and within social interactions. Ultimately, environmental identity is a belief that the environment is important to an individual and is an important part of who that person is and affects how one acts upon the world (Clayton, 2003). Identity is malleable over time, connected to practice, informed by social interactions, and can be impacted by educational experiences (Gee, 2000; Riggs Stapleton, 2015)

Environmental identity is a socially constructed self-concept that is based on the connection and interdependence with the natural world (Clayton & Opatow, 2003; Stets & Biga, 2003). Environmental identity has both social and environmental influences and it can have behavioral implications across situations and contexts (Stets & Biga, 2003). For example, a stronger environmental identity can predict pro-environmental attitudes and behaviors and is also associated with a desire for animal rights (Clayton, Fraser & Burgess, 2011). Environmental identities are inherently social because identity depends on a common social meaning and understanding of what nature is and how it is to be “revered, reviled, or utilized” (Clayton, 2003, p. 10). According to Clayton (2003), social variables actually affect how much one is able to focus on the natural environment and how one interprets what is seen. Environmental identity is also influenced by social interactions. For instance, Clayton and Opatow (2003) mention that environmental identities are influenced by social factors including group membership and other social categories such as political party, values, ideology and in turn affect activism behavior in the form of voting and other activism behaviors.

As highlighted by Clayton (2003) and Stets and Biga (2003), identity can play a greater role in influencing behavior than attitudes and worldview. In comparison to attitude theory, identity theory incorporates the social structure of behavior as well as the fact that individuals have multiple identities and roles and positions in a complex society (Stets & Biga, 2003).

According to Clayton (2003), having an environmental identity makes one more conscious of one's membership to a "collective, interdependent system, including natural ecosystems." Through this understanding, one recognizes the significance of nonhuman members of the environment and that nonhuman rights are limited and ultimately influenced by human actions and behaviors (Clayton, 2003). Clayton (2003) believes environmental identity is a motivating force for individuals to act in ways that protect the environment and in turn their identities will guide social, political, and personal behavior. According to Clayton, this is why people choose to buy an acre of rainforest or pick up trash along the roadways. When the success of a natural entity is made more "self relevant" it is worth more to an individual and worth the effort to take action (Clayton, 2003, p. 60).

Recently, studies have investigated the development and overall maintenance of environmental identities in environmental activists, students in an environmental science class, and participants in a study abroad program. To gain information about how environmental identity is developed, Kitchell, Kempton, Holland, and Tesch (2000) conducted a qualitative study with about 159 members of environmental organizations to investigate the participants' involvement in the environmental movement. Kempton and Holland (2003) developed a model for environmental identity development that included three interrelated stages (Blatt, 2013; Riggs Stapleton, 2015):

1. Salience, or awareness of environmental problems
2. Empowerment or identification as an actor in the environmental context and gaining agency in solving problems
3. Activism, or becoming more knowledgeable about how to engage in environmental action, mentorship and educating less experienced members

In the *salience* stage, an individual becomes more aware of her relationship with the natural environment, environmental issues, and how others are involved with environmental action (Riggs Stapleton, 2015). In this stage, the individual will likely view herself as harmful to the environment, yet still connected to the environment in some way (Blatt, 2013). In the *empowerment* stage of environmental identity development, the individual feels like a protector of nature as a part of the natural environment and in turn finds the agency necessary to take pro-environmental actions (Kempton & Holland, 2003; Riggs Stapleton, 2015). In the final *activism* stage, the knowledge attained through environmental action makes the individual an “expert” in doing their part to help combat environmental issues. As “experts” and knowledge agents, individuals in the activist stage take on mentorship roles. This theory was developed after analyzing the identities of individuals already participating in activist behaviors, so it’s important to use this with caution when considering undergraduate students that may or may not have strong environmental identities. However, this stage theory provides a structure to use when analyzing how environmental identity influences the types of environmental behaviors one participates in and how frequently individuals participate. In addition it may provide some insight into the connection between environmental identity and how one thinks about making decisions to participate in environmental behaviors.

Zavestoski (2003) conducted a study with participants of a deep ecology workshop in Washington. The workshop participants were at the retreat to further their connection with the environment and to be with other likeminded individuals. As part of the study, Zavestoski made observations and asked questions about participants’ self concept and ecological identity. He found that participants had a strong ecological identity and in turn valued the workshop because of the chance to spend time with other likeminded individuals and the chance to become more

connected to the environment. Zavestoski found from his interviews that participants chose careers with more of an environmental focus, many participants practiced spiritual rituals that related to their environmental concerns, and participants were also likely to seek out events and workshops that would allow them to network with similar people. Based on this analysis, Zavestoski concluded that ecological identities much like environmental identities inform the actions and decisions concerning how one conducts one's life including important life choices such as membership to particular groups, career choice, and religious choice (Zavestoski, 2003). Zavestoski's study upholds Clayton's (2003) theory of environmental identity. It shows that environmental identity is developed through direct experiences in nature and upheld while being with people who have similar identities and values toward the environment.

Pro-Environmental Behaviors

Environmental identity can help explain the environmental actions and pro-environmental behaviors individuals choose to participate in (Stets & Biga, 2003). Action, choice, and behavior are all part of one's environmental identity (Thomashow, 1995; Clayton, 2003; Blatt, 2013). Clayton (2003) claims that an environmental identity can influence the actions and behaviors one takes in the social, personal, and political spheres (Thomashow, 1995; Zavestoski, 2003; Blatt, 2013). Behaviors and identities can influence each other in a complex, dialogical manner. The relationship is reciprocal, behaviors can influence identity and identity can influence behavior (Blatt, 2013). According to Clayton (2003), an environmental identity can be nurtured and used to encourage conservation behavior when the natural objects being protected are somehow tied to the self. This influence and relationship between environmental identity and behaviors does not mean that they are linked exclusively. It does mean that one's understanding of the varying levels of salience of various identities within an individual can lead

to a firmer understanding of the actions of that individual (Burke, 1980).

Heimlich, Mony, and Yocco (2013) believe pro-environmental behaviors are directed at solving a problem and are determined by those who will carry out the behaviors. In reality, pro-environmental behaviors do not describe an exhaustive set of specific behaviors, but represent a group of behaviors that an individual thinks is environmentally friendly, even though there may be other, more sound environmental behaviors that exist (Heimlich & Harko, 1994). In the study conducted by Stets and Biga (2003) with university students in the northwest United States showed that environmental attitudes and worldview had no effect on pro-environmental behaviors while environmental identity was a significant predictor of such behaviors. Stets and Biga (2003) found that identity was a key motivator for behaviors. This may be because individuals act in a way that verifies upholds, or reciprocates their identity.

According to Stets and Biga (2003), “identity factors improve our power to predict behavior, because identity theory rests on the important sociological assumption that humans are embedded in a social structure in which behavior is chosen, not on the basis of discrete, personal decisions, but on the basis of competing demands stemming from the many positions one assumes in society” (p. 420). For instance, an individual makes a decision to buy organic foods for reasons that are tied to their positions in the world. These positions are inevitably linked to their identity and self concept. These positions could include environmental identity, socio-economic status, career, and/or social group membership. If an individual has a strong environmental identity, he or she will make decisions and behave consistently based on the tenets of his or her environmental identity across situations.

Kempton and Holland (2003) found that several types of identity are correlated with civic actions for the environment. In their study, 159 members of environmental civic groups were

interviewed to assess the correlation of identity with environmental action. Kempton and Holland were able to code 159 interviews including participants' twenty responses to the "Who am I?" question an identity instrument and interviewees' responses to the self-report of environmental actions taken. The coding analysis categorized identities into major types. Identity categories consisted of: consumer identity, activist, gardener, environmentalist, etc. Actions were coded into environmental actions such as consumer and citizen actions, Civic environmental actions (writing letters and attending meetings) correlated significantly with the identities activist, environmentalist, and membership in environmental groups. The identity of environmentalist correlated significantly with the number of group memberships one possessed. Knowing only three identities, whether a person is an environmentalist, activist, or animal lover explained 27% of the variance in the number of civic environmental actions taken (Kempton & Holland, 2003). These findings are promising in making a connection between identity and civic environmental actions and behaviors, however these data only came from individuals already invested in environmental causes and groups. In addition, these identities (i.e. environmentalist) did not correlate with the consumer actions (i.e. recycling and riding a bike). These findings may not hold up with a group of individuals with varying levels of environmental identity.

Environmental identity may predict some pro-environmental behaviors. The higher one's environmental identity the stronger likelihood of participating in particular pro-environmental behaviors. This linkage could possibly extend to behaviors that align with more complex environmental behaviors such as becoming an activist for environmental issues (Heimlich et al, 2013). Clayton (2003) found a relationship between participating in environmental behaviors and environmental identity. However, the relationship may not include all environmental behaviors. For instance, the results of the Kempton and Holland (2003) study showed that environmental

identity did not correlate with consumer behaviors like recycling.

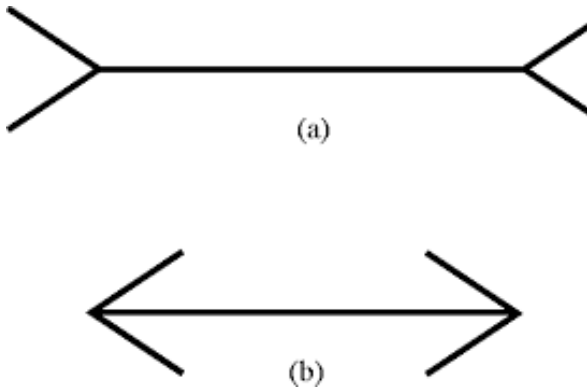
In addition to giving the Environmental Identity Scale, Clayton also gave participants a 21 item self report behavior scale in which participants indicated on a five point scale the extent they participated in certain sustainable actions such as turn lights off when leaving a room and donate money to environmental organizations (Clayton, 2003). The environmental identity scores were significantly correlated with environmental behaviors ($r = .64$).

In addition, the Kempton and Holland (2003) study conducted to better understand how people form identities that include themselves as environmental actors might provide some evidence of the correlation between environmental identity and certain environmental actions. Kempton and Holland (2003) found that there was a relationship between environmental identities and environmental actions taken. On the other hand, the results of the Kempton and Holland (2003) study showed that environmental identities such as activist and environmentalist did not correlate with consumer behaviors like recycling. This was seen in the participants' narratives, the list of actions taken, group membership, and their description of their relationship between identity and action. What is missing in the literature is the examination of the link between environmental identity and the more complex and critical pro-environmental behaviors.

System 1 and System 2 Thinking

As environmental issues become more complex and imminent, individuals will have to make more challenging environmental decisions for the sake of the Earth and for the survival of the human population. One prerequisite to making well-informed decisions is to be rational, however humans are irrational beings and make decisions in quick and biased ways that can sometimes get them into trouble (Covitt, Dauer & Anderson, in press). Decision making about complex and socially relevant environmental issues can be especially tricky.

The sense making process is very fast, intuitive and effortless. These intuitions easily occur and don't need to be questioned for accuracy or uncertainty. These seemingly clear answers are not all that clear and well defined as the one making the decisions may have thought. In fact, what one sees may not be all there is (Kahneman, 2011). In Figure 1, you see two images. One image is of an angry woman. One can sense her anger because one's System 1 automatically assessed her mood and quickly came to a premonition quickly (Evans, 2008; Kahneman, 2011). The other image has two lines. If one glances at the lines, one would say the top line is longer than the bottom line. If someone told an individual that the lines were the same length, one may not believe him. One would have to decide to slow down, take a closer look, measure the lines and realize that it is an illusion meant to tap into one's more analytical, critical thinking System 2 (Covitt et al., in press).

System 1	System 2
	

You use System 1 to be ready for what might be coming your way.

You use System 2 to determine if these lines are the same length.

Figure 1. Fast and slow thinking examples. (Images from Kahneman, 2011)

According to Kahneman (2003, 2011) and many other cognitive researchers, the way individuals make decisions and judgments can be divided into two distinct cognitive processing groups: System 1 and System 2 (Stanovich, 1999; Evans, 2008). System 1 judgments and decisions are fast, automatic, effortless, associative, implicit, and many times emotionally charged (Kahneman, 2003, 2011). Table 1 outlines the characteristics of System 1 and 2 thinking. Decisions made in System 2 are more conscious, effortful, deliberately controlled, easily flexible, and rule driven (Kahneman, 2003, 2011).

Table 1.

<i>Characteristics of System 1 and 2</i>	
System 1	System 2
Fast	Slow
Effortless	Effortful
Automatic	Conscious and Intentional
Does not affect Cognitive Load	Affects Cognitive load
Thought is Metaphorical	Thought is Analytical
Emotional	Neutral

(Evans, 2008; Kahneman, 2011)

Intuitive, System 1, fast thinking can be effortless, but can lead to faulty decisions or errors in judgment, while intuitive thinking can be accurate and powerful, but effortful and time consuming (Kahneman, 2003). System 1 and System 2 work together to inform decisions. System 1 thinking can be informed by prolonged study or conscious effort in understanding the problem at hand, in other words System 2 thinking informs System 1 making decisions and performance of skills more effortless and quick (Kahneman, 2003). Under normal circumstance, System 2 adopts the suggestions of System 1 with little to no modification. It's only when System 1 runs into difficulty that System 2 must be activated to solve a problem or make a decision. Most of what people think and do originates in System 1, but System 2 takes control when things get challenging (Kahneman, 2011). System 1 is working all the time and System 2 works when it's needed. This happens because System 1 is generally good at what it does: its models of familiar situations are accurate as are its short-term predictions. System 1 has biases too It makes systematic errors including answering easier questions than the one asked and it doesn't understand logic and statistics.

For example, when a skilled nurse intuitively detects heart problems from subtle changes

in heart rate and blood pressure. With skill also comes available access to useful quick responses. A skilled nurse does not see the same EKG reading as the novice. In the same vein, I predict a person with a strong environmental identity can access more skills and information to make more informed decisions about the environment compared to someone with a weak environmental identity. A person with a self concept that includes the natural world will likely have spent more time in nature, had more direct experiences with the natural environment and be more likely to be informed about how nature works. This in turn, will give a person with a strong environmental identity access to readily available information about what it takes to make decisions to protect the natural environment.

Based on the social perspectives of identity development in the context of education and learning, one's identity can influence the practices one participates in, how one is recognized by others and by oneself, and the actions and behaviors one decides to adhere to (Wenger, 1998; Gee, 2000; Lemke, 2000). According to this, environmental identity will likely influence decision-making. Based on the environmental crisis work done by Clayton (2003), participants with strong environmental identities also perceived their decisions on environmental crises as easier than participants with weak environmental identities. Participants with strong environmental identities were also more confident in their decisions than participants with weak environmental identities (Clayton, 2003). Clayton presented survey participants with two solutions to an environmental conflict. One solution would protect the environment and the other solution would not. Participants were asked to decide which one they preferred. The score on the Environmental Identity Scale was significantly related to individual's choices for solving an environmental crisis. Participants were also asked to rate the importance of their decision and how certain they were that they made the correct decision (Clayton, 2003). The environmental

identity score was significantly related to individuals' decisions, so the higher the environmental identity score the more likely the pro-environmental choice was chosen. In addition, the environmental identity score was also significantly related to individuals' perception of decision importance, how certain the individuals' felt about their decision, and how easy the participants felt the decision was to make (Clayton, 2003). Not much other work has been done on the connection between environmental identity and decision-making.

There has been considerable work done in behavioral economics. Behavioral economics study the effects of psychological, social, cognitive, and emotional factors on the economic decisions of individuals. One study looked at the type of thinking that goes into making decisions about retirement savings. It was found that participants that enrolled in a prescriptive savings plan called Save More Tomorrow were more likely to save more for retirement and stay in the program for a longer period of time (Thaler & Benartizi, 2004). The Save More Tomorrow program was designed to automatically increase the amount of retirement savings based on salary raises. This mechanism of the program limited the amount of self-control needed to save for the future making it easier for families to save in response to the amount of money they make without finding other places to put their money. This plan also worked because once the participants were enrolled they were unlikely to un-enroll (Thaler & Benartizi, 2004). In this study, retirement saving behaviors changed by implementing particular structures in their daily lives that made it easier to save enough to retire on time. It is possible that particular environmental behaviors can also change by making it easier to act in those responsible ways. This may include changing the physical environment to make it easier to make pro-environmental choices.

When thinking about how environmental identity influences decision-making, I cannot

help but think that identifying with the natural world would make one more likely to make environmentally sound decisions about environmental issues and participating in environmental behaviors. However, would an individual with a strong environmental identity rely on slow and deliberate thought or System 2 thinking to make decisions about the environment or do they rely on their fast more intuitive thought? I also wonder if identity will make a difference in all environmental behaviors or if some low cost environmental behaviors will be influenced by other factors. Within this study, I will assess how environmental identity as outlined by Clayton (2003) affects the way individuals think about making environmentally responsible decisions.

Research Questions

In this study the direct relationship between identity and participation in pro-environmental behaviors and the type of thinking that goes into acting in environmentally responsible ways will be examined using a mixed methods approach. Table 2 highlights the questions and the data that will help to answer the questions.

Table 2.

<i>Research questions and corresponding data sources</i>	
Research Questions	Data Sources
<i>What is the nature of the association between environmental identity and pro-environmental behavior?</i>	Environmental Identity Survey Environmentally Responsible Behavior Index Interview data
<i>How does environmental identity influence the type of thinking that goes into making environmental decisions?</i>	Environmental Identity Survey Decision Making

Table 2 (Cont'd)

Questionnaire

Interview data

CHAPTER 3—METHODOLOGY

This mixed methods study was organized to answer two research questions outlined in Chapter 1. This chapter describes the participants involved in the study, the survey instruments used, the interview protocol, and the data analysis procedures implemented during the research process.

Participants

During the 2014 fall semester, 299 undergraduate students completed a three-part survey at a large Midwestern University. Of the 299, 237 participants were enrolled in an introductory educational psychology course called Reflections on Learning. The other 62 participants were enrolled in an Introduction to Sustainability course. In order to see variation across dimensions, two fairly different groups of undergraduate students were assessed. Many of the students enrolled in the educational psychology course were planning to become teachers and work with children in some capacity. The students enrolled in the sustainability course were planning to work in natural resources, urban planning, agriculture, business, and/or other sustainability related fields. These groups were selected because of their selected academic major choice and their potential for providing the desired variability to the overall sample. In addition to their accessibility, undergraduate students were selected for their potential future contributions to important environmental decisions. These students represent the future leaders and opinion makers in society and will make decisions in regard to the use and management of natural resources, outdoor spaces, and will decide how to mitigate climate change (Smith-Sebasto & D'Acosta, 1995; Ewert, Place, & Sibthorp, 2005).

Procedure

This was a mixed methods study with a sequential explanatory design (Lodico, Spaulding, & Voegtler, 2006; Creswell, 2006). The quantitative data was collected first and the qualitative data was collected afterwards to provide additional information to more fully explain and interpret the quantitative results. This methodology was chosen in order to provide more information in addition to the survey data. For instance, the interviews allowed me to examine how specific experiences and social interactions influenced participation in specific behaviors. In addition, I was able to explore what behaviors participants did quickly and what behaviors were done slowly. I was also able to ask why these behaviors were easy or difficult to participate in. The previous research done exploring environmental identity has been solely quantitative or qualitative, so there was an opportunity to try a new a mixed methods approach to make sense of the relationships between environmental identity, participating in pro-environmental behaviors and making decisions to recycle. Mixed methods analysis allowed for a deeper understanding of the constructs being studied, in this case, environmental identity, decision-making and participating in environmental behaviors. Using both quantitative and qualitative methods provided an in-depth look into context and relationships while also providing measurements of attitudes and other measureable constructs like identity (Lodico et al., 2006).

The quantitative phase began in the fall of 2014 during October and November. I visited all sections of Reflections on Learning and Introduction to Sustainability courses. With permission from the course instructors, I was given thirty minutes to describe the study, get signed consent from students, and administer the survey. The description of the study included the terms of participation and the incentives and possible drawbacks to being a part of the study. The consent forms asked for participants' full name, their campus email address, gender, a

description of where they grew up, their academic major, their age, and academic standing. Participants were informed they would be entered into a drawing for the chance to win one of two \$50 Amazon gift cards for completing the entire survey. Once students signed the consent form, they were given a paper survey that contained the three surveys (Environmental Identity Survey, Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire). Once the surveys were handed out, I instructed the participants to raise their hand if they had any questions or did not understand any part of the survey. Participants were then instructed to raise their hand when they had completed the survey and their instructor or I would collect the completed surveys.

In November, the survey responses were entered into Statistical Package for Social Sciences SPSS. The data was analyzed using correlation analysis, factor analysis, ANOVA and the descriptive statistics. On completion of the quantitative data analysis, a sample of participants were selected for an interview based on their scores on the Environmental Identity Scale, Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire surveys. Participants were informed via email that if they participated in a 45-60 minute interview they would earn \$10 and be entered into a raffle to win a \$50 Amazon gift card.

In the qualitative phase, the interviews were conducted with eight different participants. The participants were chosen based on their overall survey scores. In order to explore the relationships between environmental identity, participating in pro-environmental behaviors and making decisions about recycling, participants with scores that upheld the relationship were chosen for interviews. Participants were also chosen because their scores did not uphold the relationship shown in the quantitative data. Table 3 shows the interview participants' survey scores.

Table 3.

Interview participants' pseudonyms and survey scores

Pseudonym	Identity Score	Behaviors Score	Decision Making Score
Kim	32	36	15
Molly	117	125	30
Ryan	115	111	28
Ansel	56	80	22
Savannah	96	97	30
Renee	113	74	30
Olivia	118	116	26
Katie	86	36	22

Table 4 outlines the interview participants' demographic information.

Table 4.

Interview participants' demographic information

Pseudonym	Age	Academic Standing	Major	Childhood Home
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Table 4 (Cont'd)					
Kim	22	Senior	Psychology	Rural not a farm	
Molly	21	Junior	Environmental Studies and Food Science	Town less than 10,000	
Ryan	18	Freshman	Fisheries and Wildlife	City of 10,000 to 49,999	
Ansel	19	Sophomore	Elementary Education/Child Development	Did not answer	
Savannah	20	Sophomore	Elementary Education	Town less than 10,000	
Renee	20	Junior	Secondary Education/Science	City of 10,000 to 49,999	
Olivia	20	Sophomore	Environmental Studies and Sustainability/ Food Systems	Town less than 10,000	
Katie	18	Freshman	Secondary Education/History	Rural area on a farm	

Instruments

The survey used for this study (Appendix A) was comprised of questions examining demographical data, environmental identity, participation in environmentally responsible behaviors, and environmental decision-making about recycling.

Environmental Identity Scale

The Environmental Identity Scale was developed in order to examine whether individual differences in environmental identity can predict behavior. The scale was constructed to assess

the extent to which the natural environment plays an important role in a person's self-definition (Olivos & Aragonés, 2011; Clayton, 2003). The scale was composed of 24-5-point Likert scale items that measure six constructs. These constructs included: interactions with nature, group membership, ideology, values and priorities, positive emotions and experiences in nature and self-concept. The extent and importance or salience of an individual's interactions with nature was measured using items that asked participants to rate their time spent outdoors. An example item included: I spend a lot of time in natural settings. Asking how nature contributed to a participant's involvement in groups assessed group membership. For example: My own interests usually seem to coincide with the position advocated by environmentalists. Measuring the amount of support respondents gave to environmental education and a sustainable lifestyle assessed ideology. For example: Behaving responsibly toward the Earth—living a sustainable lifestyle—is part of my moral code. Positive emotions and experiences in nature were also assessed. Values and priorities were measured by asking participants to think about how they do or would live their lives. An example item included: 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. An autobiographical component was based on the positive memories and emotions participants experienced while interacting with nature. An example: I feel that I have roots to a particular geographic location that had a significant impact on my development. Self concept was measured by asking participants to rank their feeling of connection with the natural world. For example: I think of myself as a part of nature not separate from it.

In previous studies conducted with the Environmental Identity Scale, the internal reliability was good. The overall Cronbach's Alpha for the scale was .90 or above. For this study, the Cronbach's Alpha for the individual subscales was also measured. See Table 5 for the item

numbers for each construct and the Cronbach's Alpha values. For the full survey, see Appendix A.

Table 5.

<i>Environmental identity scale constructs and the Cronbach's alpha</i>		
Construct/Subscale	Cronbach's Alpha	Survey Items
Interactions with nature	.766	1, 16, 17, 21, 23
Group Membership	.814	7, 10
Ideology	.704	4, 8, 12, 13
Positive Emotions and Experiences in Nature	.662	5, 20, 22, 24
Self-Concept	.838	3, 9, 11, 14, 18, 19
Values and Priorities	.685	2, 6, 15

The Environmental Identity Scale was not the only scale that measured the relationship between one's self-concept with nature (Olivos & Aragonés, 2011). The Inclusion of Nature in Self (INS) Scale was composed of one item, which used a Venn diagram to represent the relationship between the self and nature (Schultz, 2001). Later on, the Connectedness to Nature Scale (CNS) was designed to add an emotional component to help to maintain the affective individual experience while connecting with nature (Mayer & Frantz, 2004). The Environmental Identity Scale was chosen for this study because of its internal reliability. In an attempt to measure the construct and convergent validity for the scale, 282 University students were asked to complete the Environmental Identity Scale along with the Connectedness to Nature Scale (CNS), the Inclusion of Nature in Self (INS) scale, Ecobiocentrism and self reporting of pro-environmental behaviors questionnaire (Olivos & Aragonés, 2011). The empirical evidence

provided by this study showed that the content elements underlying the Environmental Identity Scale related with social identity, an emotional association with nature, a positive disposition towards policies that protect nature, and interactions with the natural world (Olivos & Aragonés, 2011). The Environmental Identity Scale was the scale with strongest construct validity.

According to Olivos & Aragonés (2011),

“[The Environmental Identity Scale] is a scale that reflects a complex concept defined by Clayton in which an important role is played by feelings of belonging to the natural world, the pleasure or benefit gained by individuals through contact with nature, appreciation of unique and complex qualities of the natural environment, and commitment to the environment expressed through engagement in pro-environmental behaviors, and an ideological commitment or an identification with ecologists”

(Olivos & Aragonés, 2011, p. 72).

Environmentally Responsible Behaviors Index

The Environmentally Responsible Behaviors Index was developed by Smith-Sebasto and D’Acosta (1995) to predict environmentally responsible behavior among undergraduate students. According to Thapa (1999), the items came from the Behavior Inventory of Environmental Action and from the Roper Organization, and from “A User’s Guide to Planet Earth: The American Environment Test” designed by Rush/Winston Productions and the U.S. Environmental Protection Agency. The index contained twenty-five 5-point Likert-scale items presented as examples of pro-environment behaviors with a response format scale (from 1 = rarely to 5 = usually). As a guideline, rarely is “in less than 10% of the chances when I could have”; occasionally is in 30% of the chance; sometimes is 50% of the chances; frequently is 70%; and usually is 90% (Smith-Sebasto & D’Acosta, 1995; Thapa, 1999). ERBI consisted of

different types of environment-related behaviors. The scale was uni-dimensional in its intention to measure self-report of performance of environmentally responsible behaviors (Thapa, 1999). The index was designed to also reference the categories of environmentally responsible behaviors including: civic action (three items), education action (five items), financial action (seven items), legal action (two items), persuasion action (one item), and physical action (six items). After conducting a factor analysis, these behaviors fell under four main themes—consumerism, activism, education, and recycling (Thapa, 1999). Scores ranged from 25, representing a self-report of rarely performing the environmentally responsible behaviors, to 125, showing a self-report of usually performing the environmentally responsible behaviors (Smith-Sebasto & D’Acosta, 1995).

This scale was chosen because of its previous use with undergraduate populations (Lee, 2012), its internal reliability, and the straightforward nature of the survey items. This survey also had a Cronbach’s Alpha with a range of .83-.90 for the four constructs (Thapa, 1999). After administering the survey in this study, the Cronbach’s Alpha was analyzed for each of the four main constructs: consumerism, activism, education, and recycling. Table 6. shows the results of this analysis.

Table 6.

<i>Environmentally responsible behaviors index constructs and the Cronbach’s alpha</i>		
Construct	Cronbach’s Alpha	Items
Consumerism	.904	25-33, 50
Activism	.810	34-40, 49
Education	.915	41-45
Recycling	.827	46-48

Decision Making Questionnaire

This questionnaire was created using Kahneman's (2003, 2011) System 1 and System 2 thinking framework. Kahneman's framework was used to examine how participants made environmental decisions about recycling, a common environmental decision made by most undergraduates. All of the questions were asked in the context of recycling behavior. The questionnaire consisted of 6, 5-point Likert scale statements based on the characteristics of System 1 and System 2 thinking. A response of a 1 was considered System 2 thinking and a response of 5 was considered fast thinking. Each item asked participants about a different component/characteristic of System 1 and System 2 thinking. These constructs were slow/fast, effortful/effortless, affecting thinking capacity/not affecting thinking capacity, neutral/emotional, conscious/automatic, and skeptical/certain. For example, participants were told to: Use a scale of 1 to 5, to rate the degree to which participants fall along the continuum between very slow (1) and very fast (5) decision-making when deciding to recycle. Participants were reminded that one answer was no better than the other. A description of each characteristic was described thoroughly like the characteristics of slow and fast outlined below. The other characteristic descriptions can be found in the full survey in Appendix A.

Slow: If you slowly come to the decision to recycle, you are actively making that decision. The decision is not automatic and takes several steps to come to the final decision to recycle. You seek out information about recycling before determining it's the best option for you.

Fast: If you quickly come to the decision to recycle, you don't have to actively think about recycling. You don't seek out information about recycling you just recycle.

Factor analysis (Figure 2) was conducted to test how many factors were addressed in the questionnaire. The factor analysis showed that one factor explained 47.57% of the variance. The Cronbach's Alpha of the scale was .77.

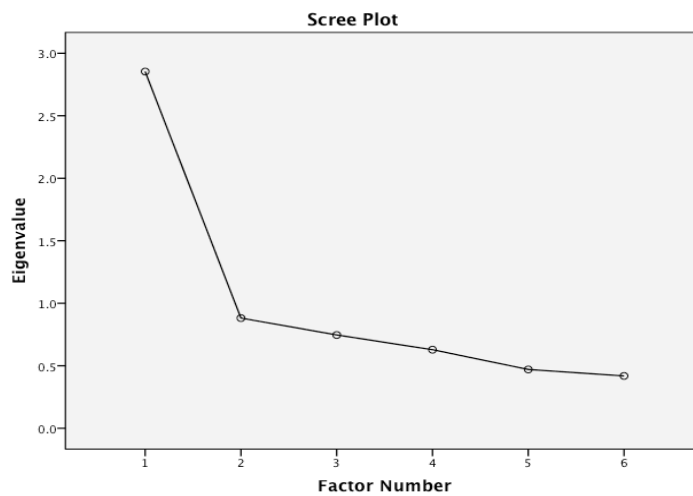


Figure 2. Factor analysis scree plot for the Decision Making Questionnaire

Table 7.

Survey instrument descriptions and definitions

Survey Instrument	Definition	Sample Items	Constructs Measured
Environmental Identity Scale (EID) (Clayton, 2003)	How one views oneself in relation to the natural world.	I spend a lot of time in natural settings.	Ideology
		I think of myself as a part of nature, not separate from it.	Values and priorities
	Environmental identity is part of the way in which one forms his/her self-concept and a sense of connection to some part of the nonhuman natural environment, based on history, emotional attachment, and/or similarity. This connection in turn affects the ways in which one perceives and acts	Behaving responsibly toward the Earth—living a sustainable lifestyle—is part of my moral code.	Positive emotions and experiences toward natural environment
		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.	Group membership
		I spent a lot of my childhood playing outside.	Interaction with nature
			Self concept

Table 7 (Cont'd)	toward the world. In other terms, a belief that the environment is important to a person and an important part of who that person is. (Clayton, 2003).		
Environmentally Responsible Behavior Index (ERBI) (Smith-Sebasto and D'Acosta, 1995)	A person's "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world (e.g. minimize resource and energy consumption, use of non-toxic substances, reduce waste production)" (Kollmuss & Agyeman, 2002, p. 240).	Read labels on products to see if the contents were environmentally safe Avoided buying products in aerosol containers Purchased a product because it was packaged in reusable or recyclable containers	Consumerism Activism Education Recycling
Decision Making Questionnaire	"Decision making is one of the basic cognitive processes of human behaviors by which a preferred option or a course of actions is chosen from among a set of alternatives based on certain criteria" (Wang & Ruhe, 2007, p. 73).	To what degree is your decision-making about recycling done slow or fast? Slow: If you slowly come to the decision to recycle, you are actively making that decision. The decision is not automatic and takes several steps to come to the final decision to recycle. You seek out information about recycling before determining it's the best option for you.	Slow/Fast Thinking

Table 7 (Cont'd)

Fast: If you quickly come to the decision to recycle, you don't have to actively think about recycling. You don't seek out information about recycling you just recycle.

Quantitative Data Analysis

Survey results were entered into the Statistical Package for Social Sciences (SPSS), and analyzed using factor analysis, correlation analysis, and analysis of variance (ANOVA).

Correlation analysis was employed to assess the relationships between the independent variables and the dependent variables. In this study, the independent variable was environmental identity and dependent variable was environmentally responsible behaviors and System 1 and System 2 thinking. Correlation analysis was chosen as the most appropriate option because it can determine whether a set of independent variables can explain a considerable amount of the variation in the dependent variable (Agresti & Finlay, 2009; Field, 2009).

A scale was developed to measure System 1 and System 2 thinking when deciding to recycle. The Decision Making Questionnaire scale was composed of six items. I conducted a confirmatory factor analysis to determine if in fact only one factor was measured by the survey. A factor analysis was done, in order to understand the degree to which the six items tapped into the same construct. When considering the validity of a scale, it's important to determine how the items hang together on one construct. One way researchers determine this is by doing a factor analysis to examine psychometric validity (Brown, 2015). The factor analysis reduces the data into a smaller, more easy to use factors or data clusters (Field, 2009). In short, factor analysis

can lessen a group of interrelated items within a survey into a smaller set of factors that may be able to explain the maximum amount of common variance. The Environmentally Identity Scale and the Environmentally Responsible Behaviors Index already had a factor analysis conducted, so I did not conduct another factor analysis (Clayton, 2003).

An ANOVA was conducted to compare the mean scores between the Education and Sustainability participants. An ANOVA was chosen instead of the independent t-test to reduce the amount of Type I error. The mean scores of the overall Environmental Identity Scale, Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire were compared. In addition, the subscales within the overall scales were compared across groups. For instance, as outlined in Table 5 the subscales of the Environmental Identity Scale were ideology, values and priorities, positive emotions and experiences toward natural environment, group membership, interaction with nature, and self-concept. For the Environmentally Responsible Behaviors Index the subscales measured the constructs: consumerism, recycling, activism, and education. Each question of the Decision Making Questionnaire was considered a different construct of System 1 and System 2 thinking and in turn the means of each question was compared separately. The constructs included slow/fast, effortful/effortless, affecting thinking capacity/not affecting thinking capacity, neutral/emotional, conscious/automatic, and skeptical/certain. The mean scores for all of the subscales just mentioned were also compared across groups.

To ensure the ANOVA results were accurate, the Levene's test was also conducted to test the assumption of homogeneity of variance. The null hypothesis was that the variances in the groups were equal. The Levene's test was done by first doing a one-way ANOVA on the absolute difference between the scores and the mean of the group from which it came (Field,

2009). The Levene's test was significant at $p > .05$. If p was less than or equal to $.05$ then it can be concluded that the null hypothesis was incorrect and the variances were significantly different from each other. Meaning the homogeneity of variances had been violated (Field, 2009). If the p was greater than $.05$, then the variances of each group were about the same and not significantly different from each other (Field, 2009). If the homogeneity of variances was violated then a non-parametric test like the Mann-Whitney test must be conducted. Non-parametric tests have fewer assumptions and can provide accurate results for data that do not meet the statistical assumptions (Field, 2009). In addition, for the data that did not uphold the assumptions of homogeneity of variance, the non-parametric Mann-Whitney test was conducted. These tests rank the data by score. For instance, the lowest score gets a rank of 1 and the next highest score gets a rank of 2 and so on (Field, 2009). The analysis is then conducted on the ranks, not on the actual data. The Mann-Whitney test was used on the scores where the Levene's test was significant to measure the medians instead of the means.

In addition to the ANOVA, the Cohen's d was measured. Cohen's d is the difference between the means, $M1 - M2$, divided by standard deviation, s , of either group. Cohen argued that the standard deviation of either group could be used when the variances of the two groups are homogeneous. Cohen (1988) defined effect sizes as "small, $d = .2$," "medium, $d = .5$," and "large, $d = .8$ ". Effect sizes are thought of in terms of the percent of non-overlap of the mean scores of two groups (Cohen, 1988). An effect size of 0.0 indicates that the distribution of scores for one group overlaps completely with the distribution of scores of another group, there is 0% of non-overlap. An effect size of 0.8 indicates a non-overlap of 47.4% in the two distributions. A large effect size of 1.7 indicates a non-overlap of 75.4% in the two distributions. Meaning that the distribution of scores between the two groups is mostly different from each other with only a

small percentage (24.6%) of the two score distributions overlap. Effect size is measured using the mean scores for each group and dividing the score with the pooled standard deviation. The effect size provides additional information about the relationship between two groups. If the effect size is 0.2 or larger then the relationship is significant meaning there is a legitimate, non-trivial connection between the two groups being measured.

Table 8.

<i>Data analysis and reasons for conducting analysis</i>	
Kind of Data Analysis	Relation to the research questions
Correlation	Correlation analysis was done to measure the relationship between the environmental identity and pro-environmental behaviors and making decisions to recycle.
ANOVA	ANOVA was conducted to compare the means between the Education and Sustainability groups. The ANOVA was done to measure the difference between the mean scores for the overall scales as well as the means for the subscales with in the instruments.
Levene's test	Tests the hypothesis that the variances of different groups are equal. According to Field (2009), the test does a one-way ANOVA on the deviations. A significant result shows that the variances are significantly different meaning the variances are not homogenous. This test allows me to compare both groups of data (Education and Sustainability) to check to see if the distributions are the similar.
Mann-Whitney test	A non-parametric test that looks for differences between two independent groups. It tests whether the two groups have similar variances. This tests helps to make more informed and statistically sound assumptions about my data.
Factor Analysis	Factor analysis was done to group multiple related items into fewer variables (factors) that

Table 8 (Cont'd)

share a single concept or dimension. This will be done for the Decision Making Questionnaire. The constructed factors from the factor analysis will then be included into the regression for prediction analysis.

Interview Protocol

The interview protocol was created to help understand the underlying relationship between environmental identity, frequency of participation in pro-environmental behaviors and decision-making about environmental issues. The interview protocol contained 26 questions including three card sort activities.

The interview protocol was developed using the Environmental Identity Survey, the Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire. The goal of interviewing participants was to better understand the role environmental identity plays in the participation of pro-environmental behaviors and to better understand the relationship between environmental identity and making environmental decisions. To assess environmental identity, the participants were asked to verbalize and write down the answer to the question “Who am I?” with five to ten different descriptors. Next the participants were asked to list the environmental actions they take in their lives. In addition, they were asked to rank the actions with 1 having the most positive environmental impact. In addition to these questions, participants were then asked to describe the frequency and nature of their childhood and current interactions with the natural environment. Participants then participated in a card sort activity where they rated a set of behaviors taken from the Environmental Responsible Behaviors Index including two to three behaviors from each factor or construct assessed in the scale (recycling, activism, consumerism, and education) on a 1-5 scale assessing the frequency in which

participants participated in the behaviors. They were also asked to include other environmental behaviors that did not appear on the cards. See Appendix B for the interview protocol.

Participants were then asked which behaviors they would like to participate in more frequently and what barriers caused them to not participate as frequently. Next, students were asked how social interactions impacted their participation in environmental behaviors. Participants were then asked to describe a time in which they influenced someone's actions and when the participant influences the actions of another.

The second goal of the interview was to better understand the relationship between environmental identity and making environmental decisions in a slow or fast way (Kahneman, 2003). To do this, participants took part in another card sort using the behaviors outlined in the previous paragraph. In the card sort activity, participants were asked to put the behavior cards in two piles, a pile in which they made the decisions in a slow, intentional way and another pile in which they made the decisions in fast, automatic way. While placing the cards in piles, they were asked to explain their decisions in more depth. Participants were then asked to discuss a behavior that was in the slow pile that was once in the fast pile. Then they were asked to describe how their shift in thinking happened. Participants were also asked to discuss a behavior they placed in the fast pile that was once in the slow pile. They were then asked to describe their shift in thinking. Students were then asked specifically how their identity affected their decisions. In the third card sort activity, students were asked to divide the behavior cards into three categories: those that were critically important for the future of the Earth, those that were moderately important for the future of the Earth, and those that were least important for the future of the Earth. After they sorted the behaviors, they were asked about the reasoning behind the placement of behaviors and if the placement of the behaviors was easy or hard and what else

they would need to know to make a better decision. Lastly, participants were asked which of the three locations would they decide to live: (a) a small apartment in the city, (b) a small house in the city, or (c) a small house in the country. They were then asked: “Were you able to make this decision in a slow or fast way.” “What else would they need to know to make the decision?” How does your identity come into play when making that decision?”

Qualitative Data Analysis

A thematic analysis was conducted to find patterns within the interview data. First, the transcribed interviews were transferred to a Google Spreadsheet. Each interview was given its own tab. Most of the analysis was done within the Google Spreadsheet. The Google Spreadsheet was organized with a tab for each interview participant name. Within each tab, the interview transcript was in the first column, the second column was used for initial ideas and notes. The third column had the environmental identity constructs. The constructs coded for environmental identity were: Ideology/values/priorities, positive emotions and experience in the natural environment, group membership/family/social interactions, and self-concept (Clayton, 2003). The fourth column included the environmental behavior constructs of consumerism, recycling, activism and education. The fifth column was labeled System 1 and System 2.

Qualitative data analysis began by reading through the interviews line by line. During the first read through, my initial thoughts and ideas were noted in the Google Spreadsheet. Next, the interviews were read through again with a focus on the environmental identity constructs. Quotes and passages were noted as examples of the particular constructs. Next, the interviews were read noting the frequency in which the participants reported participating in the environmental behaviors in the card sort activity. These constructs included: recycling, education, activism, and consumerism. The frequencies were recoded on a tab that included each

interview participants' name and the behaviors in the card sort. Next, the interviews were coded using the System 1 and System 2 thinking characteristics. The codes for System 1 thinking included references to fast, quick thinking and automatic, habitual thinking. In addition, references to emotions were coded. The codes for System 2 thinking included references to slow thinking and doing research to find out more and effort.

After the initial read through was complete, two tabs were created to hold the quotes that I thought answered the two research questions. The quotes that helped to answer the research questions were copied verbatim with the name of the participant into another spreadsheet. My initial rationale for choosing the quote to answer the research was also noted. In addition, other spreadsheets were also created to record student responses from the card sort activity. The frequency of participation (1-infrequently and 5-frequently) students reported in the environmental behaviors was recorded. The responses to the question: Do you decide to participate in the environmental behaviors in a fast or slow way? This question was also noted in a different tab/spreadsheet. The responses to the question: How critical is participating in the environmental behaviors? card sort were also recorded in a separate tab/spreadsheet. After the tallying and recording of the data pieces were completed the themes with the most data were further elaborated upon. The codes and examples are noted in Table 9. These themes are further outlined in the qualitative results section.

Table 9.

Description of codes and themes

Code/Theme	Key terms	Example
Group Membership/Community Involvement	Family, roommate, organization, political party, religion	SAVANNAH: Well, being a part of girl scouts we did a lot of environmental activities. Like we had created a garden

Table 9 (Cont'd)		when I was I think like in seventh grade and it was already created but it was just completely run down like trash everywhere And we were growing plants and vegetables to give out. So that kind of ... being a part of that contributed to me helping the environment.
Values	Reference to what participant feels is right Direct reference to values It's the right thing to do	RYAN: Well, I think being a conservationist impacts it the most impacts the environmental actions the most probably just because, you know, I don't know I was always just brought up, you know, if you see something on the ground you pick it up even if it's not yours if you didn't make the mess, you know, leave it better than you found it.
Educating: Teacher or Learner	Reference to teaching others, showing others. making others aware of issues Reference to influence from others	SAVANNAH: I'm a college student so like when I feel like it's my responsibility as a student and as a future educator to teach others about like [the environment]. I taught younger children about how to recycle and how they themselves can do, you know, even being five they can take steps to help the environment.
System 1	Reference to fast thinking, habits, automatic actions	MOLLY: I get really, really, I wouldn't say angry, but I get very worked up when I see people throw away plastic. My favorite is when I see people throw away a plastic water bottle when there is a recycling receptacle within arm's reach. [0:17:06] It just, it doesn't make sense. It makes me get really worked up. And so when I talk to people I try and stay calm but it's hard to talk to people about something that you care so deeply about and have them not care. Especially when you know it affects them. But as for how my identity's shaped it. I feel like it just, I'm really passionate about it.
System 2	Reference to slow, deliberate, conscious, effortful decisions, research	OLIVIA: Read labels on products to see if the contents are environmentally safe that would be slow just because ... I mean I try to but it's becoming more of a thing now and

Table 9 (Cont'd)

so it does take a little bit of extra time just to do it and I'm still learning about it and so sometimes like, you know, like bananas for example like you can only get one kind of banana and so you can't like compare between two different brands.

CHAPTER 4—RESULTS

Quantitative Results

In this mixed methods study, the quantitative results were collected and analyzed first, then participants were chosen for an interview based on their responses on the surveys. The quantitative results were analyzed using SPSS. The results section was organized with the description of the quantitative results in the first section and the qualitative results following. The qualitative results included the themes gleaned from the interviews conducted with a select group of eight participants.

Demographics of Study Participants

Of the 299 participants, 237 were enrolled in Teacher Education (TE) 150 Reflections on Learning course and 62 were enrolled in Sustainability (SUS) 200 Introduction to Sustainability course. In the rest of the results section TE 150 will be Education participants and SUS 200 will be named Sustainability participants. Over half of the participants (68%) were of freshman or sophomore status. See Table 10 for additional academic status information. Most participants were between the ages of 18-23 (96%).

Table 10.

Academic standing of all participants

Academic Status	Frequency	%
Freshman	90	30
Sophomore	113	38
Junior	60	20
Senior	23	8
Senior plus	9	3
Total	295	99
Missing	4	1
Total	299	100.0

One hundred ninety five participants were female, 103 were male, and one person did not share a gender. Table 11 shows the full description of these data.

Table 11.

<i>Participant gender</i>		
Gender	Frequency	%
Female	195	65
Male	103	34
No Share	1	.3
Total	299	100

Participants were also asked to share where they spent the majority of their childhood. The locations were denoted by the population size and if the location was rural, suburban, or urban. The sample included participants who grew up in all six locations, see Table 12. A little over a third of the participants (39%) or 113 participants reported growing up in a city of 10,000 to 49,999 people. I hypothesized there would be a relationship between environmental identity and where the participants grew up. There was no significant difference between where participants grew up and their environmental identity score.

Table 12.

<i>Childhood home location of all participants</i>		
Childhood Home	Frequency	%
Rural area on a farm	8	3
Rural area but not a farm	27	9
Town less than 10,000	54	19
City of 10,000 to 49,999	113	39
City of 50,000 to 100,000	57	20
City larger than 100,000	32	11
Total	291	100

Table 13 outlines the Colleges represented in the sample. About a third of the participants

had a major in the College of Education (31%). The next most frequent College represented was the College of Agriculture and Natural Resources (12%), followed by the College of Social Science (11%).

Table 13.

Academic major breakdown denoted by College

College	Frequency	%
Education	92	31
Agriculture and Natural Resources	37	12
Social Science	33	11
Undecided	25	8
Business	23	8
Natural Sciences	20	7
Arts and Letters	17	6
Music	16	5
Engineering	14	5
Human Development and Family Studies	8	3
Communication Arts and Sciences	5	2
Unknown	3	1
Arts and Humanities	2	.7
Nursing	2	.7
Missing	1	.3
Total	299	100

Descriptive statistics for the Environmental Identity Scale, Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire results for entire sample

A total of 283 participants completed the Environmental Identity Scale (EID). The total environmental identity scores were the sum of all of the answers on the twenty-four item, 5-point Likert scale survey. The highest score possible was 120 and the lowest score possible was 24.

The average was 82.1 (SD = 17.5). The minimum score was 27 and the maximum score was 118 with a range of 91.

Participants (N=297) completed the Environmentally Responsible Behaviors Index (ERBI). The environmental behavior scores were the total of the twenty-five item 5-point Likert scale survey. The highest score possible was 125 and the lowest score possible was 25. The mean was 66.2 (SD = 21.6). The overall minimum score was 25 and the maximum score was 125.

Participants (N= 294) completed the Decision Making Questionnaire. The decision-making scores came from the sum of the six item 5-point Likert scale survey. The range of scores possible were between 6 and 30. The mean for the entire sample was 21.1 (SD = 4.4). See Table 14 for the full set of descriptive statistics.

Table 14.

<i>Descriptive statistics for survey results</i>					
Survey	N	Min	Max	Mean	SD
Environmental Identity	283	27	118	82.1	17.5
Environmental Behaviors	297	27	125	66.2	21.6
Decision Making	294	6	30	21.1	4.4

Overall, there was a slight difference in the mean scores between the two groups with the Sustainability group having slightly higher scores than the Education group. In Table 15, the mean scores on the three surveys are separated into the two groups of participants. One group was enrolled in Reflections on Learning during the Fall 2014 semester. The other group was enrolled in Introduction to Sustainability. The average scores are recorded in Table 15. In general, the Sustainability participants had higher scores than the Education participants. In order

to test if the differences in mean scores were significant, an ANOVA was conducted. See results in Table 17.

Table 15.

Descriptive statistics of survey scores separated into Education Participant and Sustainability Participant groups

Survey	Score Minimum and Maximum	Education Group Mean Score	Sustainability Group Mean Score
Environmental Identity	24-120	79.1 (SD=16.8)	93.7 (SD= 15.2)
Environmental Behaviors	25-125	62.4 (SD= 20.2)	80.7 (SD= 20.8)
Decision Making	6-30	20.8 (SD= 4.30)	21.9 (SD= 4.80)

Sustainability Participants are Significantly More Environmentally Active than Education Participants

An ANOVA was chosen to analyze the differences in the mean scores between the Education and Sustainability groups within the sample. The ANOVA was chosen to explore the difference between participants that had chosen to take a course pertaining to environmental sustainability and participants interested in an education course and not necessarily associated with environmental interest or careers. These two distinct groups were chosen to broaden the sample of individuals surveyed about their environmental identity (Holmes, 2003). Based on the work done by Chawla (1999) and Clayton (2003), I hypothesized that participants in the Sustainability course would have higher environmental identity scores than participants in the Education course. Table 16 outlines the overall descriptive statistics.

Table 16.

Descriptive statistics for Environmental Identity Scale and Environmentally Responsible Behavior Index Education and Sustainability groups

Participant Group	Survey	N	Min	Max	Mean	SD
Education	Identity	225	27	115	79.1	16.8
	Behaviors	235	27	112	62.4	20.2
	N	224				
Sustainability	Total Score	58	48	118	93.7	15.2
	Identity					
	Total Score	62	30	125	80.7	20.8
	Behaviors					
	N	58				

Based on the ANOVA findings, there was a significant difference between the Education and Sustainability group mean scores for the Environmental Identity Scale, $F(1, 281) = 35.9$, $p < .001$, $d = .908$. The possible minimum score was 24 and the possible maximum score was 120. There was a large difference between the group mean scores. The percentage of non-overlap between the Education and Sustainability group means was 51.6%. The variance was homogeneous for all six subscales for Environmental Identity Scale (Levene's test, lowest $p > .09$), so group differences were evaluated using ANOVA. See Appendix G, Table 30, This shows that participants in the Sustainability course were more likely to consider the natural environment a key part of their self-concept. This result was predictable. Based on Clayton's theory of environmental identity participants in the Sustainability group would likely consider the natural environment a part of their self concept especially since they had chosen a career in sustainability and the environment.

There was a significant difference for the mean of the Environmentally Responsible Behaviors Index score for the Education and Sustainability participant groups, $F(1, 282) = 39.9$, p

$< .001$, $d = .893$. See Table 18 for the ANOVA results. The percentage of non-overlap between the Education and Sustainability group means was 51.6%. The Levene's test (lowest $p > .09$) showed the distribution scores for the consumerism and education subscales were not significantly different, so an ANOVA was the best test for measuring the difference between the means. See Appendix G, Table 31 for the ANOVA results. However, the Levene's test (see Appendix G, Table 32) showed the distribution of scores for activism ($p = .009$) and recycling ($p = .00$) were significantly different. This meant that a non-parametric test needed to be conducted. In this case, the Mann-Whitney test was administered. According to the Mann-Whitney results, the median scores for the activism and recycling behaviors were significantly different, so the results from the ANOVA were accurate. These results show that the Sustainability participants were more likely to act in environmentally responsible behaviors more frequently than the Education participants. Once again, this finding was not a surprise. Individuals who had chosen to take a course about sustainability issues and/or devote their lives to environmental causes have been shown to participate in environmental acts more frequently (Smith-Sebasto & D'Acosta, 1995).

Overall, the Sustainability participants had significantly higher survey scores for the Environmental Identity Scale and the Environmentally Responsible Behaviors Index. These results showed that the Sustainability participants were more likely to identify with the natural environment and act in pro-environmental ways. Based on their major choice, this result is not surprising. According to Clayton (2003), people with strong environmental identities are more likely to value a sustainable lifestyle and choose environmental careers (Holland & Kempton, 2003).

Table 17.

ANOVA results for the comparison of the Education participants and the Sustainability participants mean scores on the Environmental Identity Scale and Environmentally Responsible Behaviors Index

Survey		df	F	p
Environmental Identity	Between Groups	1	35.9	.000**
	Within Groups	281		
	Total	282		
Environmental Behaviors	Between Groups	1	39.9	.000**
	Within Groups	295		
	Total	296		

** p < .01

Research Question 1: What is the nature of the association between environmental identity and environmentally responsible behavior?

Participants with Strong Environmental Identities Participate in Environmentally Responsible Behaviors More Often

A correlation analysis was conducted to identify the direction and strength of the relationship between environmental identity and frequency of participation in environmentally responsible behaviors. The higher the strength the closer the correlation coefficient is to +/-1.0. If two variables are weakly associated with each other the correlation coefficient will be closer to 0. I hypothesized that environmental identity would be correlated with participating in environmental behaviors more frequently.

Based on the data below in Table 18 and Figure 3, environmental identity and participating in environmentally responsible behaviors was positively correlated $r = .685$, $p < .01$. This means that a person who believed the natural environment was part of their self-concept

was more likely to participate in environmentally responsible behaviors. This showed that environmental identity was related to participating in pro-environmental behaviors. This result aligned with what Clayton (2003) and others found in their studies. However, the quantitative results could only show that there was a relationship in how participants scored on the two surveys, not the reasons why the two constructs seemed to be related or how other factors may have influenced or mediated when and how often certain behaviors were participated in.

Table 18.

Correlation between environmental identity and participating in environmentally responsible behaviors for entire sample

Measure	p	Pearson Correlation (r)	N
Environmental Identity	.000	.685**	282
Environmental Behaviors	.000	.685**	297

** p < .01

The scatterplot below also showed the moderately positive correlation between environmental identity and environmentally responsible behaviors.

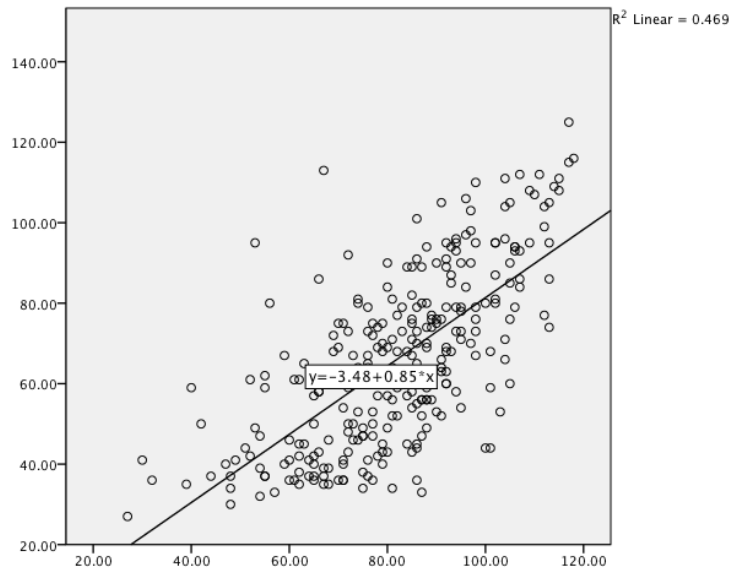


Figure 3. Scatterplot showing relationship between environmental identity and frequency of participating in environmentally responsible behaviors.

Research Question 2: How does environmental identity influence how one thinks about making environmental decisions?

Descriptive statistics for the Decision Making Questionnaire

Participants (N= 293) completed the Decision Making Questionnaire. The decision-making scores came from the sum of the six item 5-point Likert scale items. The highest score possible was 30 and the lowest score possible was 6. The mean was 21.1 (SD = 4.43). The minimum score was 6 and the maximum score was 30 with a range of 24. See Table 19 for all results.

Table 19.

Descriptive Statistics for the Environmental Identity and Decision Making scales for entire sample

Survey	Score Range	Mean	SD	N
Environmental Identity	24-120	82.1	17.5	283
Decision Making	6-30	21.1	4.43	294

Participants with Strong Environmental Identities Make Fast Decisions to Recycle, but Education and Sustainability Participants Use System 1 Thinking

As seen in Table 20, environmental identity and the type of thinking that went into making the decision to recycle was significantly correlated ($r = .476$, $p < .01$). In the scatterplot in Figure 4, the relationship was low to moderate in the positive direction. In other words, if someone had a high score on the environmental identity survey that person was more likely to have made the decision to recycle in a fast, intuitive, System 1 way. If someone had a low environmental identity score that person was more likely to make the decision to recycle in slow, System 2 way. Thinking in a fast, System 1 way means making decisions automatically and unconsciously (Kahneman, 2011). Thinking in a System 2 way means taking time to consciously make a decision. It requires effort and thinking (Kahneman, 2011).

Table 20.

Correlations between environmental identity and decision making for entire sample

Measure	Pearson Correlation (r)	p	N
Environmental Identity	.476**	.000	283
Decision Making	.476**	.000	294

** $p < .01$

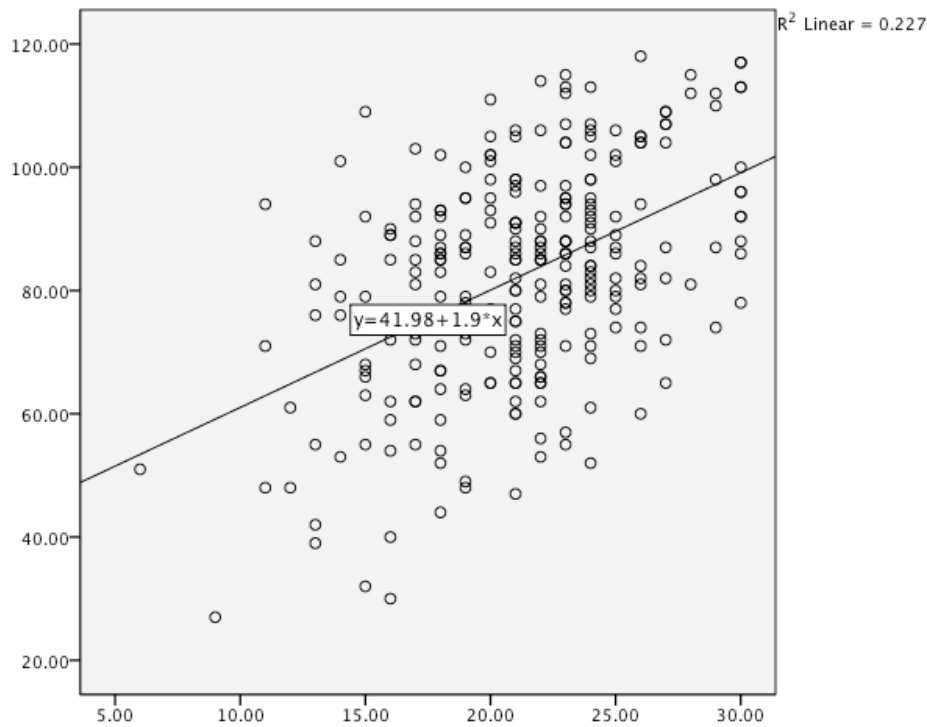


Figure 4. Scatterplot showing relationship between environmental identity and type of thinking about environmental decisions.

Overall, as outlined in Table 21, there was a slight difference in the mean scores between the two groups. The Sustainability group had a slightly higher score than the Education group. The Education group had a mean score of 20.8 (SD= 4.31) with a minimum score of 6 and a maximum score of 30. The mean score for the Sustainability participants was 21.9 (SD= 4.80) with a minimum score of 11 and a maximum overall score of 30. Based on the correlation between environmental identity and the tendency to use System 1, fast thinking when recycling and the Sustainability participants having significantly higher mean scores on the environmental identity survey, one would think that the Sustainability participants would also have significantly higher decision making scores compared to the Education participants. In order to test this

assumption, an ANOVA was conducted to explore the possible difference between the Education and Sustainability group scores for the Decision Making Questionnaire.

Table 21.

Descriptive Statistics Environmental Identity Scale and Decision Making Questionnaire for the Education and Sustainability groups

Survey	Score Range	Education Mean Score	Sustainability Mean Score
Environmental Identity	24-120	79.1 (SD=16.8)	93.7 (SD= 15.2)
Decision Making	6-30	20.8 (SD= 4.30)	21.9 (SD= 4.80)

Education and Sustainability Participants Use System 1 Thinking when Recycling

The education and sustainability participants use the same System 1 thinking when recycling. Based on the ANOVA results in Table 22, there was no significant difference between the Education group score and the Sustainability group score on the Decision Making Questionnaire, $F = 2.9$, $p = .085$, $d = .241$. The magnitude of the effect size based on the Cohen's d was small, meaning the percentage of non-overlap between the Education and Sustainability groups was 14.7%.

Table 22.

ANOVA results for the comparison of the mean scores on the Decision Making Questionnaire

Survey		Df	F	Sig.
Decision Making	Between Groups	1	2.99	.085
	Within Groups	292		

Table 22 (Cont'd) Total 293

** p < .01

The Levene Statistic of the Test of Homogeneity of the Variances showed the distribution of scores for the Education and Sustainability groups were not significantly different from each other so an ANOVA was the best test for measuring the difference between the means. The assumption of homogeneity of variance was upheld, so a parametric test, such as an ANOVA was an appropriate test.

The Decision Making Questionnaire consisted of six distinct items, so I conducted an ANOVA to compare the two group means for all six items separately. This was done to explore the possibility that the Sustainability or Education participants may have had significantly different scores for any of the individual items. See Appendix G, Table 34. The six items, each of which measured a different characteristic of System 1 and System 2 thinking included: slow and fast thinking, effortful and effortless thinking, conscious/intentional and automatic, the affect on thinking capacity, skeptical and certain, and emotional reactions. Based on the ANOVA in Appendix G, Table 34, the Education and Sustainability group means for five out of the six items were not significantly different from each other. However, the item that measured the emotions that went into making the decision to recycle showed that the Education and Sustainability group means were significantly different $F = 14.8$, $p < .001$, $d = .531$. The magnitude of the effect size based on the Cohen's d was medium, meaning the percentage of non-overlap between the groups was 33.0%. Meaning the significant difference between the groups was actually significant and

not left to chance

In summary, there was a relationship between environmental identity and the type of thinking that went into making the decision to recycle. Participants with a stronger environmental identity made the decision to recycle in a faster, more automatic, System 1 way. Even though the Sustainability participants had significantly higher mean Environmental Identity scores, they were no more likely than the Education participants to use System 1, fast thinking when deciding to recycle. Sustainability participants were more emotional about recycling, however. These results showed that there is a relationship between environmental identity and the type of thinking when recycling, however it also shows that there is no significant difference between the type of thinking that the Sustainability participants put into recycling compared to the Education participants, even though the Sustainability participants had significantly higher environmental identity scores. This showed that environmental identity can only provide a partial explanation into the type of thinking that is involved in deciding to recycle. The interviews will add the missing pieces to help explain the relationship between environmental identity, participation in pro-environmental behaviors and the thinking that individuals use while recycling.

Qualitative Results

Environmental identity and environmental behaviors were correlated, meaning if someone had a high score for environmental identity it was likely they would also have a high score for the Environmentally Responsible Behaviors Index. There was a correlation, but not all participants showed this relationship. This was why it was important for me to look more deeply into the relationship between environmental identity and participating in environmentally responsible behaviors. In order to look more deeply into this relationship I wanted to interview

participants who fit the parameters of the relationship. For example, I wanted to interview a participant with a high or low environmental identity scores and high or low environmentally responsible behavior index score. In addition, I wanted to interview participants that did not show this relationship. For example, I wanted to interview participants with a high environmental identity score, but a low behavior score. In addition, I wanted to interview participants with a low environmental identity score and a high environmentally responsible behavior index score. The environmental identity scale used for this study had certain assumptions. For instance, one assumption was the natural environment must be a significant part of who one thinks he or she is in the world. Another assumption of the environmental identity scale was that one must have a particular ideology or set of values to have an environmental identity I think that having a strong environmental identity is not the only reason why participants act in environmentally friendly ways. A possible hypothesis is to act in environmentally responsible ways without enjoying time in the natural world or considering the natural environment as a key component of their self-concept. My hypothesis was that some participants with low environmental identity scores and high environmentally responsible behavior scores knew that it was important to behave in environmentally responsible ways because they knew it was important to mitigate climate change. They also may have believed it was important to be sustainable. They were also likely to have been influenced by important people in their lives (i.e. parents), yet they did not consider the natural world to be an important part of who they were as individuals. For instance, Head (1997) explained that our identities are strongly influenced by others. Head (1997, p.7) explained ‘that children are largely defined by the significant adults in their lives (Dillon et al., 1999).

The quantitative data also showed that environmental identity and making the decision to recycle using System 1 thinking were positively correlated. In other words, if someone had a high environmental identity score or considered the natural environment a part of their self concept that person was more likely to make the decision to recycle in a fast, intuitive, System 1 way. If someone had a low environmental identity score that person was more likely to make the decision to recycle in slow, System 2 way. In the Decision Making Questionnaire, the only environmental decision assessed was in regard to recycling. Perhaps, the nature of decision-making was context specific. When reviewing the data, participants described how frequently they recycled differently according to where they were and whom (i.e. friends, family, other students) they were with. For instance, participants with both strong and weak environmental identities were likely to recycle frequently and report making the decision to recycle in fast, automatic way when they were on campus, but participants with weak environmental identities usually reported recycling less at home than on campus.

These assumptions are in line with the work done by Heimlich and Ardoin (2008). Individuals are motivated to make environmental decisions by a variety of different factors (Heimlich and Ardoin, 2008). Some individuals are motivated to act environmentally because they believe environmental issues like climate change are causing environmental problems and humans can make decisions to help stop or at least mitigate the environmental changes. Others are motivated by the settings in which they live such as their home or community (Heimlich & Ardoin, 2008). For instance (adapted from Heimlich & Ardoin, 2008), an individual motivated to behave environmentally because of global climate change may make the decision to drive a hybrid car, support environmental groups financially, and install energy efficient appliances. The same person may not be concerned with using chemicals on his yard, so using toxic chemicals as

fertilizers is not a problem. In addition, a person influenced to act in regard to a particular setting such as their home or workplace may take environmental action only in that setting. For example, someone empowered to act at home may purchase compact fluorescent light bulbs, buy organic cleaners, and recycle regularly within that setting. Outside of the home, however he may not be as empowered and the behavior may not be as convenient, so he may not decide to participate in those behaviors any of those behaviors in the work setting.

Context changes depend on the type of environmental decision, the social influence of others, and the location of the decision is being made. Interviewing allowed me to better understand the nature of the relationship between environmental identity and System 1 and System 2 decision-making

Participants with a high environmental identity made decisions about recycling in a fast way because they viewed recycling as an environmental behavior that was considered automatic. This automaticity came from participating in the behavior often and believing it was the most environmentally friendly decision to make. System 1 thinking was automatic and required little effort. System 1 functions on learned connections between ideas and skills it has already mastered. System 1 operates without choice. System 2 thinking is slow and effortful. It has some ability to control and change System 1 reasoning by controlling attention and memory (Kahneman, 2011).

The following interview analysis was meant to help to answer the questions above. In addition, the interviews were meant to better understand the relationship between environmental identity and participating in environmental behaviors and making decisions to act in environmental ways.

Environmental identity was coded using the constructs outlined by Clayton (2003). Environmental identity based on Clayton's analysis included the values and priorities one placed on the environment, one's self concept and how the natural environment played a role in making someone who they are, the types of experiences one has had in nature, and the types of groups one is a member. Decision-making was coded using Kahneman's (2011) System 1 and System 2 thinking framework. Decision-making was analyzed using fast and slow thinking characteristics. Fast thinking included references to doing things automatically, unconsciously, or habitually. Slow thinking was coded when participants referenced putting effort and thinking into make decisions to participate in environmental behaviors. The environmental behaviors used in this study were modified from the Environmentally Responsible Behaviors Index. See Appendix A.

Summary

Based on the quantitative analysis, environmental identity and environmental behaviors are correlated. This means that if someone had a high score for environmental identity it was likely they would have to participate in environmental behaviors more frequently. Even though the relationship was significant, there were outliers. See the scatterplots in Figures 1 and 2. This was why it was important to interview those that showed the relationship between environmental identity and environmentally responsible behaviors as well as those that did not show the relationship. Therefore, participants with above average environmental identity scores and above average environmentally responsible behavior scores were chosen for interviews. Participants that had below average environmental identity scores and above average environmentally responsible behaviors scores were also chosen.

In addition, according to the quantitative data, environmental identity and environmental decision-making were positively correlated. In other words, if someone had a high score on the

environmental identity survey that person was more likely to make the decision to recycle in a fast, intuitive, System 1 way. In order to further explore the relationship between environmental identity score and decision-making, participants were chosen based on their responses to the Environmental Identity Survey and the Decision Making Questionnaire. Participants that had strong environmental identities and had high scores on the Decision Making Questionnaire were interviewed. In addition, participants with strong environmental identities and below average decision-making scores were interviewed to better understand the relationship.

The participants' survey scores are described below in Table 24. Kim was chosen because her scores were aligned with the relationship shown by the correlation between environmental identity, frequency of participating in environmentally responsible behaviors, and making fast decisions to recycle. Her scores were below average for all three variables. Savannah, Ryan, Molly, and Olivia were chosen because their responses on the survey were in line with the correlation results. They had high environmental identity scores, environmentally responsible behavior scores, and high decision-making scores. Ansel showed a below average environmental identity score, but had an above average behavior score. Katie had an above average environmental identity score, but a below average behavior score.

Table 23.

Interview participants' pseudonyms and survey scores

Pseudonym	Participant Group	Identity Score (24-120)	Behaviors Score (25-125)	Decision Making Score (6 slow-30 fast)
Kim	Education	32	36	15

Table 23 (Cont'd)

Ansel	Education	56	80	22
Katie	Education	86	36	22
Savannah	Education	96	97	30
Renee	Education	113	74	30
Ryan	Education	115	111	28
Molly	Sustainability	117	125	30
Olivia	Sustainability	118	116	26

Description of interview participants

In order to better understand the identities of the interview participants, I asked participants to answer the question: Who am I? In addition, I wanted to get a sense of what environmental actions the interview participants participated in regularly. To get this information, I asked participants to answer: What actions do you take for the environment? Table 25 shows how the participants answered these questions. The self reported environmental action items are numbered based on how much of a positive impact the action had on the environment based on the participants' perspective. The action listed first was the action the participant ranked as having the most positive impact on the environment. The who am I items are ordered based on the order the participants listed them.

Table 24.

Interview participants' answers to identity interview questions

Participant	Self reported environmental actions	Answers to Who am I?
Kim	1. Return water bottles 2. Return cans 3. Reuse plastic bags 4. Don't litter 5. Recycle paper	MSU senior Big sister Hard worker Crafty Outgoing People person
Molly	1. I recycle everything 2. I try not to use excess electricity 3. I pick up trash 4. I use reusable grocery bags 5. I grow my own food (seasonal)	Junior Yooper Environmentalist Environmental studies and sustainability major Lesbian Athlete
Ryan	1. Recycle 2. Pick up trash 3. Catch and release fishing	Student American Conservationist Musician Hard worker
Ansel	1. Recycle 2. Drive small car 3. Don't litter 4. Garden at home; Grow own vegetables 5. Recycle paper	Sister Daughter Friend Traveler Cook
Savannah	1. Recycle 2. Car pooling 3. Conserving water 4. Turning off lights 5. Reduce consumerism 6. Rescue animals	College student Female Sister Irish, French, German...culture Caregiver
Renee	1. Reducing Consumption: Typing notes, walking/gas 2. Recycling 3. Taking lukewarm showers	I am a King, family Woman Musician (oboe) playing and listening to music

Table 24 (Cont'd)	4. Reusing clothes 5. Candles	Educator Learner Science nerd Heterosexual Daughter of social workers Catholic-not pushy
Olivia	1. Study food systems 2. Recycle and educate 3. Composting/food waste reduction 4. Conserve resources	Student Cat lover Food systems nerd Environmentalist Sister Outdoorsy person Gardener
Katie	1. Recycle plastic 2. Recycle cans 3. Recycle cardboard 4. Recycle paper	Girl 19 MSU Big family Teacher

Environmental Identity and Behaviors: What is the nature of the association between environmental identity and participating in pro-environmental behaviors?

The quantitative analysis showed participants who believed the natural environment was a part of their self-concept were likely to participate in environmentally responsible behaviors more frequently. Environmental identity and participating in pro-environmental behaviors was positively correlated $r = .68, p < .01$. The questions asked during the interview were created using Clayton's environmental identity theory. In addition to asking about identity, the main focus of the interview questions was on the major constructs of the Environmental Identity Scale (Clayton, 2003). The constructs included group membership, values and priorities, experiences in nature, and the connection to environmental identity and participation in environmental behaviors. Interview participants were asked to describe their personal connection to the natural environment, in order to better understand how environmental identity and behaviors correlate

with each other. This question was asked because according to Clayton's theory of Environmental Identity, a key component of environmental identity is a strong, personal, and emotional connection to the natural world. According to Clayton (2003), place attachment and emotional connections to particular places shapes self-concept.

In addition, participants were asked to share how frequently they participated in environmentally responsible behaviors. Environmental identity is said to influence individuals to act in more environmentally friendly ways. Individual identities lead to behaviors that are consistent with those identities (Kempton and Holland, 2003). According to Clayton (2003), environmental identity has direct influences on behaviors and attitudes. Environmental identity can be a motivating force for acting more environmentally. If an individual feels like a part of the natural world, that person will likely behave in ways that protect the natural environment because they feel it is an inherent part of him or her.

“An environmental identity locates us within a collective that is truly an interdependent system. If we recognize the significance and value of other members of the system, including nonhuman entities, that is one step toward acknowledging the rights of those entities, the way in which they are affected by our own actions and the obligations that we owe them”
(Clayton, 2003, p. 60).

It is important to recognize that an environmental identity is also ‘in part a social identity’ (Clayton, 2003, p.53). According to Clayton and Opatow (2003), environmental identity inevitably contains a social component because it is associated with cultural components and worldview. Environmental identity helps people to affiliate with particular social groups (Clayton, 2003). To explore the social components of environmental identity, participants were

asked to describe how group memberships including how their family made a difference in the frequency of participation in environmental behaviors. Participants were asked about familial experiences and influences because environmental identity can be strongly influenced by family values and experiences. In Blatt's (2013) study looking at the development of environmental identity in a high school environmental science class, she found that environmental identity was influenced by family environmental commitment. In addition, Kitchell et al. (2000) and Zavestoski (2003) found that familial environmental background (i.e. amount of time spent in nature and types of interactions with the natural environment) was a major factor influencing environmental identity.

Experiences in nature were assessed using questions such as can you describe a memorable experience in nature as a child and can you describe a memorable experience in nature as an adult? Positive experiences and interactions in nature are important factors for developing environmental identity. According to Clayton (2003), environmental identity is developed through having positive interactions with the nature in childhood.

Theme 1: Families Influence Pro-Environmental Behaviors

Environmental identity helps people to affiliate with particular social groups (Clayton, 2003). According to Clayton (2003), environmental identity has a personal and social component. "A person's environmental identity consists of personal characteristics unique to the individual as well as group memberships shared with similar, like-minded others" (Opotow & Brook, 2003, p. 250). Group memberships based on environmental identity are based on socially shared understandings of the relationship between people and nature (Weigert, 1997). Being a part of a group influences identity and in turn influences the actions taken to confirm membership to a particular group. Actions taken by the group are expected to reinforce the sense

of group identity. This is particularly true when the actions reinforce the group's core beliefs and values (Samuelson, Peterson, and Putnam, 2003). Actions that conform to the group's behavioral norms can increase the normative influences of group identity by clarifying the behaviors that are approved or disapproved for group members (Samuelson et al., 2003). Using Clayton's conception of environmental identity, participants were asked to share how particular social relationships and group memberships influenced their participation in environmental behaviors.

Families influenced participation in environmental behaviors. All eight participants mentioned that their family influenced their environmental behavior in some way. Overall, in all eight interviews there were about 154 references to family, see Table 25. Participants with weak environmental identities also referenced a family influence. Participants usually referenced their parents and grandparents when discussing their identities and their participation in environmental behaviors. On one hand, participants with strong environmental identities were likely to attribute their environmentalism with how they were brought up or with how their family encouraged them to be concerned for the environment. Ryan, a participant with a strong environmental identity described how his dad influenced him to not litter and to always make the world better than he found it. On the other hand, participants with a weak environmental identity described their family in other ways. For instance, Kim a participant with a weak environmental identity mentioned how her parents always voted for conservative candidates, so she also voted for conservative candidates who care less about the environment and more about other issues.

Table 25.

Number of family references during the interview

Participant	Number of Family References
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Table 25 (Cont'd)

Renee	38
Ansel	22
Savannah	22
Olivia	19
Kim	18
Ryan	14
Molly	11
Katie	10

Participants attributed their change in environmental behavior and awareness of environmental issues to an interaction with a family member. Many times, family members were reported as teaching family values by discouraging poor environmental behavior. For instance, Ryan a freshman Education student with a Environmental Identity Scale score of 115 and an Environmentally Responsible Behaviors Index score of 111, both of which are high scores meaning he identified strongly with the natural environment and participated in environmentally responsible behaviors frequently described a time when he was trout fishing with his dad and he threw a cigarette butt in the river. This example showed how littering, an anti-environmental behavior was disapproved of by an important member of Ryan's family group, his dad. The behavior was punished.

Ryan: "Yeah, I think a couple of years ago I was fishing with my dad and I wasn't ... I was smoking a cigarette and I wasn't really thinking and I

just kind of tossed it and he got pretty pissed off so I just ... ever since then, you know, I've made a conscious effort to pick up trash when I see it and not do that nowadays when I'm out fishing so, experiences with my family members [made an impact].”

Overtime, group membership can change how one views oneself in relation to the natural world.

Family members also taught the participants about consequences to anti-environmental actions. Another example came from Ansel, a freshman Education student. Ansel's environmental identity score was 56 and her environmental behaviors score was 80. Ansel described how she changed her recycling behavior after her father showed her pictures of the Pacific Garbage Island.

ANSEL: I guess recycling glass bottles or jars. When I was little I always used to say to my dad, “Why do we have to go do this?” Like it's such a hassle to go all the way to the store to turn them in, just throw them out in the trash. And he explained to me, he showed me pictures of like, like the, the ocean where the, I can't think of what it's called, the circle where all the trash—

INTERVIEWER: Oh, the garbage?

Ansel: Yeah, is floating.

INTERVIEWER: The island?

ANSEL: Yeah, and he just showed me that, and he's like, “If we don't do this, this could happen more and more.”

Participants were also influenced to act in pro-environmental ways because their parents

acted in environmentally friendly ways. Olivia, a Sustainability student, when asked how social interactions influenced her participation in pro-environmental behavior in a positive way, she described how her family also participated in environmental behaviors like gardening. Olivia: "...my family like my mom she went here as a student to study natural resources like natural resources something now she's a math teacher but she is still like into the environment. And my dad felt the same way he ... I definitely got my gardening stuff because he was always like oh like we got to grow our own food and see that kind of stuff." Olivia's environmental identity score was 118 and her environmentally responsible behaviors score was 116.

Participants reported how their grandparents influenced their environmental behaviors in a positive way. Ryan and Ansel both mentioned their grandparents as having a positive impact on their recycling behavior. Ryan: "... actually you know what my grandma really got me into recycling because she's pretty like serious about it like we have this big huge recycling bin at home and she just she spends like a hour every week sorting through it and stuff like that. So I think that was a big reason behind me recycling."

When evaluating how frequently she participated in certain environmental behaviors, Ansel mentioned that she spoke with her grandparents about environmental issues often.

ANSEL: Talk to others about environmental issues. Yes, I do. I talk to my grandparents. I'm going to put that under number four. They're really into protecting the environment and they drive a Prius and stuff, so I talk to them about it.

INTERVIEWER: And in a way of just gaining information from them or sharing?

ANSEL: Yeah. Or talking about like, “Oh, I can’t believe people do this to the environment.”

Family values are important parts of developing identity. In the examples above, the environmental behaviors family members participated in were influential in how participants acted toward the environment. In the examples described by Ryan and Ansel, their fathers influenced their behavior by either informing them of the consequences of anti-environmental behaviors or influencing them by disapproving of particular behaviors and encouraging others. Being a part of a family group influenced the types of behaviors these respondents participated in. The social nature of identity helped to explain how individuals located themselves as active members of a group, in this case, how they positioned themselves in a family group. In Ryan’s example, family membership helped him feel connected to his father while also acting in pro-environmental ways to uphold his active membership in the family group. Based on this result, environmental identity is an identity developed through social interactions. Social interactions with environmentally conscious family members influenced participation in pro-environmental behaviors.

Theme 2: Values and Priorities Influence Participation in Pro-Environmental Behaviors

Values and priorities are an important component of environmental identity (Clayton & Opatow, 2003). Environmental behaviors and making contributions to environmental organizations are ways to show personal and collective values (Clayton & Opatow, 2003). These behaviors and contributions show others what is valued and cared about and help to define one’s identity (Ritov & Kahneman, 1997; Clayton & Opatow, 2003). In their research evaluating environmental values, Kempton, Boster, & Hartley (1995) found that environmental values correlated with religious and moral values. In their 2000 study, 64% of participants agreed that

protecting the environment was a moral issue involving beliefs about what was morally right and wrong.

In this study, participants with a strong environmental identity and participants with a weak environmental identity had different overall values and prioritized different behaviors. Students with a strong environmental identity were more likely to describe the reasoning behind their behavior as being something that was the right thing to do or that it was important to leave the environment better than they found it. For instance, Ryan a participant with a high environmental identity score mentioned he wanted to make the environment better than he found it. He later stated that even though he did not think that one vote made that big of a difference he would still vote for someone who valued the environment.

RYAN: “Well, I think being a conservationist impacts it the most impacts the environmental actions the most probably just because, you know, I don’t know I was always just brought up, you know, if you see something on the ground you pick it up even if it’s not yours if you didn’t make the mess, you know, leave it better than you found it.”

Participants who cared more for the environment had stronger environmental identity scores and participated more frequently in pro-environmental behaviors. Molly, a Sustainability participant, with an Environmental Identity score of 117 and an Environmentally Responsible Behaviors Index score of 125 lived in a tourist town in northern Michigan and saw the aftermath of the summer tourist season. The trash and litter near the beach bothered her. She explained that she valued the environment and this caused her to care a little more than people who were not environmentalists. She reported that her care for the environment was why she recycled and thought it was important to keep the beach and water clean.

INTERVIEWER: So how do you think the natural environment fits into your identity?

MOLLY: I think I care a little bit more. When people laugh that I recycle everything, it's kind of, I've recycled everything since I was young, younger. Like I've never really lived in an environment where we didn't reuse or we didn't recycle. But especially up north, it's a tourist town. Mackinaw City is a tourist town. And every summer you can tell it gets a little bit dirtier as the tourist leave. Because they leave and they don't have to live in the environment anymore. But there's trash on the beach. And there's stuff floating in the water. And they don't live there so they don't care. But I see it. As a, like as a resident there. And so it just, I don't like when people take the natural environment for granted. Because it's like they think it will always be there [when] it will not.

Participants with a below average score on the environmental identity scores did not prioritize participating in environmental behaviors. For example, Ansel described a time when her sorority did a community clean up. When asked how her membership in a group or community influenced your environmental behavior? Ansel responded by describing a time when her sorority sisters did a community clean up in Lansing. However, she did not attend.

“In my sorority, I mean I didn't go, but they went and cleaned up the streets in I think it was somewhere in Lansing, so they have stuff like, like that that we do. I just couldn't go that one time, but they come up with other things and I'm like waiting for another one to go to.” This is one

example to show that she did not prioritize acting environmental even when the structures were in place to participate.

Others with weak environmental identity scores did not value the natural environment. The two other participants with weak environmental identities identified with religious groups and conservative politics. For instance, Kim with a score of 32 on the Environmental Identity Scale and a score of 36 on the Environmentally Responsible Behaviors Index stated she always voted Republican because they held the same values as she did. She further stated that her parents instilled those (Republican) values and she planned to stick to those ideals. Kim reported, “I will probably always vote Republican which sounds bad. But I always want to vote somebody that has like the same values I do. I don’t want to vote for somebody that has different values from me. And that was given to me from like my parents.”

Katie identified as a Catholic from a small town. Her Environmental Identity Scale score was 86 and her Environmentally Responsible Behaviors Index score was 36. Her identity as a Catholic from a small town made her think about the environment and environmental issues in a different way. She stated she was not concerned about environmental issues because they were taken care of by God. Katie first mentioned that she was not much into the environment. She stated, “I think just like talking about [the environment] and stuff is I have never been the one that’s like huge on environment at all. I’m from a small town, I’m a Catholic all these other things I don’t like science. And so I just haven’t been like super interested in it.” I asked her to explain why being a Catholic influenced her interest in the environment. She further reported, “I just think that like I don’t I’m not concerned with it that much because I feel like that it just like all taken care of just like I think they’re like because I know my imprint will be like on it the earth but I feel like God will take care of the world. So I just don’t worry about it.”

Values made a large impact on what behaviors one participated in. Participants with a strong environmental identity and considered the natural environment a part of their self concept were more likely to describe their participation in environmental behaviors as a moral obligation. Participants with a weak environmental identity or the participants that did not consider the natural environment a part of their self-concept were more likely to attribute their lack of participation in environmental behaviors to their religious affiliation and political ideals. These results show that there is a relationship between values, specifically moral and religious values, environmental identity, and participation in environmental behaviors.

Theme 3: Participants with Weak Environmental Identities Can Be Influenced to Act in Pro-Environmental Ways

Participants with a strong environmental identity described themselves as educators. They thought teaching others was an important part of their identity as an environmentalist and/or conservationist. Participants with a weak environmental identity can be influenced by others to act in pro-environmental ways.

For instance, Savannah saw herself more as an educator than an environmentalist even though she had a strong environmental identity. The educator identity began when she completed her Girl Scout Gold Award. To obtain her award, she dedicated her time to create a recycling education program for a summer camp. She described herself as an educator and someone who would rather teach about protecting the environment than about math in her future classroom. She stated,

“I think of myself maybe more as an educator then an environmentalist and then I just take ... I decide certain things that I like to educate more about which would be the recycling in the environment and like geography and histories. So that’s like something I just unconsciously just

kind of educate more about than I would like math, you know, or something like that.”

In addition, she mentioned she taught the children she babysat about recycling when their family did not regularly recycle.

“I’m so use to recycling so many different ways and even at the house like if I’m babysitting or something and they don’t have like they don’t have a recycling, you know, thing set up kind of influence or tell the kids like, you know, you can recycle this or teach them, you know, show them not a guilt trip but, I will guilt trip my boyfriend’s family that’s what my boyfriend’s family would be like. Yeah, you guys should be, you know, doing this and stuff.”

Renee, a junior Education student explained that she encouraged her family and friends to be more environmentally conscious. She also encouraged her roommate to recycle more. When asked how social interactions impacted her choice to participate in pro-environmental behaviors, Renee explained that she pushed others to participate in pro-environmental behaviors.

“I’m more of the person that pushes. There’s not really anyone in my life that tells me not to besides my dad. Yeah, I’m the one trying to create relationships that push people to be more environmentally friendly. Like with my roommate, when I was trying to - I just met her, I was trying to like be a good friend and everything. But I was like, “Hey, could you just - instead of putting this in the trash bag could you put it in my recycle bag that’s right next to it because this can be recycled?” And like the same

thing happens - like sometimes she forgets, and when I do I just put it in the bag for her or I dig it out of the trash. But I don't really feel like I'm affected that much besides my dad, just to avoid arguments. But it really doesn't change what I do; it just changes how I act around him."

Molly also influenced people to participate in environmental behaviors. She reported she talked to people about environmental issues in an open and honest way. She reported she stayed away from sharing her opinion without facts to back her opinions up. Her passion came through in her decision to demand her roommates to recycle as a part of signing the lease. When asked how she influenced people's behaviors, Molly explained:

"It depends on who it is. With my roommates, I told them flat out before we signed the lease that we were going to recycle. That was a hard limit for me. With my mom, I just expose her to what I think would be good and she eventually warms up to the idea. In general though, I just talk to people. I tell them my opinions. I tell them why I have those opinions. I tell them what I do. I tell them why, how. And I feel like when you take the time to actually explain to people your opinions and why you think them, not just what you think, but why, they are more likely inclined to either try it out or at least accept it and acknowledge it. Whereas if you just tell them your opinions, they will be like ok yeah, that's great. But I don't know. I just feel like you have to really talk to people about it instead of just throwing opinions at them."

Olivia, a Sustainability student with a strong environmental identity, mentioned her experience in a residential organization on campus helped her to reach out to people and make them aware of current environmental issues. Olivia explained,

“Residential initiative on the study of the environment (RISE). So yeah I think that because like I mean I connect more with the people that come out of that campus now and so I don’t go see a lot of them anymore. And so when I posted about it a lot of people have kind of done it and I’m like oh that’s so cool like whatever. And so personally for me it’s really cool because I get to talk to people more. And then within my friends within my major like I get to share stuff with them and so they talk to other people about it. And a lot of people that aren’t really interested in the environment will still look at it which goes back to I know somewhere awareness and education with family. So I think it’s kind of like general it’s pretty cool. And it kind of forces me to like look into stuff more.”

When asked how his influence on his sister’s behavior was connected to his identity as a conservationist, Ryan explained that educating people was a part of being a conservationist. In addition, he explained that his experience teaching others about the environment in the U.S. Virgin Islands and his time with his younger sister were key components to being a conservationist. Ryan explained, “I think just educating people. You know, doing that presentation in St. John and like educating my little sister and stuff like that on things is just a big part of conservation just so like future generations can kind of just perpetuate that idea of conservation hopefully. I mean that’s the goal.”

Participants with a weak environmental identity are easily influenced to recycle.

Participants with a weak identity were influenced to act in pro-environmental ways by others. In the case of participants with a low environmental identity score, participants usually reported being educated about environmental issues and learning how to participate in pro-environmental behaviors. Kim and Ansel mentioned times when they were encouraged and informed by their family members and their roommates to behave in particular ways. For instance, after her roommates noticed she threw her water bottles in the trash, Kim's roommates encouraged her to recycle plastic. Kim further explained she always recycled aluminum cans and glass bottles, but once she moved in with her current roommates, she began to recycle other materials like plastic and paper. See Table 26 for additional information about this result.

Kim reported, "I return cans." I then asked her if she would return cans even if she did not get a deposit back. In Michigan, individual get a ten-cent deposit back after returning cans and bottles to local recycling centers and stores. She said,

"I didn't until this year actually. I used to always return cans for like the cash back. But now this year like I started doing returning back water bottles and like the milk cartons and everything. And that's because of my roommates. Yeah. They kind of noticed I used to throw them away and now they have like two trash bins that we put like water bottles in because I'm not somebody... I don't have like the refill from the fountain. I buy like the Aquafina packages. So I usually have a lot. So now we return like the water bottles as well. So I can write that one down as well."

Katie had an Environmental Identity score of 86 and an Environmentally Responsible Behaviors Index score of 36. Much like Kim, Katie's recycling behavior was influenced by her

roommates. When asked how social interactions influenced her choice to recycle, Katie explained that her friend encouraged her to recycle because her roommate told her how easy it was to recycle. She provided this example, “Like coming here and my roommate she lives in Detroit and so she like recycled all the time so it was easier for her to separate and doing all this stuff. She’s like yeah just do this and this that’s fine I can do that.”

Recycling is social. Participants with strong environmental identities were more likely to have the practical knowledge necessary to take action for the environment and inform others about environmental issues. They were very motivated to educate others about the importance of acting to protect the environment. Participants with weak environmental identities can be influenced to act in pro-environmental ways. For instance, participants with a weak environmental identity reported that other more environmentally minded people influenced them to act more responsibly toward the environment. This result shows that even those with a weak environmental identity can be influenced by particular social groups (i.e. family, roommate, and peers) to participate in pro-environmental behaviors even if their values and ideals do not fully align. It also shows that participants with strong environmental identities naturally take on the role of educator. These results are important for environmental educators to consider.

Table 26.

Interview participants report of being a teacher of environmental behaviors or a learner of environmental behaviors

Participant	Environmental Identity Score (24-120)	Teacher or Learner
Kim	32	Learner (Influenced by roommates)

Table 26 (Cont'd)

Ansel	56	Learner (Influenced by grandparents)
Katie	86	Learner (Influenced by roommates)
Savannah	96	Teacher (Began environmental education program for children)
Renee	113	Teacher (Encourages others to recycle)
Ryan	115	Teacher (Volunteers at environmental education program in Virgin Islands)
Molly	117	Teacher (Encourages roommates to recycle and mother to compost)
Olivia	118	Teacher (Serves on sustainability organization on campus educating peers about sustainability issues)

Environmental Identity and Systems Thinking: How does environmental identity influence how one thinks about making environmental decisions?

The quantitative analysis showed there was a significant correlation between environmental identity and making the decision to recycle in the fast, System 1. This showed that if someone had a high score on the environmental identity survey that person was more likely to

make the decision to recycle in a fast, intuitive, System 1 way. If someone had a low environmental identity score that person was more likely to make the decision to recycle in slow, System 2 way. There was no significant difference between the Education and Sustainability group score on the Decision Making Questionnaire. The purpose of the qualitative data was to explore how environmental identity actually influenced how one made decisions about recycling and other environmental actions.

Theme 1: Environmental Identity did not Affect the Type of Thinking Used to Recycle

Initially, I hypothesized participants with a strong environmental identity would report using System 1, fast thinking when recycling and participants with weak environmental identities would not use System 1, fast thinking when recycling. The survey results showed there was a positive correlation between environmental identity and System 1 fast thinking when recycling. Before conducting the interviews, my initial hypothesis stayed the same.

However, despite the scores on the environmental identity scale, all interview participants reported frequently and automatically recycling glass bottles, jars, and aluminum cans. All interview participants frequently sorting trash to separate non-recyclables from recyclable materials. For instance, Kim, a politically conservation senior who mentioned caring more about people than the environment explained that she had always recycled glass bottles and aluminum cans. This behavior began with her family. When asked if recycling was curbside, she mentioned her parents just brought the recyclables to Meijer, a large grocery store. She stated that her family always had a separate trashcan for just recyclables. She explained, “Once we got like two or three trashcans full we would bring them in which is actually what I’m doing after this because I have two trashcans full in my car right now.” Based on my knowledge of recycling in Michigan, she described only recycling aluminum cans and glass bottles.

In Michigan, to recycle cans and bottles normally one can go to the local grocery store to drop off the recyclables and receive the cash refund. Kim's family did not recycle other materials that included more effort like paper and cardboard. Kim reported that she did not sort trash to separate non-recyclables from recyclables until this year. She was influenced by her college roommates' environmental behavior and encouragement to act in more pro-environmental ways.

KIM: "Sorted your trash to separate non-recyclable from recyclable material. I didn't do that really except for the cans and everything until this year. And now I do it this year and my roommates had me do it this year. So... Should I like... If I do it now does it matter? Like if we're...

INTERVIEWER: I guess wherever you are now...

KIM: Okay.

INTERVIEWER: ...how do you think it would stand?

KIM: I would put it as a three now...because we separate like a lot now.

We have anything from like any type of wine bottle, water bottle, milk jugs like everything separated.

INTERVIEWER: And that's from influence that your roommates have had on you?

KIM: Yeah. Both of my roommates are like extremely environmental savvy...and separate every single thing...where I before...was only separating cans."

Katie, a participant that did not identify as an environmentalist also explained that she recycled frequently. She reported, "Yeah, I do a lot more recycling now that I live at MSU because like at home I just do cans. We don't have recycling bins around us. It's like now I live

here I recycle all the time.” This showed that even though Katie did not identify as an environmentalist, she still could act in pro environmental ways. In this case, she was reported how her environment influenced her behavior. Ansel, another participant with a below average environmental identity score reported that she sorted trash all the time and could not think of a time she did not recycle. She said, “that’s a quick decision it’s something I’ve always done...so I just do it.”

In addition to frequently recycling aluminum and glass and sorting trash for recyclables, all interview participants described their recycling behavior as being an automatic and fast decision. Most participants mentioned recycling as being second nature and something they just do without putting much thought into it.

For instance, Ryan reported, “Recycle glass bottles or jars or aluminum cans it’s a quick decision I just do it. Sorted your trash to separate non-recyclable from recyclable materials also a quick decision it’s kind of second nature now.” Savannah also considered recycling second nature. “Recycling glass bottles or cans. I just do that automatically don’t even think about it so that’s a quick decision. Sorted your trash to separate non-recyclable and recyclable material. Again, that’s just automatically now.” Renee, a participant with a strong environmental identity reported that if she does not see a recycling bin anywhere close she will hold onto her recyclables until she finds a place to discard them. Renee said, “I sort my trash from non-recyclable to recyclable. I automatically recycle glass bottles or aluminum cans and carry them around until I find a place.”

The results showed that recycling became a norm for a variety of people with differing values and ideals about the environment. Recycling was an automatic behavior for all of the participants making it a behavior that was not solely dependent on ones’ identity. Based on what

the interview participants mentioned in their accounts, there were certain external factors that made recycling an automatic behavior. Theme two highlights how the physical environment influenced recycling.

Theme 2: The Physical Environment Makes Recycling Easy

I asked participants why behaviors were easy or difficult. All participants mentioned some type of physical environmental factor that made recycling a behavior that was easy and effortless. Being surrounded by a physical environment that supports pro-environmental behaviors influenced participants to automatically act in pro-environmental ways. All participants thought that being at a “Green” university made it easy to make the decision to recycle in a quick and effortless way. There were structural components available on campus and around Lansing and East Lansing that made it easier to recycle. For instance, the bins around campus and curbside recycling in Lansing were mentioned often.

Participants who did not consider the natural environment a key component to their self-concept still reported frequently and automatically recycling. In addition, participants like Katie and Kim reported recycling was an automatic action that required no thinking. Katie and Kim both attributed their recycling behavior to being a student at a “Green” university. Based on the number of references to college in Table 27, Katie and Kim had the most with 5 and 4 references respectively. They mentioned how easy it was to recycle all types of materials on campus. On campus, students have access to recycling bins even though they do not have access to them at home. For instance, being a college student at this university included access to recycling bins outside most classrooms on campus.

Katie, a freshman Education participant explained that she did more recycling now that she was a college student. She reported, “Yeah, I do a lot more recycling now that I live at

[college] because like at home I just do cans. We don't have recycling bins around us. It's like now I live here I recycle all the time." Katie explained that she had a "whole bag of water bottles in my room that I just like go and put in the little garbage can that will hold plastic. And then I like had all my papers from last semester in a bag and then I'll put these semester papers in it and then put it in a trash can."

Kim, when describing how her identity as a college student influenced her behaviors, she said, "...because on campus, they do like tons of different recycling type stuff. They have like different recycling bins in almost every single building." She attributed the accessibility of the recycling bins to her new and improved recycling behavior. Kim also mentioned that it was hard to miss the recycling bins because of they are brightly colored. Kim reported, And it'll [recycling bins] be bright colors so it like stands out from the trash."

Renee, a participant with a strong environmental identity also mentioned the accessibility of recycling bins on campus made her happy. She said, "So recycling is a big thing. I'm really happy that there are so many recycling bins everywhere, because I save things in my backpack. Like I have my juice from my combo and I stock it up in a big bag. And then like once a month I'll take it down to the ground floor and put it all in the bins and everything like that."

Table 27.

<i>Interview participant pseudonyms and number of references to college</i>	
Pseudonym	Number of College Recycling References
Kim	5
Katie	4
Olivia	3

Table 27 (Cont'd)

Ansel	1
Molly	1
Renee	0
Ryan	0
Savannah	0

There was also evidence that participants with strong environmental identities were also influenced by the presence of environmental structures making recycling easier. Olivia, a participant with a strong environmental attitude grew up in a rural area without curbside pick up. She said her involvement in an on campus organization and Lansing's curbside recycling pick up made it easier for her to recycle.

"Sorted your trash to separate non-recyclables from recyclable materials that's a fast one because it has become such a habit. Well, I guess when I was younger we did try to recycle but it wasn't, you know, just like enough like automatically. But I think that's because we lived in like a rural area where it wasn't as common to do that. But now like in RISE that started me out but now that like I live in Lansing and we have like curbside pick-up they give you a list of like what you can and cannot recycle and because now I'm learning about it more like I can I know that I can recycle things like I didn't think were recyclable before because some people don't just accept them which really sucks but yeah things like that."

Recycling was easy because the physical environment made it convenient. I originally predicted environmental identity would have a bigger impact on recycling behavior and the type of thinking that went into the act of recycling. The interview data showed that environmental identity was not the most important component influencing the use of System 1 thinking when recycling. The interview data actually showed that the physical environment influenced thinking more than one's environmental identity. This result has many impacts on how environmental educators organize environments to encourage pro-environmental behavior.

Theme 3: Recycling Elicits Emotions

Recycling initiated emotions. Even though participants were not asked about their emotions, participants still mentioned feeling negative emotions when not recycling. Four of the eight participants made references to a negative emotion in regard to not recycling. Participants reported negative emotions in regard to watching others not recycling. For instance, when Savannah, a participant with an above average environmental identity score explained she still recycled the aluminum cans that could not be recycled at the grocery store. She explained that she would do this because she would not feel comfortable throwing away items that were made of recyclable materials. She stated,

“...we still recycle them like I still recycle them I wouldn't feel comfortable throwing it away. And like water bottles and stuff like I have a big bag in my room where I put all my water bottles when I have used them or if I use them instead of like one of those and stuff. So that always we have a part on our kitchen counter we have cleaned it out and we have

all our recyclables.”

Participants with weak environmental identities also expressed negative emotions when not recycling. For instance, Kim, a participant with a habit of recycling aluminum cans and glass bottles shared a story about a visit with her boyfriend in Texas. She described a time when she wanted to recycle an aluminum can in Texas and how it made her feel when she could not recycle it. Kim explained the situation below.

“The first time I went down to Texas, I didn’t know that like they didn’t recycle them. And I like rinsed my can out and I asked my boyfriend like where to set it because like I was staying with him. And he was like, ‘We don’t return them here.’ I was like, “Okay. Well, you don’t return them at all?” He was like, “You don’t get any money back. You can just throw it away.” I was like, “You don’t recycle it at all?” He was like, “No. Just go ahead and throw it away.” So he made me throw it away. But I felt so weird about it...because like it like doesn’t... I don’t know. It didn’t feel right because I don’t do it here now whatsoever because my roommates either. And then especially, I was like, “It takes up all your room in your trash too.” Like we would go like one whole day and you have to empty your trash because it was full of cans or jugs or any type of jar or anything. So like... I don’t know. I thought it was a pain in the butt. I didn’t like not recycling them. So that’s something honestly I would still probably keep doing. I don’t like...I don’t like throwing them away. One of my friends that lives here in Michigan... Her mom is from England and she doesn’t

recycle them either because it's the same thing. And it bothers the crap out of me.”

This account showed that the act of recycling had become a habit, a characteristic of System 1 thinking for Kim that when she was unable to recycle aluminum cans she had a negative emotional response. She stated that felt weird and that it was awkward not recycling aluminum cans.

Another participant shared that she felt emotional when others did not recycle. Molly, a participant with a strong, above average environmental identity discussed how angry and worked up she gets when she sees others throwing plastic in the trashcan. Molly described her emotions below. Molly said,

“I get really, really, I wouldn't say angry, but I get very worked up when I see people throw away plastic. My favorite is when I see people throw away a plastic water bottle when there is a recycling receptacle within arm's reach. It just, it doesn't make sense. It makes me get really worked up. And so when I talk to people I try and stay calm but it's hard to talk to people about something that you care so deeply about and have them not care. Especially when you know it affects them. But as for how my identity's shaped it. I feel like it just, I'm really passionate about it. And I can't hide that. I mean sometimes I can be a little bit more cool and collected but in general I'm very up-front. I'm very blunt. I don't shy away from telling people that I think that they are wrong and that I think they need to change. Or, I try not to single people out but in general, I'm just like

“We need to change. This is unsustainable.” But yeah. I try to be nice about it. Try.”

One important characteristic of System 1 thinking is emotion. According to Kahneman (2011), emotional responses stimulate intuitive and fast decisions. I did not predict that participants would feel emotional about their decision to recycle. However, negative emotions were reported by half of the interview participants including participants with weak environmental identities. When participants did not recycle and when watching others throw away recyclables they mentioned having negative emotions such as anger, sadness, and disappointment. Based on the interview results, recycling behavior had become a habit with emotional significance for these participants and in turn had become an action that was also important to their daily lives. The results show that feeling negative emotions when not recycling influenced individuals to recycle more often. This result shows that eliciting emotions causes people to act in pro-environmental ways.

Theme 4: College Students Aren't Political

Voting and activism are behaviors that require more effort for participation. Activism is known as a high cost behavior because it requires time, research, and taking a stand for a cause. My hypothesis was that participants who care about the environment would participate in activism type behaviors more than participants with weak environmental identities. According to Clayton (2003) environmental identity included the values and ideals one has for the natural environment. She predicted that individuals with strong environmental identities and a strong connection to the natural environment would more likely be activists for the environment.

Most participants felt that participating in political activities was effortful and required System 2 thinking. Participants mentioned that it took effort, time, energy, and the decisions

required research. Many participants reported not wanting to put the effort into researching the voting record of politicians. A few said they were turned off by politics. Most said, they would not put time into researching this information.

Participants with a high environmental identity score mentioned that it took time and research to determine who to vote for. For instance, Ryan said that voting for a politician would be a “slow decision because maybe the politician has an opinion about some other issue that you’re passionate about that you don’t agree with besides the environment.” Molly said, “Written to your elected officials is definitely a slow decision because I feel like when you write to a politician especially, you have to be well versed in what you’re writing about. Voted for a politician due to his or her record, slow decision, like you do a lot of research.”

Like Molly and Ryan, Olivia stated that it would take time and effort to express her opinions about environmental issues making it a slow decision. She stated, “I’m not going to take time out of my day to really do that.” Olivia did say she participated in online petitions. She said, “Although I will say if there’s like one of those things that I keep typing or like e-mail like you’re a good zip code and everything then it sends it like to your Senator or whatever, your representative, I do that it’s like if it comes across, you know, what I’m doing.”

In high school, Olivia was active in politics, but decided not to continue her participation because she thought it really didn’t make a difference. When asked to describe a behavior that she placed in the slow pile that at one time she made the decision quickly, Olivia described her political involvement.

“I think this one the written to your elected officials. I use to do that a lot when I was working with like those political organizations but that was when I was in high school and I had more time to do stuff like that. So

now it's just like it's slow for me I do not like doing it. I don't really think it makes a huge difference. I'm probably wrong in that sense. I don't really like politics at all. It takes a lot of time to put together like a pretty ... I'm kind of a little bit a perfectionist so it takes a little bit of time to like really get my ideas out there. Yeah, it's just not the easiest thing.”

However, some participants with a strong environmental identity were active in other forms of political activism. They reported being politically active by attending government-sponsored meetings about environmental issues, protesting companies with poor environmental records, and working on political campaigns.

For instance, Molly, a Sustainability student with a strong environmental identity, reported infrequently writing to elected officials, but she did report being an activist for other environmental issues and attended open meetings about conservation and environmental issues. She also organized a March Against Monsanto, a protest against the food company Monsanto in her hometown. Molly described March Against Monsanto, “It is a worldwide march every year. It's been happening for a while. Where people will come together and they will march against genetically modified organisms. But particularly Monsanto and the influence it has. I am staunchly against Monsanto. I think they should be shut down. I think everything they do is evil and I don't like them at all.”

Molly described her involvement:

“But I helped to set up last year's march back in my hometown. And that helped me to connect to the community there a little bit for sure. Back at home my mom and I had a, like a share in the co-op. And so you meet a lot of good people that way. Because there's, it's really

nice to be surrounded by like-minded people who care. So that was definitely, that got me a little bit more into the local food movement. Back when I was in high school, we would go to the food co-op. And I would be like, all of this food. And it's from local sources. And it kind of got me thinking, where does food come from? What am I eating? So it kind of woke me up a little bit."

When asked what other behaviors she participated in, she added attending meetings about environmental issues. Molly added going to meetings as a behavior she participated in as an environmentalist. Molly said, "I don't I've only written to an elected official once. But I've gone to environmental, or meetings about environmental issues where the public can speak. So I've spoken with elected officials, I've never..." Molly reported she recently attended a Natural Resources meeting where they were discussing the fate of an invasive species.

The original hypothesis was that participants with strong environmental identities would participate in activism behaviors more often. Participants with strong environmental identities did report participating in activism type behaviors more often, but they did so sporadically. Many participants thought voting and being political was a waste of time. This result demonstrates that these college participants with strong environmental identities may not vote or get active in politics, but they were more likely to try other types of activism behaviors. This result upholds my original hypothesis that those with strong environmental identities were more active in activism type behaviors. This shows that other factors like social interactions influence political action more than environmental identity.

CHAPTER 5—DISCUSSION

Simply caring about the environment is not as important as other factors in predicting pro-environmental behavior. Environmental identity coupled with external factors such as convenience, social influence and family values make a larger impact on acting in pro-environmental ways.

Quantitative Results Summary

Participants (N= 299) completed three surveys including the Environmental Identity Scale, the Environmentally Responsible Behaviors Index, and the Decision Making Questionnaire. The data from these surveys was then analyzed using correlation.

Based on the survey results, environmental identity and participating in environmental behaviors frequently was significantly correlated in the positive direction. In other words, if a participant had a high score on the environmental identity scale the participant was more likely to participate in environmental behaviors such as buying products from recycled materials and taking courses about environmental issues. According to the survey data, when deciding to recycle, an individual's environmental identity was significantly correlated with System 1, fast thinking. Meaning that if a participant had a strong environmental identity they were more likely to make the decision to recycle using fast, System 1 thinking.

Qualitative Results Summary

Eight semi-structured interviews were done with participants from both the Education and Sustainability groups. Participants were chosen based on their survey results to create a cross section of environmental identity levels. Unlike the survey data, the interview data showed environmental identity did not make a difference in how often one recycled. All participants stated they recycled frequently and recycling was an automatic and habitual behavior; meaning

they used System 1 thinking. Most participants mentioned recycling was easy because the physical environment made it convenient.

Despite environmental identity score, all interview participants mentioned that their family made a difference in their behavior. Participants were likely to say their parents or grandparents influenced their current participation in recycling. Participants with strong environmental identities, scores higher than 96, were more likely to value the environment and prioritize protecting it. Participants with a weak environmental identity, a score of 56 or less (score range 24-120), were likely to prioritize other issues they believed were more important. However, they were directly influenced to act in pro-environmental ways by others.

Convenience and the Physical Environment Influence Recycling Behavior

Environmental identity is not the only driving force behind pro-environmental behavior. Participants recycled more often when it was convenient. They reported that recycling bins outside classrooms and around campus made recycling easy. Participants reported that recycling bins around campus eliminated barriers such as lack of time that normally stands in the way of acting in pro-environmental ways. The physical environment makes recycling an unconscious, automatic behavior. Environmental behaviors have become seemingly unconscious behaviors leading to fast thinking and automaticity (Heimlich et al., 2014; Kahneman, 2011). For instance, Kim, a participant with a weak environmental identity, reported recycling on campus was easy and convenient. Kim said:

“Sorted your trash, separate non-recyclable from recyclable material is now a quick decision. That would be because now I do that without thinking because my roommates and we have that completely separated. And, like I said, on campus it’s really easy to do that without thinking.

Probably just the random things around Michigan State. Like instead of... Like I... I'm addicted to drinking a thing of Diet Pepsi or Diet Coke in the morning. Like it's terrible for you but I do. So I usually have one... And usually on your way out from almost every single classroom, they have the recycle bins right by it. And one of them included by every one of them is specifically for like cans. So that actually does too because instead... Like I don't just want to carry it around and I don't want it spilling in my bag or something because it's not like a twist top."

On campus, there are many places for participants to recycle materials. There are signs and bins everywhere. *See Figure 5 for pictures of the recycling bins on campus.* These structures reduce the amount of thinking involved in making the decision to recycle, keep System 1 working automatically and allow System 2 to work in a "comfortable low effort mode" (Kahneman, 2011, p. 24). This means the slow, System 2 thinking structure does not need to be activated to make decisions.

The way an environment is designed can encourage recycling behaviors. "If endorsed by System 2, impressions and intuitions supported by System 1 turn into beliefs and impulses and then into voluntary action" (Kahneman, 2011, p. 24). Similar to the work done in behavioral economics, if the environment is designed in such a way to reduce the dependence on System 2 thinking, the physical environment can encourage the transition of pro-environmental behaviors into intuitions, impulses, and habits. In the retirement savings study conducted by Thaler & Benartzi (2004), the participants who were automatically enrolled in a retirement savings program where a percentage of their income was repeatedly taken out for savings saved more than the people not enrolled in the program. The automatic enrollment reduced the need for self-

control and reduced the consequences of procrastination and ultimately did not activate System 2 thinking. The recycling bins around campus also reduce the need for self-control, activate System 1 thinking, and reduce the likelihood of throwing recyclables away.



Figure 5. Recycling bins on campus.

The current study provides additional information about how environmental structures can influence behaviors without changing a person's environmental identity. To look into this further, I could interview people who live in cities with an established infrastructure that encourages pro-environmental behavior such as biking instead of driving. For instance, I would ask Amsterdam residents why they bike and whether they would still bike without their current infrastructure. The results could potentially strengthen my argument that environmental identity is not the only factor affecting pro-environmental behavior. Other factors, such as convenience, physical environment and low cost could be attributed as well.

In addition, I could extend the current study on recycling behavior. I could survey the participants again in five years, asking if they have continued recycling, and if the structures within their community made it more or less convenient. I could further explore the relationship between environmental identity and recycling behaviors in places where recycling is more difficult. I predict someone with a weak environmental identity, like Kim, will discontinue her recycling behavior in Texas with her boyfriend. Texas does not have the bottle bill, and based on her interview, her boyfriend does not recycle.

Family Values and Social Norms Influence Recycling Behavior

Social interactions are important catalysts for participating in environmentally responsible ways (Heberlein, 2012). In a recent study, environmental identity development was found to be directly related to social interactions with peers (Riggs Stapleton, 2015). In the current study, participants attributed their pro-environmental behaviors to their families and social communities. For instance, participants with strong environmental identities attributed their concern for the environment to their moral obligation to make the Earth better than they had found it. Participants with weak environmental identities were more likely to have religious and conservative values, placing less value on the environment. This result aligns with Clayton and Opatow (2003), which show social factors such as political position, religious influences and moral values drive environmentalism.

The results of the existing study show recycling behavior is influenced by family values and community norms. For college students like Kim and Ansel, both with weak environmental identities and infrequent participation, social interactions with family and roommates influenced their recycling behavior in positive ways. For instance, Kim mentioned she was encouraged by her roommates to recycle additional materials, while Ansel felt her grandparents had a positive

impact on her connection with the natural environment. Chawla (1999) found an important component to attaining an environmentalist career was the pro-environmental values held by family members. Other participants, like Olivia, an environmentalist, attributed her attitude toward the environment to her membership in the Environmental Science and Sustainability cohort. Often, participants with strong identities reported informing others about their environmental concerns and actions. The interview data showed participants with a strong environmental identity viewed themselves as educators or “social reformers” (Kempton & Holland, 2003, p. 318). These “social reformers” found it was important to convince others to change behaviors. According to Nielsen & Ellington (1983), city blocks with a curbside recycling leader were more likely to have more recycling participation than blocks that did not have such a program. Based on the results of the current study, it is clear that environmental identity is socially constructed.

Social norms can also elicit strong emotions. Participants felt upset when throwing away recyclable materials and emotional when they saw others throw away recyclable materials. For instance, Savannah reported “...we still recycle them [aluminum cans] like I still recycle them I wouldn’t feel comfortable throwing it away.”

Participants also became irritated when watching others throw away recyclable materials. Molly stated:

“I get really, really, I wouldn’t say angry, but I get very worked up when I see people throw away plastic. My favorite is when I see people throw away a plastic water bottle when there is a recycling receptacle within arm’s reach. It just, it doesn’t make sense. It makes me get really worked up.”

Participants with weaker environmental identities also mentioned emotional responses to not recycling materials that have been recycled frequently in the past. Kim, a participant with a weak environmental identity reported feeling uncomfortable when not recycling during her stay in Texas. As she described the experience, she mentioned feeling weird about not recycling aluminum cans. She explained, when asking her boyfriend about recycling the cans, “You don’t recycle it at all?” He was like, ‘No. Just go ahead and throw it away.’ So he made me throw it away. But I felt so weird about it...because like it like doesn’t... I don’t know. It didn’t feel right because I recycle it here now because of my roommates.” Thus, even participants with a weaker connection to the environment still elicited emotional response to environmentally irresponsible behavior.

This emotional response could be a part of the internal sanctions that go along with the recycling norm. Internal sanctions are a form of positive and negative reinforcement that occur inside one’s own head allowing one to adhere to the social norms without the help of others (Heberlein, 2012). For example, when someone recycles they feel good about what they have done. They feel as if their actions fit into the social norm, which persists even when others are not sanctioning behavior through punishments and rewards (Heberlein, 2012). This finding shows that social norms influence individual behavior by activating internal sanctions, emotional responses, and in turn System 1, fast thinking.

To continue studying the link between emotions and environmental behavior, I would further explore the emotional drive behind recycling. In the current study, I did not ask explicit questions about emotions, rather participants volunteered the emotions felt when not recycling or watching others not recycle.

Summary

These findings show that taking advantage of natural resources and understanding their importance is not as strongly linked to pro-environmental behavior as others may have previously thought. There are factors trumping environmental identity, such as the physical surroundings, moral values and social norms that seem to have a stronger influence and a more lasting effect. Simply caring about the environment is not enough.

CHAPTER 6—CONCLUSIONS AND IMPLICATIONS

Although there is a relationship between environmental identity and participating in environmentally responsible behavior (confirming Clayton's (2003) finding that considering the natural world as a part of one's self-concept does influence the actions one takes for the environment.), when it comes to recycling, environmental identity did not have as strong of an influence. Structures such as conveniently located recycling bins, social norms, values, and familial relationships influenced participation in environmental behaviors more than solely caring about the environment.

Recycling was considered an easy and automatic behavior for all participants. Despite one's environmental identity score, the majority of participants reported recycling often. Although quantitative data showed a correlation between environmental identity and the decision to recycle, interview data evidenced a strong environmental identity did not influence how easy participants perceived recycling to be. So, an environmental mindset, such as deciding to go into an environmental field, did not affect the type of thinking that went into recycling. Both groups considered recycling an effortless act.

As no surprise, when made convenient, recycling was an easy decision to make. In their study exploring the relationship between attitudes toward recycling and recycling behavior, Guagnano, Stern, & Dietz (1995) investigated how having curbside recycling influenced the strength of the attitude-behavior relationship for recycling. They found that having a recycling bin had a significant effect on recycling behavior. Bins made it cheaper to recycle and increased awareness of social and environmental consequences (Guagnano et al., 1995). Giving out recycling bins and making recycling easy actually increases the social desirability to recycle and acts to "signal a social norm for recycling" (Guagnano et al., 1995, p. 714; Heberlein, 2012).

The social components of recycling influenced the participants in this study as well. They attributed recycling behavior to others, showing that as long as there are social norms in place, one may not need an environmental identity to act in a pro-environmental way. Over time, recycling has become a norm for many of the participants in this study. The development of the norm was and continues to be influenced by a variety of structural fixes (Heberlein, 2012) including curbside recycling programs, cash incentives for returning aluminum cans and glass bottles, and positioning recycling bins in convenient locations. These physical structures encourage individuals to recycle before they think about throwing items in the trash.

Emotions also played a role in recycling. According to the quantitative and qualitative data analysis, System 1 was responsible for recycling behavior. The decision to recycle was fast, effortless, and emotional for most participants. Participants were likely to have a negative emotional response to witnessing others not recycling. Based on the interviews, participants felt awkward, angry, and uncomfortable emotionally if they were unable to recycle or if they witnessed someone throwing away recyclables. This emotional response could be a part of the internal sanctions that go along with the recycling norm.

Implications for Research and Practice

One goal of environmental education is to encourage participation in pro-environmental behaviors. Based on the results of this study, environmental educators must consider how the physical environment and social norms influence individual behavior. Educators should use incentives to reinforce positive behaviors and punish non-environmental acts. These rewards and punishments will create social norms and influence the decisions people make on a daily basis. One key take away-make it easy and convenient. In turn, social norms of environmentally conscious behavior will be created, influencing behavior.

Participants with weak environmental identities were influenced by others. This is an important result to consider when thinking about “green” initiatives in schools and college campuses. This finding affects how we educate students about acting in pro-environmental ways. Educators should consider teaching their students how to tactfully discuss environmental issues with people of varying opinions. Even though, participants in this study did not change their ideals or environmental identity, they changed their behavior because others encouraged them to act in particular ways.

Using Kahneman’s (2011) System 1 and System 2 thinking framework has promise for exploring how people act toward the environment. System 1 and System 2 thinking is an important dichotomy to consider when analyzing acquisition and learning (Gee, 1998). System 1 is based on acquisition of knowledge by being in the world and observing. It is linked to statistical and observational learning. As one observes the patterns of the world one unconsciously acts in the way that upholds the patterns of their environment. System 2 is more about logic and reasoning about the world. It includes conscious thought and effort and in turn learning (Gee, 1998).

Based on the findings in this study, to encourage environmentally responsible behaviors, one must consider tapping into the unconscious, System 1. Manipulating the physical surroundings to make recycling convenient activates System 1 thinking. Recycling is a behavior that can be acquired by watching others, is influenced by the physical environment and is regulated by government policies (“Bottle Bill” including cash incentives).

Another environmental behavior I believe can be acquired is biking instead of driving. This behavior is dependent on the physical environment and social norms. For instance, in the Netherlands, specifically Amsterdam people ride their bicycles everywhere. Using a bicycle as a

form of transportation is a pro-environmental behavior, but the people in the Netherlands ride their bikes for other reasons. For instance, the Netherlands is flat making it easy to bike. There are physical structures in place to make biking easy including bike lanes, narrow roads and a variety of places to park bikes conveniently and safely. Biking is the social norm in the Netherlands. This is a behavior that is acquired by living there. Children, adults and the elderly bike to get where they want to go. As part of the social norm, if you live in the Netherlands, you buy a bike and plan to bike around instead of drive a car. It's actually very difficult and expensive to drive in the Netherlands making biking even more desirable. Perhaps, if the United States established the same biking infrastructure as the Netherlands, it would be more socially acceptable to bike instead of drive.

Other environmental behaviors may not be easily acquired but include conscious effort and learning. For instance, activism behaviors and some consumerism behaviors involve learning about the issues and the brands in order to act. Those with a strong environmental identity were more likely to participate in activism and consumerism behaviors (Holland & Kempton, 2003). Being an activist and switching brands are two behaviors requiring research, logic and financial sacrifice. It may take a person with a strong conviction to the natural environment to make personal sacrifices for the Earth. I believe having a strong environmental identity would not be sufficient enough to participate in some pro-environmental behaviors. For instance, I would consider myself an environmentalist with a strong environmental identity. I'm also a new mom. There are many decisions to make when a new baby comes into the world. One decision I had to make involved the type of diapers I would use. I made the decision not to use cloth diapers. I knew cloth diapers were the most environmentally friendly choice and in the long run the cheapest option for my family. However, the convenience factor was low. Cloth diapering

involves dealing with dirty diapers, new cleaning processes and keeping up with the laundry. I also did not become a part of a group of mothers who decided to use cloth diapers. As a working mom, I did not try to carve out the time necessary to keep up with cloth diapers. So, I decided on the convenient anti-environmental option of plastic disposable diapers. There were other influences like time, energy, family lifestyle, etc that impacted my decision more than my strong environmental identity.

With this being said, in the future I would add to the Decision Making Questionnaire. I would add behaviors such as public transportation and choosing brands based on environmental practices. Public transportation added to the questionnaire would allow me to test the theory that easy and convenient acts will be done by all participants. In addition, I would like to explore the type of thinking that is involved in more difficult and less convenient environmental behaviors. For example, I hypothesize that switching brands because of a company's environmental record would be done more frequently by those with a strong environmental identity, tapping into System 2 thinking. However, other factors influencing behavior would still include group memberships, social interactions, family values and community norms.

APPENDICES

APPENDIX A

Survey Instruments

Name:

MSU email address: _____@msu.edu

Gender (circle one): Male Female I prefer not to share

Age:

Major:

Academic Standing (circle one): Freshman Sophomore Junior Senior Senior+

Please check the statement that best reflects the area where you spent the majority of your childhood (from 5-12).

_____ **Rural area on a farm** _____ **Rural area but not a farm**
 _____ **Town less than 10,000** _____ **City of 10,000 to 49,999**
 _____ **City of 50,000 to 100,000** _____ **City larger than 100,000**

<i>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. Please <u>circle</u> the most appropriate response:</i>	1= Strongly Disagree	2= Disagree	3= Neutral	4= Agree	5= Strongly Agree
1. I spend a lot of time in natural settings (woods, mountains, desert, lakes, ocean).	1	2	3	4	5
2. Engaging in environmental behaviors is important to me. <i>Examples of environmental behaviors include recycling, gardening, engaging others in conversations about the environment, buying recycled products, etc.</i>	1	2	3	4	5
3. I think of myself as a part of nature, not separate from it.	1	2	3	4	5

4. If I had enough time or money, I would certainly devote some of it to working for environmental causes. <i>Environmental causes could include: roadside clean up, educating the public about water quality, giving money to the Nature Conservancy, supporting an environmental campaign, etc.</i>	1	2	3	4	5
5. When I am upset or stressed, I can feel better by spending some time outdoors “experiencing and connecting with nature.”	1	2	3	4	5
6. Living near wildlife is important to me; I would not want to live in a city all the time.	1	2	3	4	5
7. I have a lot in common with environmentalists as a group. <i>The term environmentalist means a person concerned about the natural environment and is willing to take action for the environment.</i>	1	2	3	4	5
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.	1	2	3	4	5
9. I feel that I have a lot in common with other animal species. <i>Other animal species include: dogs, cats, horses, fish, etc...</i>	1	2	3	4	5
10. My own interests usually seem to coincide with the position advocated by environmentalists. <i>The term environmentalist means a person concerned about the natural environment and is willing to take action for the environment.</i>	1	2	3	4	5
11. Being a part of the ecosystem is an important part of who I am. <i>Ecosystems are a system involving the interactions between a community of living organisms in a particular area and its nonliving environment</i>	1	2	3	4	5
12. Behaving responsibly toward the earth – living a sustainable lifestyle – is a part of my moral code.	1	2	3	4	5

13. Learning about the natural world should be an important part of every child's upbringing.	1	2	3	4	5										
14. In general, being part of the natural world is an important part of my self-image.	1	2	3	4	5										
15. 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.	1	2	3	4	5										
16. I really enjoy camping and hiking outdoors.	1	2	3	4	5										
17. Sometimes I feel like parts of nature – certain trees, or storms, or mountains – have a personality of their own.	1	2	3	4	5										
18. 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.	1	2	3	4	5										
19. I take pride in the fact that I could survive outdoors on my own for a few days.	1	2	3	4	5										
20. I have never seen a work of art that is as beautiful as a work of nature, like a sunset or a mountain range.	1	2	3	4	5										
21. I like to garden.	1	2	3	4	5										
22. I feel that I receive spiritual sustenance from nature.	1	2	3	4	5										
23. I keep mementos from the outdoors in my room, like shells or rocks or feathers.	1	2	3	4	5										
24. I feel I have roots to a particular geographic location that had a significant impact on my development.	1	2	3	4	5										
<i>Using a scale of 1 (rarely) to 5 (usually), please rate the extent to which you participate in the following behaviors or practices.</i> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;"><i>Rarely (10% or the time)</i></td> <td style="text-align: center;"><i>Occasionally (30% of the time)</i></td> <td style="text-align: center;"><i>Sometimes (50% of the time)</i></td> <td style="text-align: center;"><i>Frequently (70% of the time)</i></td> <td style="text-align: center;"><i>Usually (90% of the time)</i></td> </tr> </table>						1	2	3	4	5	<i>Rarely (10% or the time)</i>	<i>Occasionally (30% of the time)</i>	<i>Sometimes (50% of the time)</i>	<i>Frequently (70% of the time)</i>	<i>Usually (90% of the time)</i>
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<i>Rarely (10% or the time)</i>	<i>Occasionally (30% of the time)</i>	<i>Sometimes (50% of the time)</i>	<i>Frequently (70% of the time)</i>	<i>Usually (90% of the time)</i>											
HOW OFTEN HAVE YOU...	1 Rarely	2 Occasionally	3 Sometimes	4 Frequently	5 Usually										
25. Used biodegradable, no phosphate soaps or detergents	1	2	3	4	5										
26. Read labels on products to see if the contents were environmentally safe	1	2	3	4	5										

27. Avoided buying products in aerosol containers	1	2	3	4	5
28. Purchased a product because it was packaged in reusable or recyclable containers	1	2	3	4	5
29. Switched from one brand to another due to concern for the environment	1	2	3	4	5
30. Stopped buying from a company that showed a disregard for the environment	1	2	3	4	5
31. Avoided restaurants that put takeout food in Styrofoam™ containers	1	2	3	4	5
32. Bought products made from recycled material	1	2	3	4	5
33. Cut down on the use of your car by using public transportation, car pooling, etc.	1	2	3	4	5
34. Written to your elected officials expressing your opinions on environmental problems	1	2	3	4	5
35. Investigated your elected officials' voting record on environmental issues	1	2	3	4	5
36. Used legal measures to stop events you thought would damage the environment	1	2	3	4	5
37. Reported environmental crimes to the proper authorities	1	2	3	4	5
38. Voted for a politician due to his or her record on protecting the environment	1	2	3	4	5
39. Donated money or paid membership dues to a conservation organization	1	2	3	4	5
40. Joined in community cleanup efforts	1	2	3	4	5
41. Watched TV programs about environmental problems	1	2	3	4	5
42. Talked to others about environmental issues	1	2	3	4	5
43. Read publication that focuses on environmental issues	1	2	3	4	5
44. Tried to learn what you can do to help solve environmental issues	1	2	3	4	5
45. Enrolled in a course for the sole purpose of learning more about environmental issues	1	2	3	4	5
46. Recycled glass bottles or jars or aluminum cans	1	2	3	4	5
47. Recycled old newspapers	1	2	3	4	5
48. Sorted your trash to separate non-recyclable from recyclable material	1	2	3	4	5
49. Encouraged others to take action for the natural environment	1	2	3	4	5
50. Avoided buying products with excessive packaging	1	2	3	4	5

<i>Using a scale of 1 to 5, please rate the degree to which you fall along the continuum between slow (1) and fast (5) decision-making. <u>Remember: One answer is not better than the other.</u> Please <u>circle</u> the most appropriate response based on your recycling practice.</i>	1= Very Slow	2= Slow	3= Neutral	4= Fast	5= Very Fast
51. To what degree is your decision-making about recycling done slow or fast? Slow: If you slowly come to the decision to recycle, you are actively making that decision. The decision is not automatic and takes several steps to come to the final decision to recycle. You seek out information about recycling before determining it's the best option for you. Fast: If you quickly come to the decision to recycle, you don't have to actively think about recycling. You don't seek out information about recycling you just recycle.	1	2	3	4	5
<i>Using a scale of 1 to 5, please rate the degree to which you fall along the continuum between effortful (1) and effortless (5) decision-making. <u>Remember: One answer is not better than the other.</u> Please <u>circle</u> the most appropriate response based on your recycling practice.</i>	1= Very Effortful	2= Effortful	3= Neutral	4= Effortless	5= Very Effortless
52. To what degree is your decision-making about recycling effortful or effortless? Effortful: Recycling is effortful if it requires a lot of thought and energy to recycle regularly. It is a more complex decision to recycle. It may require research and time to make the decision. Effortless: Recycling is effortless if it does not require much thought or energy to recycle regularly. It is an easy decision to recycle.	1	2	3	4	5
<i>Using a scale of 1 to 5, please rate the degree to which you fall along the continuum between conscious and intentional (1) and automatic (5) decision-making. <u>Remember: One answer is not better than the other.</u> Please <u>circle</u> the most appropriate response based on your recycling practice.</i>	1= Very Conscious and Intentional	2= Conscious and Intentional	3= Neutral	4= Automatic	5= Very Automatic
53. To what degree is your decision-making about recycling conscious and intentional or automatic? Conscious and Intentional: Recycling is conscious and intentional if you have to deliberately think about the act. You put time into thinking about why you recycle and what you recycle. Automatic: Recycling is automatic if you do not put much additional thought into the act of recycling. You do it without thinking about why you do it. Recycling is just a habit.	1	2	3	4	5

Using a scale of 1 to 5, please rate the degree to which your decision making about recycling falls along the continuum between affecting thinking capacity (1) and not affecting thinking capacity (5). <u>Remember: One answer is not better than the other.</u> Please circle the most appropriate response based on your recycling practice.	1= Very Much Does Affect Thinking Capacity	2= Affects Thinking Capacity	3= Neutral	4= Does Not Affect	5= Very Much Does Not Affect Thinking Capacity
54. To what degree is your decision-making about recycling affect your thinking capacity? Affects Thinking Capacity: If your decision to recycle affects your thinking capacity, then the act of recycling affects your ability to complete other tasks. If you cannot decide to recycle while thinking about other things such as your math homework, then your thinking capacity is affected by the decision to recycle. You cannot complete simple tasks while deciding to recycle. Not Affect Thinking Capacity: If you recycle without the decision affecting your thinking capacity, then the act of recycling does not affect your ability to complete other tasks. You can think about or do other things while deciding to recycle. You can complete simple tasks while deciding to recycle.	1	2	3	4	5
Using a scale of 1 to 5, please rate the degree to which you fall along the continuum between skeptical (1) and certain (5) about your decision to recycle. <u>Remember: One answer is not better than the other.</u> Please circle the most appropriate response based on your recycling practice.	1= Very Skeptical	2= Skeptical	3= Neutral	4= Certain	5= Very Certain
55. To what degree are you skeptical or certain about your decision to recycle? Skeptical: If you are skeptical about your decision to recycle, you are likely to be more critical about the overall benefits of recycling. This doesn't mean you don't recycle, it means you may research and consider alternatives. For instance, you may decide to consume less disposable materials rather than only recycling. Certain: If you are certain about your decision to recycle, you do it because a recycling bin is there or because you have always recycled. You don't think twice about recycling, you just do it. You don't seek out information about the benefits and consequences of recycling.	1	2	3	4	5
Using a scale of 1 to 5, please rate the degree to which you fall along the continuum between neutral/no emotions (1) and emotional (5) about your decision to recycle. <u>Remember: One answer is not better than the other.</u> Please circle the most appropriate response based on your recycling practice.	1= Very Neutral	2= Neutral	3= Neither	4= Emotional	5= Very Emotional

56. To what degree is your decision-making about recycling neutral or emotional?	1	2	3	4	5
Neutral/No Emotions: If recycling does not elicit any emotions, you are neutral about the act and may be more likely to consider alternatives to recycling. You may think there may be other ways to help the natural environment other than recycling. You may be willing to try other practices instead of or in addition to recycling. Emotional: If recycling elicits emotions, you are likely to feel strong positive or negative emotions about the act of recycling. You may feel angry if a close friend or family member does not recycle a plastic milk jug in your presence. Since you feel strongly about the act of recycling you may not seek out information about alternatives to recycling.					

APPENDIX B

Interview Protocol

Research Question 1: *What is the association between environmental identity and pro-environmental behavior?*

Identity

1. List five to ten answers to the question Who am I? (your identity) (paper and pencil) As you list your answers, please also verbalize what you write.
2. What environmental actions do you take? Rank them with number 1 having the most effect. (paper and pencil) As you list your answers, please also verbalize what you write. With number 1 being the action that produces the most environmental effect.

Natural Environment Interactions

3. As a child, how often did you spend time in the natural environment?
4. Describe your experiences in the natural environment.
5. How often do you spend time in the natural environment now?
Describe your experiences in the natural environment.
6. Describe how the natural environment fits into your identity.

Behaviors

7. Rate your involvement in the following behaviors on a 1 (infrequently)-5 (frequently) scale:
Use the blank cards provided to add other behaviors.

See the card sort question.

- Recycling,
 - Avoided buying products with excessive packaging.
 - Recycled glass bottles or jars or aluminum cans.
 - Sorted your trash to separate non-recyclables from recyclable materials.
- Activism,
 - Written to your elected officials expressing your opinions on environmental problems.
 - Voted for a politician due to his or her record on protecting the environment.
 - Joined in community cleanup efforts.
 - Donated money or paid membership dues to a conservation organization.
- Consumerism,
 - Cut down on the use of your car by using public transportation, car pooling, etc.,
 - Bought products made from recycled materials.
 - Switched from one brand to another due to concern for the environment.
 - Read labels on products to see if the contents were environmentally safe.
- Education

- Enrolled in courses for the sole purpose of learning more about environmental issues.
- Watched TV programs about environmental problems.
- Talked to others about environmental issues.

8. How important is it for you to live a sustainable lifestyle?

9. Which of these behaviors do you wish you could do more often?

10. Why is it difficult to participate in those behaviors? What barriers are in your way?

Social Influences/Group Membership

11. What impacts do social interactions (parents, roommate, significant other, friends) have in your choice to participate in recycling, consumerism, activism, education or other pro-environmental behaviors?

12. Describe a time when a social interaction impacted your recycling, activism, consumerism, education or other environmental behavior in some way. (positively or ne

13. How has your membership in a group or community influenced your environmental behavior?

14. Describe the community and your participation.

How do you influence others' behaviors?

How is your influence on others' behaviors connected to your identity as an environmentalist or not an environmentalist?

Research Question 2: *How does environmental identity influence how one makes decisions about the environment?*

- Recycling,
 - Avoided buying products with excessive packaging.
 - Recycled glass bottles or jars or aluminum cans.
 - Sorted your trash to separate non-recyclables from recyclable materials.
- Activism,
 - Written to your elected officials expressing your opinions on environmental problems.
 - Voted for a politician due to his or her record on protecting the environment.
 - Joined in community cleanup efforts.
 - Donated money or paid membership dues to a conservation organization.
- Consumerism,
 - Cut down on the use of your car by using public transportation, car pooling, etc.,
 - Bought products made from recycled materials.
 - Switched from one brand to another due to concern for the environment.
 - Read labels on products to see if the contents were environmentally safe.
- Education
 - Enrolled in courses for the sole purpose of learning more about environmental issues.

- Watched TV programs about environmental problems.
- Talked to others about environmental issues.

15. Can you divide these behaviors into 2 sets:

- Those that you make decisions quickly without much effort
- Those that you make decisions slowly with a lot of effort

Set aside slow in the making

17. Explain how you decided which behaviors go in each category.

16. Are there other behaviors that go in the two categories that aren't on this list? Please write them on cards and add them to one of the groups.

18. What else would you like to know or learn in order to make better decisions about these issues?

19. Describe a behavior that you placed in the fast pile that at one time made the decision slowly. What caused the shift in the amount of effort or consciousness in decision-making?

20. Describe a behavior that you placed in the slow pile that at one time made the decision quickly or automatically. What caused the shift in the amount of effort and consciousness in decision-making?

21. How do you think the way you make these decisions is linked to your identity?

Now, can you divide these behaviors into 3 sets:

- Those that are critically important for our future as a planet.
- Those that are moderately important.
- Those that are least important.

Are there other behaviors that go in the first category that aren't on this list? Please write them on cards and add them to that group.

22. Explain how you decided which behaviors go in each category.

23. Was it easy or hard for you to decide where to put the behaviors?

24. Which were easiest for you, and why?

25 Which were hardest for you, and why?

26. 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.

Which of these would you decide to live in?

Which of these would you expect to have the most and least environmental impact?

a. An apartment in the city

b. A small house in the city

c. A small house in the country

Explain your reasoning.

Were you able to come to this decision in fast or slow way?

What else would you like to learn before making this decision?

How does your identity come into play when making this decision?

APPENDIX C

Consent Form

Basic information:

This form describes the Environmental Identity and Behaviors research study, what it means for you to participate in it, and the rights you have to refuse to participate. Students who wish to participate must indicate their willingness to do so by signing and returning this form to Allison Freed (webst162@msu.edu).

Detailed information:

What is the environmental identity research study about?

This research project will study what environmental identity is and how it may predict pro-environmental behaviors and how one makes environmental decisions. The study will help to inform the environmental education and science education communities about these constructs and how they are related to each other. This information could inform curriculum development.

Does this study involve research?

Yes, this study involves collecting data about participants and their identities, behaviors, and decisions. Not all participants will be asked to supply all the same information, but all will be asked to complete a survey about their socioeconomic background and a 20-40 minute survey about their environmental identity, responsible environmental behaviors, and environmental decisions. A small group of participants will be asked to participate in a 30-45 minute interview once this semester. The interview will consist of further questions about environmental identity, behaviors, and decisions.

What kinds of information about me will be collected in the study?

The following information will be collected: demographic information, such as age, socioeconomic background; information about your environmental identity, such as whether your self-concept is tied to nature and/or your values are influenced by your experiences in nature. For a small sample, additional information about your experiences and identities will be collected.

Will information about participants be kept confidential?

All information about participants and any other information will be kept confidentially. This means that researchers, but no one else, will be able to connect their names to any of the following pieces of information: age, demographics, survey responses, and interview responses. But to obscure this information even from researchers, all participants will be assigned a code

that researchers will then use in place of participants' name to store and analyze any information about them.

How long am I expected to participate in this study?

This study will run from October 27, 2014 to October 27, 2017. Participation ends with the completion of the course/semester. We request the liberty to follow up with you not more than 5 times by email in the future. But participation is entirely voluntary and participants have the right to terminate it for any reason at any time, including during the period of their enrollment in this course/semester.

How will the study be conducted?

After reading this consent form and agreeing to be a part of this study, participants will be asked to complete a 10-20 minute survey. After that, a small sample of participants will be asked to be a part of a 30-45 minute interview. Allison Freed will analyze the survey data to determine the distribution of environmental identity scores, after that she will organize the data from high, medium, and low environmental identity scores. From that data, ten participants will be randomly selected from each group (high, medium, and low environmental identity scores). When all data have been collected, researchers will use participants' study code to store and analyze the data.

Are there any foreseeable risks of participating in this study?

There are no direct risks of participating in this study. Data for this study will be collected and stored on a password-protected computer. The study code connecting participants' name (or other identifying information) to this data will be stored in a separate location. It is possible but extremely unlikely that private information collected during this study will be released to someone other than the researchers.

Are there any foreseeable benefits of participating in this study?

Participants in this study may benefit in two ways. First, after participation in this study is complete, two participants who complete the survey portion of the study will be selected at random to win a \$50 Amazon gift card. For this part of the study, completing the study means completing and submitting all required surveys on time. For those of you randomly selected to participate in an interview, two additional participants will have an opportunity to be randomly selected to win a \$50 Amazon gift card after successfully completing an interview. Second, all participants may benefit from the self-knowledge derived from completing the survey, the surveys are designed to assess environmental identity, behaviors, and decision making. But educational researchers and society more generally will benefit from knowledge concerning the impact of environmental identity on participating in environmental behaviors and making well informed environmental decisions.

Is participation in this study voluntary and under what circumstances can participants cease participation?

Yes, participation is voluntary, you may choose not to participate at all, or you may refuse to participate in certain procedures or answer certain questions or discontinue your participation at any time without consequence (e.g. will not affect treatment you will receive, will not affect your grade or evaluation, etc.). Participants who no longer wish to participate may withdraw by notifying Allison Freed.

Is there anyone participants can contact with questions about their rights or in the event of a research-related breach of trust?

Yes, participants may contact Michigan State University's Human Research Protection Program at the following address:

408 W. Circle Dr. Rm 207 Olds
East Lansing, MI 48824
Phone: (517) 355-2180
Fax: (517) 432-4503
Email: irb@msu.edu

Who should participants contact for more information about this research project?

Allison Freed
250C Erickson Hall
Department of Counseling, Educational Psychology, and Special Education
Michigan State University
620 Farm Lane
East Lansing, MI 48910

Phone: (517) 243-8140
Email: webst162@msu.edu

By signing in the box below, I hereby declare my consent to participate in the study 'The Association of Environmental Identity on Pro-Environmental Behavior and Environmental Decision Making'

APPENDIX D

Instructional Review Board Approval Letter

MICHIGAN STATE UNIVERSITY

October 22, 2014

To: E. David Wong
350 Erickson
Dept. Of CEPSE

Re: **IRB# X14-1001e** Category: Exempt 2
Approval Date: October 21, 2014

Title: The Association of Environmental Identity with Pro-Environmental Behaviors and Environmental Decision-Making

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been deemed as exempt** in accordance with federal regulations.

The IRB has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. **Under our exempt policy the Principal Investigator assumes the responsibilities for the protection of human subjects** in this project as outlined in the assurance letter and exempt educational material. The IRB office has received your signed assurance for exempt research. A copy of this signed agreement is appended for your information and records.

Renewals: Exempt protocols do not need to be renewed. If the project is completed, please submit an *Application for Permanent Closure*.

Revisions: Exempt protocols do not require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a new initial application will be required.

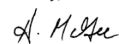
Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants regarding the risk and benefits of the project must be reported to the IRB.

Follow-up: If your exempt project is not completed and closed after three years, the IRB office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,



Harry McGee, MPH
SIRB Chair

c: Allison Webster



Office of Regulatory Affairs
Human Research
Protection Programs

Biomedical & Health
Institutional Review Board
(BIRB)

Community Research
Institutional Review Board
(CRIRB)

Social Science
Behavioral/Education
Institutional Review Board
(SIRB)

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East Lansing, MI 48824
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Fax: (517) 432-4503
Email: irb@msu.edu
www.humanresearch.msu.edu

MSU is an affirmative-action,
equal-opportunity employer.

**Initial IRB
Application
Determination
*Exempt***

APPENDIX E

Sample Interview Transcripts

KIM

The text below represents a professional transcriptionist's understanding of the words spoken. No guarantee of complete accuracy is expressed or implied, particularly regarding spellings of names and other unfamiliar or hard-to-hear words and phrases. (ph) or (sp?) indicate phonetics or best guesses. To verify important quotes, we recommend listening to the corresponding audio. Timestamps throughout the transcript facilitate locating the desired quote, using software such as Windows Media player.

BEGIN TRANSCRIPT:

INTERVIEWER: Could you just tell me a little bit about yourself, say your major and that type of thing?

ASHLEY: I'm a sophomore at Michigan State and I'm majoring in elementary education with a specialization in history, and then an endorsement in early childhood development.

INTERVIEWER: All right, great. And you were in TE 150 last semester.

ASHLEY: Yes.

INTERVIEWER: All right. Let me give you a pen. And are you from Michigan?

ASHLEY: Yes.

INTERVIEWER: Okay, whereabouts?

ASHLEY: Plymouth.

INTERVIEWER: Okay, great. So, what I'm going to have you do is, on that piece of paper, I want you to write five to ten answers to the question, "Who am I?" And so it's really focusing on your identity and who you think you are. Like the first things that come to your mind. And so you just number it one through however many you can come up with over five, and verbalize it as you're writing them down.

ASHLEY: Okay. [00:00:58]

I'm a sister.

INTERVIEWER: Okay.

ASHLEY: To two brothers. I mean, I'm a daughter. I'm a friend. This is hard.

INTERVIEWER: Well whatever you can come up with. Like think of things you like to do.

ASHLEY: I'm a traveler. I'm a cook. You want me to keep going, or?

INTERVIEWER: If you have more to give, yeah.

ASHLEY: I can't think of any.

INTERVIEWER: Okay, that's fine. All right. So now what I want you to write on your paper what environmental actions you take, and I want you to rank them. So first of all just write down whatever environmental actions you think you take. [00:02:03]

And then I'll have you rank them after you write them down.

ASHLEY: Okay.

INTERVIEWER: So verbalize as you're writing.

ASHLEY: I recycle. I drive a small car, so—

INTERVIEWER: Okay. So it gives it good gas mileage.

ASHLEY: Yeah. What else? It's hard to think things like on the spot. I, I use like recycled things like paper and stuff.

INTERVIEWER: Yeah.

ASHLEY: I don't litter. [00:03:00]

I garden at home with my mom.

INTERVIEWER: Okay.

ASHLEY: And I like grow our own vegetables. Do you want me to keep going?

INTERVIEWER: If you have more you can keep going, but if you're having a hard time then we can stop.

ASHLEY: I can't think of any more right now.

INTERVIEWER: Okay, you can add whenever you need to.

ASHLEY: Okay.

INTERVIEWER: So now what I want you to do is to rank them based on the effect they have on the environment. So which one has the most positive effect on, on the environment would be number one, and then rank them after that.

ASHLEY: Keep going. I think recycling is number one.

INTERVIEWER: Okay, and why do you think that?

ASHLEY: Because if you don't recycle, like it just sits in the landfill. [00:04:00]

And then I think driving a small car is good because it doesn't use as much gas as like a bigger car would, even though it's still bad for the environment, it's better than it could be. I don't litter, so I keep the environment clean, and I garden at home so I like plant things to replenish the nutrients and stuff. And I guess that's kind of the same things as growing our own vegetables, and then I use recycled stuff.

INTERVIEWER: Okay, and so why did you rank them in that way?

ASHLEY: What do you mean?

INTERVIEWER: So why do you think recycling has the most positive effect on the environment while using recycled goods, like recycled paper is, is less of an effect?

ASHLEY: Recycling, there's like more different categories of it.

INTERVIEWER: Okay.

ASHLEY: So there's more things that you do. [00:05:01]

And then for like using recycled paper, I don't know, it's important but it's not as important, I guess.

INTERVIEWER: Okay. All right, so we're going to do the change, change paths here. So as a child, how, how often do you think you spent time in the natural environment or outdoors?

ASHLEY: When I was really little, I would play outside with like my friends and my brothers, all the time, like every day in the summer. But as I got older I stopped spending as much time outside, so I don't know, a lot when I was younger.

INTERVIEWER: So how much, let's try to quantify it.

ASHLEY: Okay.

INTERVIEWER: So how much time per week on average would you be outside?

ASHLEY: Over the summer when I was little, it was like forty-eight hours. I don't know, it's been like—

INTERVIEWER: A week?

ASHLEY: Yeah. [00:05:59]

INTERVIEWER: And when you say you're little, how old do you think you were?

ASHLEY: I was, I'm trying to think, I was in fourth grade when I moved, so until I was like eight or nine.

INTERVIEWER: Okay. Where did you move from?

ASHLEY: I lived in Haslett when I was little and then I moved to Ohio.

INTERVIEWER: Okay, and now your parents are back in Michigan.

ASHLEY: In Plymouth, yes.

INTERVIEWER: Okay. All right, so when you're eight or nine you spent more time in the natural environment, so what are some of the things you would do? What's a memorable experience you could share with me?

ASHLEY: I remember with my older brother and our neighbors across the street, there was a kid that was a year older than me and then a girl a year younger than me. We went outside and we built like a fort, like a teepee fort with trees and like stuff and just played in it for, oh my gosh, we played all the time in it.

INTERVIEWER: Okay, and you, you, what would you do? What kind of play?

ASHLEY: We would just play like house in it, pretend, I don't know, we'd pretend we were, I don't know. [00:07:02]

Pretend that like that's where we lived.

INTERVIEWER: Okay. All right, so how often do you think you spend time in your natural environment now?

ASHLEY: Not as much as I'd like to. Yeah.

INTERVIEWER: So per week, kind of the same thing. How many hours or would you say?

ASHLEY: In the summer I'm outside maybe fifteen hours a week, but in the winter, not much because it's way too cold.

INTERVIEWER: Yeah, I totally understand. It's really hard to be always—

ASHLEY: Oh yeah.

INTERVIEWER: Okay. So could you describe what you do in the outdoors now?

ASHLEY: I go swimming.

INTERVIEWER: So like in the, in like Lake Lansing, or—

ASHLEY: No, I swim in a pool.

INTERVIEWER: Okay.

ASHLEY: Or I have bonfires or I, I mean I garden with my mom. [00:08:00]

INTERVIEWER: So can you, so like you're describing the experiences, right? Okay, and so would you say you're outside alone, or with other people, or—

ASHLEY: With other people normally.

INTERVIEWER: And how do you think the natural environment fits into your identity? Or do you think it does?

ASHLEY: I mean, I, I want to live somewhere warm when I'm older because when it's like sunnier or nicer out, like I'm happier. And then when it's cold like this I just don't want to go outside at all.

INTERVIEWER: Okay. So would, if you didn't have that opportunity to be in the natural environment, would you think that a piece of yourself was missing?

ASHLEY: Yeah. If I didn't get to be out in the sun all the time, or like at all, I would not be a happy person. [00:09:04]

INTERVIEWER: Okay. All right, so we're going to switch gears now to some of the behaviors, and you've seen these before because they were on the survey.

ASHLEY: Okay.

INTERVIEWER: So you'll look at those, and what I'm going to have you do is rate your involvement in those behaviors on a one to five scale, with five being frequently.

ASHLEY: Okay.

INTERVIEWER: And then you have four, three, two, and then one is infrequently. And so I have those behaviors already set out, but you have a blank card so you can add behaviors that

you feel like you do and you want to add in, put those in this continuum. And so as you're putting the behaviors in these categories, just verbalize the behavior and what category you're putting it in, like what number. And then kind of describe why you're deciding that.

ASHLEY: Okay. I watch TV programs about environmental problems. [00:10:01]

I'm going to put that under two because I don't go out of my way to do it, but if it's on, I will do it. Read labels on products to see if contents were environmentally safe. I'm going to put it under three because I do sometimes.

INTERVIEWER: In what cases do you do it?

ASHLEY: If like, like if it says on there, like right, I don't go looking for it, but if it says it like—

INTERVIEWER: On the front cover label of the product?

ASHLEY: Yeah, yes. Switch from one brand to another due to concern for the environment. Yes, I have done it in three.

INTERVIEWER: What product was it?

ASHLEY: Hairspray. Because I know the aerosol's bad for the environment.

INTERVIEWER: Okay.

ASHLEY: Written to your elected officials expressing your opinions on environmental problems. That's something I've never done. Donated money or paid membership to a conservation organization. I don't think I've ever done that either. [00:11:03]

INTERVIEWER: Would you ever consider doing something like that?

ASHLEY: Yeah, if I wasn't a broke college student.

INTERVIEWER: Sure.

ASHLEY: Voted for a politician due to his or her record on protecting the environment. Again, this is something I haven't done because I've never voted, so—

INTERVIEWER: Are you registered to vote?

ASHLEY: I am. I just wasn't old enough to vote.

INTERVIEWER: When it was a major election?

ASHLEY: Right.

INTERVIEWER: Okay.

ASHLEY: Enrolled in courses for the sole purpose of learning more about environmental issues. I think yeah, I took a class in high school like that.

INTERVIEWER: Like an environmental studies class?

ASHLEY: Yeah.

INTERVIEWER: Okay.

ASHLEY: So I'll put that under three, I guess. Talk to others about environmental issues. Yes, I do. I talk to my grandparents. I'm going to put that under number four. They're really into protecting the environment and they drive a Prius and stuff, so I talk to them about it.

INTERVIEWER: And in a way of just gaining information from them or sharing?

ASHLEY: Yeah. [00:12:01]

Or talking about like, "Oh, I can't believe people do this to the environment." Avoided buying products with excessive packaging. I haven't done that before. Joined the community in cleanup efforts. I did, I did in high school.

INTERVIEWER: What did you do?

ASHLEY: I cleaned up a cemetery.

INTERVIEWER: Okay, of what? How did you clean it up?

ASHLEY: We just cleaned trash up and stuff. Yes. Recycled bottles or jars or aluminum cans. Yes. I do that all the time, so that's a five. Sorted your trash to separate non-recyclables from recyclable material. Yes, I do that all the time too.

INTERVIEWER: On campus, did you, do you live on campus?

ASHLEY: Yes.

INTERVIEWER: So even on campus.

ASHLEY: Yes.

INTERVIEWER: Is it pretty easy to do?

ASHLEY: Yes, because we have recycling bags and then a recycling room downstairs and then a trash can that's separate.

INTERVIEWER: Yeah, and you do that at home too? Like when you're at home?

ASHLEY: Yes.

INTERVIEWER: With your parents, okay.

ASHLEY: I always have. Bought products made from recycled materials. Yes. I do quite frequently. [00:13:02]

Cut down on the use of your car by using public transportation, carpooling, et cetera. Yes. I carpool. I always see if, like I'm going home, so that's a five. Whenever I'm going home I always see if someone else needs a ride or I take, I took the bus to school, or I rode with my brother or I carpooled places.

INTERVIEWER: And so that's important to you?

ASHLEY: Um-hmm.

INTERVIEWER: Okay. So which of these behaviors do you wish you could more often?

ASHLEY: Like I said, the donating money to memberships, or paid memberships. I wish I had the money to do that.

INTERVIEWER: In what organizations? Do you have any ideas of who or why you would donate to particular organizations?

ASHLEY: None come to like the top of my head. I would have to like look into them more, but just that the ones that like help the environment. [00:13:57]

I wish I could join the community cleanup efforts more. I just don't have time to do them.

INTERVIEWER: Do you seek out ways of working in the community?

ASHLEY: No, if it like comes up, I'll be like, "Oh, that sounds cool, I'll do that." But I don't go like looking for it.

INTERVIEWER: Okay. Have you done anything here on campus, just in high school?

ASHLEY: Not, yeah, just in high school. Not since I've been here.

INTERVIEWER: Why do you think it's difficult to participate in some of these behaviors, like what barriers are put in your way? You've mentioned a few, but maybe if you think of things that aren't in level five or four.

ASHLEY: Yeah. I think some issues aren't discussed as much, so you aren't as aware of them. Like you have to do your own research on them and stuff. Or money, or time, yeah. [00:14:58]

INTERVIEWER: Okay. Did you want to add any, any behaviors that you, you've mentioned before that aren't in this list?

ASHLEY: I don't think there's anything extra. I mean, I'll put gardening, I'll do that.

INTERVIEWER: Yeah, yeah. Go ahead and write it down.

ASHLEY: I'll put that under five. Every summer I do that with my mom.

INTERVIEWER: And is it vegetable garden or flowers?

ASHLEY: Yeah, both. We have both. My mom loves being outside too. Yeah. And then, I mean, I don't litter, so should I add that too?

INTERVIEWER: Sure.

ASHLEY: I'm just looking at the list I made. [00:15:59]

So I put that under five.

INTERVIEWER: Okay. All right, so let's switch gears again. Now we're talking about social influences. So what impacts do your social interactions, like with parents, roommates, your significant other, friends, have on your choice to participate in any of these behaviors?

ASHLEY: Like I said, if somebody brings it to my attention I'll do it, but like if it, I don't go out of my way to research it, so if my grandparents mention, "Hey, like you should consider doing this," I'll be like, "Oh, yeah, that's a good idea." Or like I go with my Dad to do the recycled bottles and cans and stuff, but they're just kind of how I become aware of the issues.

INTERVIEWER: So I guess, would you more likely listen to your family than someone else? [00:16:56]

ASHLEY: Yeah.

INTERVIEWER: And so why do you think?

ASHLEY: I don't know, I'm closer to my family. I just listen to what my parents say more than what other people say.

INTERVIEWER: So can you describe a time when a social interaction impacted your, any of these behaviors, recycling, activism, consumerism, or education or other environmental behaviors in some way, and maybe, maybe in a positive and a negative way.

ASHLEY: I know my uncle drives a giant car, and he does not care about how bad it is for the gas, and like the environment. I told him, I was like, “You know that you’re like destroying where you live, right?” He’s like, “I don’t care, I don’t care.” I’m like, “Well, I’ll drive a smaller car.” So—

INTERVIEWER: So how did that impact your behaviors then, your environmental behavior?

ASHLEY: I mean, now I drive a smaller car.

INTERVIEWER: Okay, so kind of to spite him.

ASHLEY: Yeah, yeah. [00:17:59]

INTERVIEWER: Or to cut down on your impact a little bit more because other people don’t?

ASHLEY: Yeah, yeah. It opened my eyes to seeing that not everyone really cares.

INTERVIEWER: Okay. And so is there a social interaction that impacted any of these behaviors in a positive way?

ASHLEY: I mean—

INTERVIEWER: Or, I guess that’s more of like a positive. What about in a negative way? Or if like peer pressure or something came into play where you didn’t act in an environmentally-sound way?

ASHLEY: I mean, I guess when I’m like driving with my friends, it’s not me, but like my friends will like if we get candy or something, like a sucker, they’ll just roll down the window and throw it out because there’s not a trash bag, or trash can nearby. I’m like, “You’re littering. That’s not okay.”

INTERVIEWER: And so do you think that you are more environmentally-minded than your friends?

ASHLEY: Yeah, than some of them. [00:18:59]

INTERVIEWER: All right. So how has your membership in a group or community influenced your environmental behavior?

ASHLEY: In my sorority, I mean I didn’t go, but they went and cleaned up the streets in I think it was somewhere in Lansing, so they have stuff like, like that that we do. I just couldn’t go that one time, but they come up with other things and I’m like waiting for another one to go to.

INTERVIEWER: And so can you describe the community a little bit more and your participation in your sorority?

ASHLEY: What do you mean?

INTERVIEWER: In like how are you an active member in the, in the sorority, and then what, what is your, I think you all have some type of—

ASHLEY: The philanthropy?

INTERVIEWER: Yeah.

ASHLEY: I, our philanthropy is service for sight, so we work with like the Penrickton, I can't pronounce it, Penrickton, I don't know, but it's the school for the blind. So we raise money and we do fundraisers and stuff to help with that. [00:20:05]

And then we also go there and we make like, we go there and help out there, and then we make like books, Braille books and stuff, so I participate in activities like that.

INTERVIEWER: Okay, and you would like to be more involved in their cleanup efforts in the area. Okay. And how do you think your social interactions and your interactions in your sorority and other groups have impacted your identity?

ASHLEY: I think that as I've become more aware of the things that I can do to help the environment and stuff, I've started changing my like actions. Like my grandparents drive a Prius and they talked to me about it and I told my parents I wanted a smaller car. [00:20:58]

I don't know, just the social interactions make me more aware of things.

INTERVIEWER: Great. Okay, so this next question has to do with decision-making. So you can go ahead and we'll keep these that you've added.

ASHLEY: Okay.

INTERVIEWER: And just take all the orange ones down and I'm going to move those purple cards. And so now we're going to group these, these behaviors in decisions, and the way you make decisions, either in a slow or quick way, and you were also surveyed on this too. So you're going to have two sets, those behaviors that you make decisions quickly about without much effort or much intention. It's almost intuitive, and another group is those that you make decisions slowly, or you take more effort and intention, it's more of a conscious decision. [00:22:00]

ASHLEY: Okay.

INTERVIEWER: To do, and so as you're doing it, tell me what the behavior is, what column you're putting it in or what set, and then kind of an explanation to why.

ASHLEY: Okay. A quick decision is recycled glass or bottles, because I just, I've always done it, so I do it.

INTERVIEWER: So it's in the quick pile.

ASHLEY: Yeah. Joined in community cleanup efforts is slow because I have to think about if I have time for it or when it is. Talk to others about environmental issues. That's a quick one, because if it comes up, like I'll say something about it. Sorted your trash to separate non-recyclable from recyclable material, that's a quick decision because it's something I've always done. Bought products made from recycled materials. Again, that's a quick decision because I'd rather buy it from recycled than non-recycled. Cut down on the use of your car by using public transportation, carpooling, et cetera. [00:23:02]

That's a quick decision because I'd rather do it, but if I can't, I mean, I'm going to drive my car if nobody else is going to ride with me. Read labels on products to see if the contents are environmentally safe. I'm going to say this is a slow decision because if it's not right in front of my face, I don't dig deeper for it, I guess, and then watch TV programs about environmental problems. Again, that's a slow decision because if it's not on, I'm not going to search through the channels to find it. Switch from one brand to another due to concerns for the environment. You know, that's a slow decision because I would have to research both of them. Written to your elected officials expressing your opinions on environmental issues. That's a slow decision to because you would have to do extra research for that. [00:24:01]

Donated money or paid membership dues to a conservation organization. Again, that's slow. I would have to look in to see if I could afford it or what the membership says you have to do. Avoided buying products with excessive packaging. I guess that would be quick because if you pick it up you can see if there's a lot of extra packaging. Voted for a politician due to his or her record on protecting the environment. That would have to be slow. You would have to research their stance or views or whatever. Enroll in courses for the sole purpose of learning more about environmental issues. I'd say that's quick, because if the course says you're going to learn about this, then there's not really anything to think about.

INTERVIEWER: Okay, so like if it were a required course, not that you would seek it out and look for it, okay. [00:24:58]

ASHLEY: Right, right. If it was required and it said like this option over this one, and one's for the environment and one's not, then—

INTERVIEWER: You would pick the environment.

ASHLEY: Yeah.

INTERVIEWER: Okay. And then okay, so good. And what about the two that you, want to put those in one of the piles?

ASHLEY: Gardening's a quick decision because I enjoy doing it and not littering. I mean, it's a quick decision because it's something I do. I don't have to think about, "Oh, I shouldn't grow this on the ground."

INTERVIEWER: Okay, good. So what else would you like to know or need to learn in order to make better decisions about these issues? You can pick out a few to focus on.

ASHLEY: Like when community cleanup efforts are, I would have to look more into that.
[00:25:56]

I would have to look more into like organizations and memberships and stuff because I don't really know anything about any organizations. Or the different brands. I would need to know like what they use.

INTERVIEWER: Like what ingredients, you mean?

ASHLEY: Yeah, yes. Yeah.

INTERVIEWER: All right. So could you describe one of the behaviors that you placed in the fast or quick pile that at one time you made that decision in a slow way, more of an effortful way, and what caused the shift in the amount of effort or consciousness in that decision?

ASHLEY: I guess recycling glass bottles or jars. When I was little I always used to say to my dad, "Why do we have to go do this?" Like it's such a hassle to go all the way to the store to turn them in, just throw them out in the trash. [00:27:02]

And he explained to me, he showed me pictures of like, like the, the ocean where the, I can't think of what it's called, the circle where all the trash—

INTERVIEWER: Oh, the garbage?

ASHLEY: Yeah, is floating.

INTERVIEWER: The island?

ASHLEY: Yeah, and he just showed me that, and he's like, "If we don't do this, this could happen more and more."

INTERVIEWER: He did that dramatic.

ASHLEY: Yeah.

INTERVIEWER: Oh, okay.

ASHLEY: Yeah, so he kind of opened my eyes, and I was like, "Oh, I guess my actions do actually have an impact."

INTERVIEWER: Yeah, and so was it a very quick transition to—

ASHLEY: Yeah.

INTERVIEWER: Deciding that I need to do that?

ASHLEY: Yeah.

INTERVIEWER: Or did it take some time?

ASHLEY: As soon as he showed me that, I was like, “Okay, now I get it.”

INTERVIEWER: All right, and let’s do the same with the opposite question. So describe a behavior that you placed in the slow pile that at one time you made quickly or automatically, and what caused the shift in the amount of effort and consciousness in that decision? [00:27:59]

ASHLEY: The switching from one brand to another. The hairspray. I switched, but if I don’t know that something is being like negatively impactful on the environment, then I’m not going to stop using it because I just don’t know.

INTERVIEWER: Okay, and you’re not likely to research that—

ASHLEY: Right.

INTERVIEWER: Unless it comes to mind from someone else?

ASHLEY: Yeah, yeah. Or like on the news or something.

INTERVIEWER: Yeah. And how did you hear about the aerosol?

ASHLEY: I think I heard it on the news.

INTERVIEWER: Okay.

ASHLEY: Or my mom said something. I think it was on the news.

INTERVIEWER: So your family is a source of information, and the news, so what type of news do you watch?

ASHLEY: I mean the local news or the national news.

INTERVIEWER: And where else do you get, find information about environmental issues?

ASHLEY: My friends, or I see stuff online.

INTERVIEWER: Like Facebook?

ASHLEY: Yeah, or just scrolling, I don’t know, web surfing I guess.

INTERVIEWER: Okay. [00:28:59]

How do you think these decisions are linked to your identity?

ASHLEY: I mean, the easy decisions are something that I'm going to do, but if it takes a lot of effort and time to put into it, I don't have a lot of time to put into it, so I don't know.

INTERVIEWER: So I guess, let me try to understand, are you talking about priorities?

ASHLEY: Yeah. Like if, if it doesn't take much extra for me to do, then yeah, I'll do it in a heartbeat, but yeah.

INTERVIEWER: Okay. All right. So I'm going to have you categorize these behaviors one more time.

ASHLEY: Okay. [00:30:01]

INTERVIEWER: And I'm going to take these, and you can take the behaviors back. And you're going to categorize them with the least important for the future of the Earth here, moderately important for the future of the Earth, and critically important for the future of the Earth. So once again, as you do it, tell me the behavior.

ASHLEY: Okay.

INTERVIEWER: And then tell me what category you put it in, and then some explanation as to why you're putting it in each category.

ASHLEY: Reading the labels on products to see if the contents were environmentally safe. I would say that's moderately important. I don't know, because it's not like super super important like other things could be, but it's definitely important. Watch TV programs about environmental issues. I would say that's moderately important but it's not critically important because you can get information other ways. Switch from one brand to another due to the concern for the environment. [00:31:02]

I think it depends on what the brand is. If it's like something big that, I don't know.

INTERVIEWER: Like a large company, you mean?

ASHLEY: Yeah.

INTERVIEWER: Okay. So like if you shift from, for instance, Kraft company that produces lots of different things, it would be more critically important than if it were—

ASHLEY: Yeah.

INTERVIEWER: A small local company.

ASHLEY: Yeah. So I'll put it under critically. Joined in community cleanup efforts. I think that's really important because if you don't keep your environment clean, the Earth is, it's not going to do well, I guess. Voted for a politician due to his or her record on protecting the environment. I don't think that's super important, so I'm going to put it under least important because the politician's not the only one that can change things for the environment. [00:31:58]

Donated money or paid membership dues to a conservation organization. I think that's moderately important because like again, yeah, they're going to do great things for the environment, but they're not the only ones that can. Written to your elected officials expressing your opinions on environmental problems. I'm going to put that under least important because again, your politician's not the only one that's going to do something. Talked to others about environmental issues. I think critically important because if not everyone's brought aware of it, they're not going to know about it, so—

INTERVIEWER: And so you think that that has more of an impact than maybe a politician making a law or voting a particular way.

ASHLEY: Yeah, yeah I do. Bought products made from recycled materials. I think that's moderately important because not everything you buy that's not made from recyclable materials is necessarily bad, but it still is better than some other things. Cut down on the use of your car by using public transportation, carpooling, et cetera. [00:33:06]

I think that's really important. I think that if you're going somewhere, you shouldn't take like multiple cars, you should all sit in one car if you can.

INTERVIEWER: Why do you think that is critically important for the future of the Earth in general, or in broad—

ASHLEY: Right, because the gas and like the car emissions are so bad for the Earth, so if you cut down on that, you're helping the Earth out more than you would be if you're using two cars. Enrolled in courses for the sole purpose of learning more about environmental issues. I think that's moderately important because the course will teach you about the environmental issues, but you could still learn about them in other ways. Recycle bottles or jars or aluminum cans. I think that's critically important. (inaudible at [00:33:56]). No, I didn't already talk about it. Critically important because you want to keep the Earth clean. [00:34:02]

Help and join in community cleanup efforts. Sorted—

INTERVIEWER: How does recycling glass bottles and jars and aluminum cans help keep the Earth clean do you think?

ASHLEY: Because like if you throw them away, they don't break down in the environment. Sorted your trash to separate non-recyclables from recycled material. I think that's critically important too for the same reason. Avoided buying products with excessive packaging. I think

that's, yeah, critically important because you don't want the extra like packaging to be in the environment. So if you stop buying it, then maybe it will cut down on the packaging.

INTERVIEWER: So I guess one question I have is, so you mentioned that what politicians do and how they vote, and the decisions they make is least important to the Earth compared to talking with others and being more social and communicating with each other. [00:35:05]

So could you tell me why you think that?

ASHLEY: I don't really know. I think that if you are more, like, like somebody's going to listen to somebody they're close with over what a politician told them, so if like I'm talking to a friend and I'm like, "Hey, you should start doing this," that they're going to listen to me over like if the President is like, "You should start doing this." Not everyone listens because political parties and stuff. Like some people just don't like those officials. They're not going to listen to them.

INTERVIEWER: All right. And then what about the two that you added?

ASHLEY: I think gardening is important, critically important because you need to replenish the things that you use, like eat tomato, but don't like plant a tomato plant, and another tomato plant's not going to come up. And not littering. Again, that's joined in community cleanup efforts. You want to keep the earth clean. [00:36:11]

INTERVIEWER: And so why do you think gardening and growing your own produce is more critically important than maybe going out and just going to the store (inaudible at [00:36:20]) and buying.

ASHLEY: Because then you're using your car to get there most of the time, and that's creating a bigger carbon footprint for you.

INTERVIEWER: Okay. So was it easy or hard for you to make the decisions of where to put these behaviors?

ASHLEY: For the most part, it was easy. Some of them were kind of hard, I don't know.

INTERVIEWER: Which ones were hard?

ASHLEY: Let's see. Watching TV programs, because I was like, "It is important, but is it really important?" Or the donating money. [00:37:01]

More the moderately ones that I put. Because I was like, "Yeah, they're important, but are they super-important?"

INTERVIEWER: And so what, what did you decide? How did you decide between putting it in the moderately and the critically important? What were some of the things that these critically important behaviors had that these moderately ones didn't?

ASHLEY: These are things that you personally can do. And like if you're putting money, like donating money, you're just donating money and you don't know for sure that it's going towards that.

INTERVIEWER: Okay.

ASHLEY: So these are the things that you can like do now that you can see. Like a change, I guess.

INTERVIEWER: Great. So which were the easiest for you?

ASHLEY: The recycling ones, or the cutting down on the use of your car, the things that like you know will help the Earth. [00:38:08]

INTERVIEWER: What are the hardest? You said the moderately ones? Were there any other ones?

ASHLEY: Yeah. The least important ones. Because they're still important, but they're not as important, so those were kind of harder.

INTERVIEWER: You think there just not as important for yourself or not as important in general?

ASHLEY: For me they're not as important, but for someone that listens to the politicians, listens to everything they have to say and watches all the speeches and stuff, yeah, that may have more of an impact on them than talking to their friends. I think it just depends on who you are.

INTERVIEWER: Great. I think. All right, I have one more question. It's based on one of the environmental identity scale comments. I would rather live in a small room or house with a nice view than a bigger room or a house with a view of other buildings. [00:39:09]

So which of these would you decide to live in? An apartment in the city, a small house in the city, or a small house in the country? Explain your reasoning.

ASHLEY: Small house in the country. I don't like the hustle and bustle of cities.

INTERVIEWER: Okay, and which of these would you expect to have the most or least environmental impact? So which one would have the most environmental impact, negative impact? An apartment in the city, a small house in the city, or small house in the country?

ASHLEY: A small house in the city.

INTERVIEWER: Okay. why do you think that?

ASHLEY: Because there's so many people that live there, and so you're going to have all your own electric bills and your own like everything. Like you're going to have all the utility bills that you don't have in an apartment. [00:40:03]

But you're in the city, where there's cars driving around everywhere and yeah.

INTERVIEWER: And what else would you need to learn before making this decision? Like what other environmental factors would you need to know about where to live?

ASHLEY: About where to live?

INTERVIEWER: And where you would choose to live.

ASHLEY: I guess I would want to know, like if I live in the country, am I still going to have the same utilities as I would have in the city, but like how are they different, I guess?

INTERVIEWER: Utilities as in like water?

ASHLEY: Yeah.

INTERVIEWER: Okay, and so how does that connect with environmental issues?

ASHLEY: Like if you live in the country, you could get hydroelectric electricity, or you could have solar panels or stuff that you couldn't have in the city. So I would want to know if like the house in the country would have that stuff. [00:41:00]

INTERVIEWER: Or if you could get it.

ASHLEY: Yeah.

INTERVIEWER: And could you, were you able to come to this decision in a fast or slow way, or when you do come to that point in your life.

ASHLEY: Fast.

INTERVIEWER: Fast way? You would know this is where I want to be?

ASHLEY: Yeah, yeah.

INTERVIEWER: Okay. And how does your identity come into play when making this decision?

ASHLEY: I, I mean I know what I like and what I would want to be around every day. So I wouldn't want to be around all the loud noises and all the people all the time. Like living in the city. I would like to be in the quiet country where there's not all the smog and all that stuff. And the pretty views.

INTERVIEWER: And that, how does that perpetuate your identity then?

ASHLEY: I, I like my time alone. I don't like to be around all of the people all the time, and I don't know, the like, I don't like the views of like buildings everywhere. [00:42:04]

I'd rather have the countryside, because it's more soothing.

INTERVIEWER: Okay. Do you have any questions for me?

ASHLEY: Um-mmm.

INTERVIEWER: All right. Great. I really appreciate this.

ASHLEY: You're welcome.

INTERVIEWER: Thank you so much.

ASHLEY: You're welcome. [00:42:24]

END TRANSCRIPT

MOLLY

The text below represents a professional transcriptionist's understanding of the words spoken. No guarantee of complete accuracy is expressed or implied, particularly regarding spellings of names and other unfamiliar or hard-to-hear words and phrases. (ph) or (sp?) indicate phonetics or best guesses. To verify important quotes, we recommend listening to the corresponding audio. Timestamps throughout the transcript facilitate locating the desired quote, using software such as Windows Media player.

BEGIN TRANSCRIPT:

INTERVIEWER: All right, I'm here with 295P and we'll go ahead and get started. So for the first question I want you to list five to ten answers to the question, "who am I?" And you can put that on your paper. And then as you're listing, just verbalize what you're writing down.

RESPONDENT: Does it have to be full sentences?

INTERVIEWER: Oh no, no.

RESPONDENT: Ok. I am a junior. I am a uber. I am an environmentalist. [0:01:00] I am an environmental studies and sustainability major. This is hard.

INTERVIEWER: So anything that you think fits into your identity.

RESPONDENT: Oh, ok. Just in general Ok, well. I am a lesbian. I am an athlete.

INTERVIEWER: So, five to ten, if that's all you can think of.

RESPONDENT: Yeah, that's six.

INTERVIEWER: Ok.

RESPONDENT: Yeah.

INTERVIEWER: So on the paper as well, what environmental actions do you take? And if you could rank them from one to five. [0:02:05]

RESPONDENT: Like the big five?

INTERVIEWER: Yeah. Based on the amount of, the most effect those environmental actions have. And number one would have the most.

RESPONDENT: Ok. I recycle everything, or try to. I try not to use excess electricity. I pick up trash when I see it. I use reusable grocery bags. [0:03:02] And in the summertime I grow my own food.

INTERVIEWER: And so have you ranked them from number one, most effect?

RESPONDENT: Yeah.

INTERVIEWER: Ok.

RESPONDENT: Probably, yeah.

INTERVIEWER: Why would you rank them that way? With recycling number one.

RESPONDENT: I feel like recycling is like overall, it encompasses a lot. Like I recycle paper. I recycle plastic. I recycle metal. I recycle technology that I don't use any more. I just, I try and recycle everything I can. And I feel like that just kind of goes into the bigger picture. So like if I don't wear a piece of clothing anymore, instead of just throwing it out, I will recycle it and give it to the Salvation Army or something for someone else to use so they don't have to go out and purchase something new. [0:03:58]

INTERVIEWER: Ok.

RESPONDENT: Do you want me to go through all of them?

INTERVIEWER: I don't because I want to make sure we have enough time for the other questions. But we may come back to that.

RESPONDENT: Ok.

INTERVIEWER: As a child, how often did you spend time in the natural environment?

RESPONDENT: Probably a good portion of my life. I was born in Kalamazoo, Michigan. And then we have family up in the UP and in Mackinaw City. So I spent a lot of time out in the woods. Or just even outside. Like playing in the backyard. My mom always thought that if a child is going to play, they might as well play outside. So I spent a lot of time outside.

INTERVIEWER: So how often do you think, was it all seasons? Just the summer.

RESPONDENT: It was especially in the wintertime actually. Because we would get cabin fever. And my mom would be like, "Out with you". Just go outside and play and get some of that energy out from being cooped up all the time.

INTERVIEWER: So I guess if you could put a number on it, how many times per week would you be outside? [0:05:01]

RESPONDENT: Per week? Probably like 14. Multiple times a day. Like I didn't spend that much time inside unless the weather was really, really awful. We had friends in the neighborhood that we would go play with. We would always be outside. Always.

INTERVIEWER: So describe some of your most memorable experiences in the natural environment, or outside.

RESPONDENT: We have a family house on a private lake up in Levering, Michigan. It's like here. We would, it was me and my brother and then out two cousins. And we would always play. And we came up with this game. And it was kind of like a truth or dare. And it was, you either tell the truth or you have to jump off the dock in your clothes. And so we would be like jumping off the docks. And we would be just doing all these fun things. We'd go paddle boarding. We'd go kayaking. Because when it's a private lake, we could do that. There wasn't any fear of us getting taken or anything. We would just go outside whenever we wanted to. [0:06:07]

INTERVIEWER: Ok. How often do you spend time in the natural environment now?

RESPONDENT: Well, as of late, nothing. Because it's negative 11 out. But in general, not that often anymore. I don't really have time. Walking to and from class. I try not to take the bus if it's nice out so I can get some fresh air. There's a nature trail by my apartment that during the fall and the late, late summer I would take a lot of walks out there. But in general like a week, maybe two or three maybe.

INTERVIEWER: Ok, two or three times per week?

RESPONDENT: Yeah, maybe.

INTERVIEWER: And so you would most likely take nature hikes, hike around. So you don't normally go back to your cabin or anything?

RESPONDENT: I try to as much as I can. But where I live in Mackinaw is four and a half hours away. And in Levering it's four hours away. So it's kind of like finding the time off from school to actually drive up there, spend time, and then have to drive back. And with homework and stuff, it's not very feasible, unfortunately. [0:07:15]

INTERVIEWER: So how do you think the natural environment fits into your identity?

RESPONDENT: I think I care a little bit more. When people laugh that I recycle everything, it's kind of, I've recycled everything since I was young, younger. Like I've never really lived in an environment where we didn't reuse or we didn't recycle. But especially up north, it's a tourist town. Mackinaw City is a tourist town. And every summer you can tell it gets a little bit dirtier as the tourist leave. Because they leave and they don't have to live in the environment anymore. [0:08:02]

But there's trash on the beach. And there's stuff floating in the water. And they don't live there so they don't care. But I see it. As a, like as a resident there. And so it just, I don't like when people take the natural environment for granted. Because it's like they think it will always be there where it will not.

INTERVIEWER: And so you don't. You try not to do that. Even here. You are not a resident.

RESPONDENT: Yeah, even here.

INTERVIEWER: Well, you kind of are but not permanent.

RESPONDENT: Yeah, kind of.

INTERVIEWER: Yeah. Ok, so I have a set of behaviors here. I'm just going to put them out here for you. So you've seen these before because they were out in the survey. And so what you're going to do is you're going to put these into categories based on how frequently you do these behaviors. [0:09:01] So, one is infrequently and we have two, three, and you can organize this any way you want. Four, five. And five is frequently. And then I have some blank cards so if some of these don't represent what you do on a daily basis or what environmental behavior you participate in you can add those to those cards and then put them in the pile.

RESPONDENT: Ok. So do I just do it or do you want me to read them out loud?

INTERVIEWER: Yeah, you can read them out loud as you're putting them into the piles.

RESPONDENT: Ok. Bought products made from recycled materials-frequently. Donated money or paid membership dues to a conservation organization-probably a two. Enrolled in courses for

the sole purpose of learning about environmental issues-three. Cut down on the use of your car by using public transportation, carpooling, etc.-four. Recycle glass bottles or jars or aluminum cans-five. Sorted your trash to separate non-recyclable from recyclable materials-five. [0:10:08]

Written to your elected officials expressing your opinions on environmental problems-two. Voted for a politician due to his or her record on protecting the environment-five. Read labels on products to see if the contents were environmentally safe-five. Avoided buying products with excessive packaging-five. Joined in community clean-up efforts-four. Watched TV programs about environmental problems-five. Talked to others about environmental issues-five. Switch from one brand to another due to concern for the environment, I will add one. [0:10:58]

I've taken to make my own cleaning supplies, shampoo, conditioner, body wash, and laundry detergent. Just because I don't trust the ones that you buy in the stores. There's a lot of extra chemicals in there.

INTERVIEWER: Anything else that you would add?

RESPONDENT: I would add, probably go to meetings.

INTERVIEWER: Ok.

RESPONDENT: I don't, I've only written to an elected official once. But I've gone to environmental, or meetings about environmental issues where the public can speak. So I've spoken with elected officials, I've never...

INTERVIEWER: Ok. Yeah, that's a perfect one. Yeah.

RESPONDENT: So, go to meetings.

INTERVIEWER: What meeting did you go to? [0:12:02]

RESPONDENT: The most recent one was for the Natural Resource Board. It was basically, we were talking about invasive species and there was an invasive species that this, I don't know what board it was but it was another board entirely.

INTERVIEWER: It was [the state of] (ph) Michigan, maybe?

RESPONDENT: Yeah, yeah. They were trying to get it put on the invasive species list. And they had to go through all of these hearings and all of these votes and it was just crazy. But it went on the invasive species list. It's called, like the winter soldier or the white soldier. And it's a plant that is like, it's awful. It grows in the water and it actually can cut the human skin the leaves are so abrasive. So...

INTERVIEWER: Wow, ok.

RESPONDENT: Yeah, it was, I'm glad it's on the invasive species list because that would be horrible. But yeah, I've gone to a few of them. [0:13:05] I would probably put that at a four because I don't go a lot just because I don't have a lot of time. But I do that more than I do writing.

INTERVIEWER: Ok. So are there any of these behaviors that might be in the level three or two that you wish you could do more often?

RESPONDENT: Definitely enrolling in courses for the sole purpose of learning more. I don't have the money or the time really. Donating money. I don't have a lot of, there aren't a lot of organizations that I will give money to. Just because I support what they do in general but some of their practices are a little off color so to speak.

INTERVIEWER: How do you know that? Just from doing research on your on? [0:13:53]

RESPONDENT: Yes, a lot of research. I do a lot of, I just do a lot of snooping when it comes to, especially around election time. And I try to be very careful who I give my money to. And I look for who they are tied to. Because it might not be the company itself. It might be who they are connected to or who gives them money.

INTERVIEWER: So your major barriers from what you mentioned were time and money?

RESPONDENT: Yeah.

INTERVIEWER: So what impacts do social interactions like parents, roommates, significant others, friends, have on your choice to participate in these types of behaviors like recycling, consumer, activists type behaviors, education behaviors?

RESPONDENT: In general they haven't really affected me that much. I feel like I have affected them more. My mom and I started heavily recycling after, when I was about 16, because my parents got divorced. So it was just the two of us so we could divide and conquer more. [0:15:01]

But in general, I've gotten my mom to compost. I've gotten my girlfriend to start recycling more. I make, I force my roommates to recycle. We recycle everything. I make them. But yeah, I don't really know. I feel like it's just who I am. I've always just been really passionate about the environment. I don't know that I've ever had any one person who has just impacted me so much. I think it's just experiences and a lot of different people.

INTERVIEWER: Ok. And so what do you do to influence other people's behaviors, then?

RESPONDENT: I depends on who it is. With my roommates, I told them flat out before we signed the lease that we were going to recycle. That was a hard limit for me. With my mom, I just expose her to what I think would be good and she eventually warms up to the idea. [0:15:55]

In general though, I just talk to people. I tell them my opinions. I tell them why I have those opinions. I tell them what I do. I tell them why, how. And I feel like when you take the time to

actually explain to people your opinions and why you think them, not just what you think, but why, they are more likely inclined to either try it out or at least accept it and acknowledge it. Whereas if you just tell them your opinions, they will be like ok yeah, that's great. But I don't know. I just feel like you have to really talk to people about it instead of just throwing opinions at them.

INTERVIEWER: Ok. And so how do you think that behavior that you, that encouraging of others to do and participate in a program and behaviors is influenced by your identity or your environmental identity?

RESPONDENT: I get really, really, I wouldn't say angry, but I get very worked up when I see people throw away plastic. My favorite is when I see people throw away a plastic water bottle when there is a recycling receptacle within arm's reach. [0:17:06] It just, it doesn't make sense. It makes me get really worked up. And so when I talk to people I try and stay calm but it's hard to talk to people about something that you care so deeply about and have them not care. Especially when you know it affects them.

But as for how my identity's shaped it. I feel like it just, I'm really passionate about it. And I can't hide that. I mean sometimes I can be a little bit more cool and collected but in general I'm very up-front. I'm very blunt. I don't shy away from telling people that I think that they are wrong and that I think they need to change. Or, I try not to single people out but in general, I'm just like "We need to change. This is unsustainable." But yeah. I try to be nice about it. Try. [0:17:55]

INTERVIEWER: Well that's good. It probably might get a better...

RESPONDENT: Reaction.

INTERVIEWER: Reaction, yeah. Ok, so do you have any type of time when a social interaction impacted your pro-environmental behaviors? In a positive or negative way.

RESPONDENT: In a negative way, yes. I lived in the dorms for the first two years at Michigan State. And I was with someone. And they were, they, I feel like they almost didn't recycle just to spite me. Like if we were having a fight, they would not recycle. And they would purposefully throw recyclables away just to make me upset. I've had people do that a lot actually. Like if we're fighting, my roommates will throw away recyclables. Or yeah, it's like they are using recycling against me. [0:19:01] I've had that happen a few times actually coming to think about it. So that was definitely a negative impact.

A positive impact is when people actually listen. Because I feel like it's true for everyone that when you're talking about something, especially something that you're passionate about, and people actually take the time to listen and try to understand, it kind of is positive reinforcement that what you think is right, it's good. And it's not just you getting all worked up over nothing. So yeah.

INTERVIEWER: Sure. You get some kind of affirmation and justification for what you're doing.

RESPONDENT: Yeah. Exactly. So that's always positive.

INTERVIEWER: So how has your membership in a group or community influenced your environmental behavior? And it can include maybe courses that you're a part of or something like that too.

RESPONDENT: I'm part of, or I was one of the, I didn't really know what to call myself. We were, have you ever heard of the March Against Monsanto? [0:20:07]

INTERVIEWER: No.

RESPONDENT: March Against Monsanto. It is a worldwide march every year. It's been happening for a while. Where people will come together and they will march against genetically modified organisms. But particularly Monsanto and the influence it has. I am staunchly against Monsanto. I think they should be shut down. I think everything they do is evil and I don't like them at all.

But I helped to set up last year's march back in my hometown of Kalamazoo. And that helped me to connect to the community there a little bit for sure. Back in Kalamazoo my mom and I had a, like a share in the co-op. And so you meet a lot of good people that way. Because there's, it's really nice to be surrounded by like-minded people who care. [0:20:59]

So that was definitely, that got me a little bit more into the local food movement. Back when I was in high school, we would go to the food co-op. And I would be like, all of this food. And it's from local sources. And it kind of got me thinking, where does food come from? What am I eating? So it kind of woke me up a little bit.

INTERVIEWER: And so you said, I wanted you to describe the community and your participation. So the March Against Monsanto and then you're at the food co-op.

RESPONDENT: Yep.

INTERVIEWER: Ok. And your participation in the food co-op was a share owner.

RESPONDENT: Yeah.

INTERVIEWER: And then you were one of the organizers of the March?

RESPONDENT: Yeah.

INTERVIEWER: Ok, great. So, we're going to take these again. And I'll have you put these other new behaviors aside. You can use them for the next part but we'll go ahead and take these out. We're now doing the decision portion. [0:22:04]

RESPONDENT: Oh.

INTERVIEWER: Ok. So you have the same behaviors that you can use. And you can add. So if you want to use these and add more behaviors that have come to mind you can go ahead and do that on these. So I want you to divide those behaviors into two sets. Those that you make decisions quickly, without effort. And those that you make decisions more slowly, or with more effort, or you need to do more research or you're more conscious about them.

So go ahead and put those into those categories and describe how you're making decisions about which ones go into which categories.

RESPONDENT: Ok. Written to your elected officials is definitely a slow decision because I feel like when you write to a politician especially, you have to be well versed in what you're writing about. Donating money, definitely a slow decision because I like to do a lot of research because of ties and sources and whatnot. [0:23:02]

Enrolled in courses for the sole purpose of leaning more about environmental issues. That's a quick decision just because I'm always interested. I like to learn about everything. Especially when it comes to that. Joined in community clean-up efforts. That's a quick decision because I don't really think about it. It's just like volunteering.

INTERVIEWER: And so have you done any volunteering (inaudible at [0:23:26])?

RESPONDENT: Yes, I actually helped clean up the Red Cedar this past summer, fall, fallish. Cut down on the use of your car by using public transportation. That was a quick decision but it was slow in the making. Because I had to figure out a way to use public transportation, carpooling and stuff. But I wanted to. It just took a while to enact. Switch from one brand (coughs). Sorry, I'm getting over a cold. [0:24:03]

INTERVIEWER: That's all right.

RESPONDENT: Switch from one brand to another. (coughs) Probably a quick decision. Because if I'm switching from one brand to another, it's probably because I already did research on it and I knew that I needed to switch.

INTERVIEWER: Ok.

RESPONDENT: Talk to others about environmental issues. Probably a quick decision because it mostly comes up in casual conversation.

INTERVIEWER: So you will take advantage of opportunity.

RESPONDENT: Um-hmm. (cough) I don't like, what's the word I'm looking for? Like accosting people almost? Like jumping on them, I don't like that. Watch TV programs about environmental problems. Quick decision because usually Netflix. I'm like you. [0:25:03]

Avoided buying products with excessive packaging. Quick decision, slow in the making. (cough)
Read labels on products to see if the contents are environmentally safe. Quick decision but a lot of research went into it. So it was, I wanted to. (cough)

INTERVIEWER: Do you want to get some water?

RESPONDENT: Probably. [0:25:33]

RESPONDENT: Okay. Voted for a politician due to his or her record, slow decision, like you do a lot of research, sorted your trash to separate non-recyclable from recyclable, quick decision just because I've always done it, recycled glass bottles or jar or aluminum cans, quick decision because I've always done that, though up here in East Lansing it's really hard to recycle glass, it's really, really hard. You have to actually take it to a recycling center.

INTERVIEWER: Okay, yeah.

RESPONDENT: You can't just put it out in front of your house or ... you actually have to make an effort.

INTERVIEWER: Right.

RESPONDENT: And bought products (inaudible at 0:00:43.8 – speaking over).

INTERVIEWER: So it brought change to how you make a decision about that?

RESPONDENT: I mean I knew that I was going to because I'm very stubborn and I knew I was going to recycle the glass that we had accumulated but yeah I just had to figure out how. I didn't know how I didn't know I didn't even know where the recycling center was. It's on campus (inaudible at 0:01:05.8 – speaking over).

INTERVIEWER: Energy and attention (inaudible at 0:01:07.2).

RESPONDENT: Yeah, it took a lot of extra energy. It takes ... I don't know why they can't just recycle glass but you have to definitely make an effort for sure. Glass and metal are the two big ones. Like paper, (inaudible at 0:01:22.2), plastic is fine but glass and metal are just really like unless you work in a company it's hard to get rid of. Yeah, but bought products made from recycled materials, quick decisions that a way it's a big impact on if I'm between two products I will try and buy what was already recycled and whatnot but. Go to meetings about environmental issues, quick decisions I love them. And make my own cleaning supplies that was a slow decision for many reasons time, money and I didn't know how. So I had to seek out ways to make it I had to look up recipes and look at all these things so it was a slow decision because I didn't know if I could do it but yeah. (0:02:14.7)

INTERVIEWER: Are there any other behaviors that have come up that you would like to add on the card? That you have been thinking about.

RESPONDENT: Not particularly. The one that I could think of is like doing marches or protests for my rental issues and those are a slow decision for sure. Because when you're going to do a protest or you're going to do a march you have to make sure that you're going with the right people because if you go with the wrong people it could be illegal. And a lot of activists, especially the ones that march in a protest, are very passionate, very fired up about it so.

INTERVIEWER: They've taken a dangerous position or something.

RESPONDENT: Exactly, yeah. (0:03:21.5)

INTERVIEWER: So can you describe a behavior? You've kind of done this a little bit but that you placed in the fast pile saying that you make quick decisions about it at one time but at another time it was a slow decision. So maybe you've mentioned some of those decisions were slow in the making.

RESPONDENT: Yeah.

INTERVIEWER: So could you look through the pile and decide on which decisions are in the quick pile now but were in the slow pile at one point?

RESPONDENT: Man oh man. Cut down on the use of your car that's in the quick decision pile but it was slow in the making because you have to figure out public transportation, you have to figure out if you can carpool, there's just a lot of like you were so use to using our car for everything.

INTERVIEWER: So would you say that if you moved to another community would it be easier for you now to cut down on driving or would it still be a slow decision at that point too? (0:04:33.9)

RESPONDENT: That would be a slow decision especially if I had never been there before because a car is a lot ... it makes you feel a lot less vulnerable so if you don't know a place you're not going to want to take the bus everywhere at first you're going to want to drive around scope it out a little bit before you make any like public transportation efforts. But definitely that one. I mean some of these like the avoided buying products because of the packaging, the red labels on the products, the switch from one brand to another, all of those bought products made of recyclable materials all of these are I mean I did research for all of these. Because when you switch from one to another you do research and you're looking at buying products with less packaging, you want to make sure that even though they have less packaging they'll still be environmentally safe. And you want to make sure that all of these things are still good so all of these were slow in the making just because I did research. But they were ... I didn't think about them meaning I didn't have to like pros and cons like will I do this it was more of a how and what instead of will I or not. (0:06:12.9)

INTERVIEWER: So meaning you had an intention of doing ...

RESPONDENT: Yeah.

INTERVIEWER: A thing like that but you had to find out the ways of making them work for you.

RESPONDENT: Exactly, but yeah that's what I ... So I guess these were all slow decisions at first but they ... it was more because I had to do research a lot of research.

INTERVIEWER: And so ... sorry there was a question that came to mind and now ... So now are they they're fast decisions you don't there's not much effort that you put into to buy materials that are recyclable?

RESPONDENT: Not nearly. Like especially now I know a lot of the companies. I know companies which is what I look to I don't really look at the product I look at who made it. So like I don't buy anything from Johnson & Johnson, I don't buy or I try not to buy Kraft like there's just ... I shop by brand but kind of in the meaning I don't buy certain brands or I try really hard not to. (0:07:19.1)

INTERVIEWER: All right and so let's do the opposite. Were there any behaviors that you placed in the slow pile that at one time you made the decision quickly and automatically? And what caused the shift in the amount of effort and consciousness in your decision making?

RESPONDENT: The only one that was in slow pile that I would say maybe was the donating money one. And that was like back when I was a little bit less well versed I suppose. I donated money to like World Wild Life Fund and I donated to Sierra Club and I donated to like all these conservation, we have a little traverse conservation unit up in the north so that before I kind of realized that I had to watch out for things like political ties but that use to be a quick decision.

INTERVIEWER: So donating money? (0:08:14.0)

RESPONDENT: Or quicker.

INTERVIEWER: And being a member. So what made that shift happen?

RESPONDENT: Well, my mom was a politician so I kind of knew that a lot of politicians have like an ulterior motive you know they all do they all have a hidden agenda which is fine. Most of them are good but some of them are bad and I guess I started to realize that organizations had to get support from somewhere and the bigger the organization the more powerful their compatriots. So that's when I started to wonder like I'm donating money to them but where is money actually going. So that kind of changed my perspective a little bit.

INTERVIEWER: Sure. And so what else would you like to know or need to know in order to make better decisions about any of these particular issues? Or maybe what are some things that you did to learn more about them? (0:09:12.9)

RESPONDENT: I read a lot. I know it's Facebook – we live in Facebook – I like things on Facebook and I read a lot of articles. But I read articles from all sides I try not to read from just one perspective because I feel like that's bias. But like for GMOs I've done extensive research for like certain plastics I've done research for them, for different memberships and organizations I've done a lot of research especially for the World Wild Life Fund and Sierra Club. But I just do I read a lot I try and keep up-to-date on a lot of things so I know things change but I try to stay in the know always. For watching TV programs I try and they don't come out too often because I mean no one really likes to watch about environmental problems, kind of depressing, but in general I try and like watch as many as I can for about different phenomena. For classes I do try and like at least take online like free like little snippet classes and things like that. And for community cleanup efforts ... (0:10:35.4)

INTERVIEWER: That deal with environmental issues?

RESPONDENT: Yeah. Or if they don't exclusively deal with environmental issues at least are somewhat like hinted at them or just focus on like a certain environmental issue. But in joining in community cleanup effort I'm in the College of Natural Resources so we get e-mails about those all the time. I don't even have to seek them really they come to me. So yeah definitely.

INTERVIEWER: So how do you think the way you make these decisions is related to your identity as an environmentalist or a variety of other things that you listed? (0:11:13.2)

RESPONDENT: Well, definitely from the UP standard we're really good at recycling. We've recycling centers that are probably five minutes away from your house in any which direction.

INTERVIEWER: (inaudible at 0:11:31.6).

RESPONDENT: Yeah, I mean the bigger cities were pretty good about it. But it also is like we have the little Traverse Bag Conservation Unit they're very small they focus on one area. I like that the conservation movement in the UP and even just northern Michigan they focus on areas. So they don't like try and cover this whole expanse and try and fund this whole project it's more that they take funding from the locals or anyone who you know will give them money and they will work on that area. So I feel like it gets more done from a local standpoint just because it's less people it's less area but it's more efficient. So that's how I feel about that. And as an environmentalist I just I feel like recycling should just be something everyone does. I feel like everyone should be cutting back on using their car. I feel like everything that environmentalists do everyone should do just because I mean the only difference between an environmentalist and a not-environmentalist I guess is that we care about having some place to live and they're trying to remain ignorant to the fact that we only have one planet. (0:12:52.1)

INTERVIEWER: So it's kind of a frame of reference?

RESPONDENT: Yeah.

INTERVIEWER: How we make decisions?

RESPONDENT: Yeah.

INTERVIEWER: All right, all right let's do this one. So we're going to put them into sets again those behaviors.

RESPONDENT: Okay.

INTERVIEWER: Those that are critically important for future of the earth, those are moderately important and those that are least important. And so ... and then you can add like we did before add any behaviors you want. And then explain ... as you're doing it just explain why you decided those behaviors go into those three categories? (0:13:24.6)

RESPONDENT: Okay. Donated money or paid membership to a conservation (inaudible at 0:13:32.2), I would say moderately important. Voted for a politician due to his or her record of protecting environment I would say critically important. Do you want me to explain why?

INTERVIEWER: Yeah, if you could as you go along.

RESPONDENT: That is critically important just because we live in a government so if you don't pick people to you know lead the government in the right direction we don't stand a chance of protecting the environment. Written to elected officials I would probably least important just because I mean it is important to try and have your voice heard but in general the track record of elected officials actually reading letters and actually like listening to the citizenry from that standpoint is very sparse. Recycle glass bottles or aluminum cans I think that is critically important just because recycling is very important. Sorted your trash to separate non-recyclable from recyclable material critically important for the same reason I feel like everyone should recycle. (0:14:42.7)

INTERVIEWER: So why is it critical? So what is about recycling that is critical where other things aren't?

RESPONDENT: I feel like recycling is that one thing that everyone can do. And if we get away from that oh this broke so we need a new one instead of oh it broke we need to fix it if we get away from that mindset we'll be better off as a people just wholly like not even just from the environmental standpoint but from a social standpoint too. Our character as a country has changed dramatically since World War II and I feel like we need to start swinging back to that conservationist like reuse, reduce, recycle like that. (0:15:28.0)

INTERVIEWER: So when you think of recycling it's almost an umbrella term for reusing ...

RESPONDENT: Yeah, yeah.

INTERVIEWER: And consuming less.

RESPONDENT: Uh-hmm.

INTERVIEWER: Not just buying and buying and then recycling it later?

RESPONDENT: Yep but it's more of a use what you need but don't be excessive.

INTERVIEWER: I see.

RESPONDENT: And if you don't need anything or something any more recycle it back into the ... back into the pot sort of speak. So that's what I mean when I think of recycling. Brought products made from recycled materials I would say that's moderately important because it is important to see that things are recycled back but a lot of products, even though they are made from recycled materials, it's only like 60 percent or 50 percent so there's still a portion of the materials that was new raw material so. Switch from one brand to another due to concern for the environment I feel like that is critically important just because it shows that people care enough to actually make the switch and be informed about it. And an informed citizenry will get us farther than an ignorant one so. Read labels on products to see if the contents were environmental safe I think that's critical because again it shows that people care enough to know and to seek out that information. Avoided buying products with excessive packaging I would say that's moderately important because it just goes back I mean even if you buy something that doesn't have excessive packaging you're still buying something with packaging so. (0:17:06.3)

INTERVIEWER: So that's going into the reusing instead of buying new?

RESPONDENT: Yeah, yeah. Watch TV programs about environmental problems I would say that's least important I mean I like them and it's good to know if they're informative but it doesn't mean that everyone should have to watch them, you know what I mean?

INTERVIEWER: Uh-hmm.

RESPONDENT: Only can get you so far. Talk to others about environmental issues is definitely critically important because we listen to each other more than we listen to ... you listen to people you know more than you listen to strangers. So if like we're strangers so something I say might not have much of an impact but if your best friend were to say the same thing it would definitely hold more meaning and more of an impact for you. So definitely spread the word. Joining community cleanup efforts I think that's critically important because it not only gives a sense of community in doing something that matters but it also shows that people care which is something that we need. Enrolled in courses for the sole purpose of learning more about environmental issues I put that probably at moderately because I mean it is important but you don't have to just enroll in courses. You can read books from the library or read articles online. (0:18:27.8)

INTERVIEWER: And so what do you think enrolling in courses about environmental issues would do or help or what is the purpose of doing that going to courses?

RESPONDENT: I mean I personally love taking classes just for the heck of it you know it's fun because it's like no stress you can actually enjoy the class. But I feel like when you enroll in a class it's like it takes on a different perspective so like if I were ... if there were a class on GMOs

and I had the choice of either taking that class or just doing my own research you take a class to become an expert on something or at least like an expert you know like a novice sort of speak. (0:19:10.6)

INTERVIEWER: Sure.

RESPONDENT: So if you took a class about an environmental issue that you were super, super passionate about you really wanted to learn more I feel like that's good it's important but it's also important to be able to expand out on your own without the framework of a class. Cut down on the use of your car by using public transportation or carpooling that's definitely critically important just because fossil fuels are low we don't have that many left it's getting a little direr because we're using up more than we even know because we're not paying enough attention. Doing marches or protests I think that's critically important because people can ignore a letter but it's harder to ignore a protest that's happening right outside their window. So I mean it shows discontent it shows that these people actually care they're not disillusioned there's no changing their mind you have to take care of it so it's just harder to ignore. (0:20:11.9)

INTERVIEWER: Sure.

RESPONDENT: Annoying.

INTERVIEWER: Disappointing.

RESPONDENT: Exactly. Go to meetings about environmental issues I would say that's moderately important. I mean going to meetings is definitely very important and especially because you learn from everyone that was there. But I mean it's not super important that everyone goes to meetings. Make my own cleaning supplies I think it's critically important because you use less packaging, you use less overall raw materials and I think it's just better for environment you don't put things that harmful into the environment. And you control it more you have more control over everything every step of the process so.

INTERVIEWER: So which one of these was the easiest decision to make?

RESPONDENT: Critically?

INTERVIEWER: Uh-hmm.

RESPONDENT: Yeah, because the ones that are critically important I know have to happen. Least important was hard because I don't think any of them are least important like (inaudible at 0:21:11.2) are important to it but I suppose these are the ones that if they didn't happen a lot it wouldn't be the end of the world. Moderately important was definitely really hard because they're still all really important but not everyone has to do them or at least not a large portion of them has to do it for anything for like a bad negative impact, if that makes sense.

INTERVIEWER: And you mean when you mean negative impact you mean a negative impact for environmental issues or problems?

RESPONDENT: Yeah, yeah.

INTERVIEWER: Or for the change to happen for the problems?

RESPONDENT: Uh-hmm. Yeah, so I mean if people don't go to meetings about environmental issues I mean they won't know as much but it's not like climate change will get worse because people didn't go to those meetings.

INTERVIEWER: So which behavior was easiest to categorize?

RESPONDENT: Critically important.

INTERVIEWER: Like which individual behavior?

RESPONDENT: Oh, which individual behavior ...

INTERVIEWER: Yeah.

RESPONDENT: Was easiest? Anything to do with consumer choices.

INTERVIEWER: Why? (0:22:15.5)

RESPONDENT: Because I feel like we're run by our economy and you have to make smart choices you vote with your dollar and it's just it's very important for people to start caring. And I feel like the more people that care the more companies that will care the more switch that we can have but if people keep not caring then the companies will be like oh they still don't care we can still make this product that is environmentally unsafe it uses excess packaging it does this it does that it's not recyclable so that's very important to me. Because we do we vote with our dollar and we buy everything we buy clothes, we buy food, we buy paper, we buy pens, we buy tables.

INTERVIEWER: And so which one was the hardest for you? Like individual behavior like?

RESPONDENT: Probably the same one consumer just different the avoided buying products with excessive packaging and buy products made from recyclable materials because those are still I mean consumer and they're still important but I feel like they're less important than buying things that are known to be environmentally safe. Because even if they're made from recycled materials that can be anything from starting to like 70 percent you don't know how much. (0:23:59.0)

INTERVIEWER: Right, and sometimes products were put back on (inaudible at 0:24:01.6 – coughing). On the front and then people just don't even think twice about it.

RESPONDENT: Uh-hmm.

INTERVIEWER: Or look into it.

RESPONDENT: Uh-hmm.

INTERVIEWER: Yeah. So one last question so you were given this on your survey 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. And so based on that which of these would you decide to live in? In an apartment in a city, a small house in the city, a small house in the country?

RESPONDENT: When you say city do you mean like a big city?

INTERVIEWER: Yeah.

RESPONDENT: Probably a small house in the country.

INTERVIEWER: And so why?

RESPONDENT: I don't like cities they're loud and they're ... the air isn't clean, there's more pollution overall like the streets aren't clean and I feel like the country is just ... it's closer to nature. I just don't like ... I don't like feeling closed in by everything you know like the big buildings and the noise. Some people love it I just I don't like it at all. East Lansing is a little big for me. Yeah, I actually picked my apartment because it's two miles off of campus. Yeah, so no definitely the country I would I've never wanted to live in the city. (0:25:26.9)

INTERVIEWER: And so were you able to make that decision fairly quickly or in a slower fast way? So intentionally was it an intentional decision or would it be an intentional decision or would it be something that would be very fast not much effort?

RESPONDENT: In general it would be a fast decision like I don't want to live in the city but the actual like application of it I feel like would take longer just because I mean just because I don't like the city doesn't mean whoever I'm living with, my girlfriend, doesn't want to live in the city. Or my job might be in the city so it might be more feasible to live in the city or all of these things I just ... I know that I don't want to live in a big house and I know I don't want to live in a big city and those are about the only two restrictions I have as of right now on where I want to live. (0:26:16.7)

INTERVIEWER: What else would you need to learn before making the decision?

RESPONDENT: I would need to learn more about the city that I was living in. So like big cities like Ann Arbor and Grand Rapids they're you know like super artsy and they're super fabulous or whatever. But and then you have cities that are like Flint and Detroit which are also big but also they're dangerous and you wouldn't really want to live there. So I guess it's more like learn about your environment, learn who lives there what kind of people live there.

INTERVIEWER: What about when you're thinking for environmental reasons?

RESPONDENT: Oh, they would have to recycle. They would have to be have a good recycling program. Food co-op would be lovely. Farmer's Market would be even better. Just very conscious of certain environmental practices so they would be taking acts towards cutting their carbon emissions, they would be acknowledging that they have carbon emissions that's a first that's a big step for a lot of governments. They would be putting man force and money into protecting the environment so they would be putting defensive expenditures in. But yeah they would definitely ... they would have to be doing at least something like I couldn't live in a city that's just throwing out plastic bottles this way and that that would be I couldn't do that.
(0:27:48.4)

INTERVIEWER: And so how did your identity come into play when making a decision about where you're living especially your environmental identity?

RESPONDENT: Oh, I definitely want to live near water. I don't know that I want to stay in Michigan just because of certain political moves but I definitely want to live by water. I would love to live in Oregon or Washington somewhere that's very nature minded. They love organic food, they love all of these things that I love so being near likeminded people would definitely be a big thing. Somewhere where nature or man hasn't completely destroyed nature but where nature is also accessible so like nature trails or state parks and things like that. But yeah I know I would never I couldn't live in like a desert. I couldn't live in Savanah or somewhere where it was hot all the time or where water was not abundant. But water is definitely a big thing.
(0:28:56.9)

INTERVIEWER: All right. Well, that's all I have for you today.

RESPONDENT: Okay.

INTERVIEWER: I really appreciate this.

END TRANSCRIPT

APPENDIX F

Qualitative Coding

Table 28.

Qualitative Coding Workbook

1=infrequently 5=frequently Participant Name	Avoided buying products with excessive packaging	Recycled glass bottles or jars or aluminum cans	Sorted your trash to separate non-recyclables from recyclable materials	Written to your elected officials expressing your opinions on environmental problems	Voted for a politician due to his or her record on protecting the environment.	Joined in community cleanup efforts	Donated money or paid membership dues to a conservation organization	Cut down on the use of your car by using public transportation, car pooling, etc	Bought products made from recycled materials	Switched from one brand to another due to concern for the environment	Read labels on products to see if the contents were environmentally safe	Enrolled in courses for the sole purpose of learning more about environmental issues	Watched TV programs about environmental problems	Talked to others about environmental issues
Ryan	4	5	5	1	1	4	5	3	4	1	3	5	2	5
Kim	1	5	3	1	1	3	2	3	3	1	1	2	2	1
Molly	5	5	5	2	5	4	2	4	5	5	5	3	5	5
Savannah	4	5	5	1	4	4	1	5	5	4	3	3	5	1
Katie	1	5	5	1	1	3	1	2	4	4	1	1	1	1
Olivia	4	5	5	1	2	1	1	4	2	4	5	5	4	5
Renee	4	5	5	1	1	2	1	4	2	1	3	1	2	4
Ansel	1	5	5	1	1	2	1	5	4	3	3	3	2	4
Mean	3	5	4.75	1.125	2	2.875	1.75	3.75	3.625	2.875	3	2.875	2.875	3.25
Standard Deviation	1.690308509	0	0.7071067812	0.3535533906	1.603567451	1.125991626	1.38873015	1.035098339	1.187734939	1.642080562	1.511857892	1.552647509	1.552647509	1.908627031
Question about Fast and Slow Thinking Fast=1 Slow=2 Participant	Avoided buying products with excessive packaging	Recycled glass bottles or jars or aluminum cans	Sorted your trash to separate non-recyclables from recyclable materials	Written to your elected officials expressing your opinions on environmental problems	Voted for a politician due to his or her record on protecting the environment.	Joined in community cleanup efforts	Donated money or paid membership dues to a conservation organization	Cut down on the use of your car by using public transportation, car pooling, etc	Bought products made from recycled materials	Switched from one brand to another due to concern for the environment	Read labels on products to see if the contents were environmentally safe	Enrolled in courses for the sole purpose of learning more about environmental issues	Watched TV programs about environmental problems	Talked to others about environmental issues
Ryan	1	1	1	2	2	1	2	Middle	1	2	2	2	1	2
Kim	2	1	1	2	2	1	2	1	2	2	2	2	2	1

Table 28 Cont'd Molly	2	1	1	2	2	1	2	1	1	1	1	1	1	1
Savannah	1	1	1	2	2	1	2	2	1	1	1	1	1	1
Katie	1	1	1	2	2	1	2	1	1	1	2	1	1	1
Olivia	2	1	1	2	2	2	2	1	2	1	2	1	1	1
Renee	1	1	1	2	1	2	2	1	2	1	2	2	2	1
Ansel	1	1	1	2	2	2	2	1	1	2	2	1	2	1
Mean	1.375	1	1	2	1.875	1.375	2	1.1428571 43	1.375	1.375	1.75	1.375	1.375	1.125
Standard Deviation	0.51754 91695	0	0	0	0.353553 3906	0.70710 67812	0	0.3779644 73	0.51754 91695	0.51754 91695	0.4629100 499	0.517549 1695	0.517549 1695	0.353553 3906
Importance for the future of the Earth Participant	Avoided buying products with excessive packaging	Recycled glass bottles or jars or aluminum cans	Sorted your trash to separate non-recyclables from recyclable materials	Written to your elected officials expressing your opinions on environmental problems	Voted for a politician due to his or her record on protecting the environment.	Joined in community cleanup efforts	Donated money or paid membership dues to a conservation organization	Cut down on the use of your car by using public transportation, car pooling, etc	Bought products made from recycled materials	Switched from one brand to another due to concern for the environment	Read labels on products to see if the contents were environmentally safe	Enrolled in courses for the sole purpose of learning more about environmental issues	Watched TV programs about environmental problems	Talked to others about environmental issues
Ryan	critical	critical	critical	critical	critical	critical	moderate	moderate	moderate	moderate	moderate	critical	least	critical
Kim	moderate	critical	critical	least	moderate	moderate	least	moderate	moderate	moderate	least	least	least	least
Molly	moderate	critical	critical	least	critical	critical	moderate	critical	moderate	critical	critical	moderate	least	critical
Savannah	moderate	critical	critical	least	critical	critical	moderate	critical	moderate	critical	critical	least	moderate	moderate
Katie	moderate	critical	critical	critical	moderate	critical	critical	moderate	critical	critical	critical	critical	least	critical
Olivia	critical	critical	critical	moderate	critical	moderate	N/A	critical	N/A	critical	critical	critical	least	critical
Ansel	critical	critical	critical	least	least	critical	moderate	critical	moderate	critical	moderate	moderate	moderate	critical
Renee	critical	critical	critical	moderate	moderate	critical	moderate	critical	important	critical	critical	moderate	moderate	critical

Appendix G

Additional Quantitative Data

Table 29.

Descriptive statistics for the Education and Sustainability group scores on the Environmental Identity subscales.

Construct	Participant Groups	N	Mean	SD	Min	Max
Self Concept	Education	233	19.2	4.85	6	30
	Sustainability	62	22.5	4.87	9	30
	Total	295	19.9	5.03	6	30
Ideology	Education	236	17.9	3.50	6	25
	Sustainability	62	21.2	3.18	12	25
	Total	298	18.6	3.68	6	25
Positive Experiences with Nature	Education	235	10.5	2.65	3	15
	Sustainability	62	11.7	2.37	4	15
	Total	297	10.7	2.64	3	15
Interaction with Nature	Education	235	19.0	4.99	6	30
	Sustainability	59	22.2	4.36	13	30
	Total	294	19.6	5.03	6	30
Group Membership	Education	235	5.73	1.87	2	10
	Sustainability	62	7.44	1.92	2	10
	Total	297	6.09	2.00	2	10
Values and Priorities	Education	237	7.11	2.17	2	10
	Sustainability	62	8.06	2.01	2	10

Table 29

(Cont'd)

Total	299	7.30	2.17	2	10
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Table 30.

ANOVA results for the comparison of the Education participants and the Sustainability participants mean scores on the Environmental Identity Scale subscales.

Construct		Df	F	p
Self Concept	Between Groups	1	22.0	.000**
	Within Groups	293		
	Total	294		
Ideology	Between Groups	1	44.7	.000**
	Within Groups	296		
	Total	297		
Positive Experiences with Nature	Between Groups	1	10.5	.001**
	Within Groups	295		
	Total	296		
Interaction with Nature	Between Groups	1	20.8	.000**
	Within Groups	292		
	Total	293		
Group Membership	Between Groups	1	40.4	.000**
	Within Groups	295		
	Total	296		

Table 30 (Cont'd)

Values and Priorities	Between Groups	1	9.86	.002**
	Within Groups	297		
	Total	298		

** $p < .01$

Table 31.

*Test of Homogeneity of Variances between Education and
Sustainability Environmental Identity subscales*

Construct	Levene Statistic	p
Self Concept	.001	.982
Ideology	.665	.416
Positive Experiences with Nature	2.814	.094
Interaction with Nature	1.640	.201
Group Membership	.200	.655
Values and Priorities	1.081	.299

Table 32.

ANOVA results for the comparison of the Education participants and the Sustainability participants mean scores on the Environmentally Responsible Behaviors Index subscales.

Construct		Df	F	Sig.
Consumerism	Between Groups	1	22.4	.000**
	Within Groups	296		
	Total	297		
Activism	Between Groups	1	19.6	.000**
	Within Groups	296		
	Total	297		
Education	Between Groups	1	74.7	.000**
	Within Groups	297		
	Total	298		
Recycling	Between Groups	1	10.4	.001**
	Within Groups	296		
	Total	297		

** $p < .01$

Table 33.

Test of Homogeneity of Variances between Education and Sustainability participants on Environmentally Responsible Behaviors Index subscales

Subscale	Levene Statistic	p
Consumerism	.000	.991
Activism	6.926	.009**
Education	.063	.803
Recycling	9.153	.003**

** p < .01

Table 34.

Test of Homogeneity of Variances between the Education and Sustainability groups Environmental Identity Scale and Environmentally Responsible Behaviors Index scores

Survey	Levene Statistic	p
Environmental Identity	.526	.469
Environmental Behaviors	.027	.870

Table 35.

Descriptive statistics for each item on the Decision Making Questionnaire for Education and Sustainability groups

Construct	Participant Group	N	Mean	SD
Slow/Fast	Education	235	3.51	1.02
	Sustainability	61	3.79	1.08

Table 35 (Cont'd)	Overall	296	3.57	1.04
Effort	Education	235	3.58	1.08
	Sustainability	61	3.75	1.23
	Overall	296	3.61	1.12
Automaticity	Education	235	3.27	1.07
	Sustainability	61	3.26	1.26
	Overall	296	3.27	1.11
Thinking capacity	Education	235	3.73	1.05
	Sustainability	61	3.87	1.09
	Overall	296	3.76	1.05
Certainty	Education	236	3.92	1.01
	Sustainability	61	3.85	1.11
	Overall	297	3.90	1.03
Emotions	Education	235	2.79	1.10
	Sustainability	61	3.41	1.23
	Overall	296	2.92	1.15

Table 36.

ANOVA results for the individual Decision Making Questionnaire items comparing the Education and Sustainability groups

Construct		Df	F	p
Slow/Fast	Between Groups	1	3.45	.064
	Within Groups	294		
	Total	295		
Effort	Between Groups	1	1.20	.275
	Within Groups	294		

Table 36 (Cont'd)	Within Groups	294			
	Total	295			
Automaticity	Between Groups	1	.001		.971
	Within Groups	294			
	Total	295			
Thinking capacity	Between Groups	1	.816		.367
	Within Groups	294			
	Total	295			
Certainty	Between Groups	1	.180		.672
	Within Groups	295			
	Total	296			
Emotions	Between Groups	1	14.8		.000**
	Within Groups	294			
	Total	295			

** p < .01

Table 37.

Test of Homogeneity of Variances for the individual Decision Making Questionnaire items

Question	Levene Statistic	p
Slow/Fast	.022	.882
Effort	1.372	.242
Automaticity	6.252	.013*
Thinking Capacity	.041	.840
Certainty	3.232	.073

Table 37 (Cont'd)

Emotions	2.771	.097
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Note * $p < .05$

Table 38.

Mann-Whitney test results for the individual items on the Decision Making Questionnaire

	Fast/Slow	Effort	Automaticity	Thinking Capacity	Certainty	Emotions
Mann-Whitney	4	4	3	4	4	3
p	.045*	.145	.907	.266	.803	.000**

Note. Grouping Variable: Participant group (Education and Sustainability) * $p < .05$, ** = $p < .01$

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