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**GROWING ROOTS: REWILDING, TRANSFORMATIVE LEARNING, AND
ECOLOGICAL CONSCIOUSNESS IN NATURE CONNECTION**

A Dissertation in

Adult Education

by

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ABSTRACT

The purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners' cultural and ecological indigeneity and their practice as educators. This primarily qualitative study is strongly informed by ethnography and uses the theoretical frameworks of transformative learning theory, a "Soulcentric" model of psychological development, and emerging literature on rewilding, to analyze ethnographic interviews with seven adult educators and nature connection learners. The personal experiences of the researcher learning nature connection are incorporated as autoethnographic reflections throughout. This study includes a small quantitative component: a validated 21 item Nature Relatedness survey, to explore participants' nature connection.

The quantitative findings demonstrated the presence of nature relatedness and an ecocentric worldview among participants. Qualitative findings revealed three interrelated themes regarding the process of learning to connect to nature and growing an ecocentric world view. The first demonstrates two primary qualities of the participants' ecocentric worldview: viewing the world as ensouled and seeing the world as an interrelated system. A second theme is the process of developing a connection to nature and an ecocentric worldview. Finally, the third theme identifies four elements of the transformative process of learning an ecocentric worldview: gradual change, integrating and orienting communal events, spirituality, new pedagogical approaches and perspectives. The findings are examined in light of transformative learning theory, the "Soulcentric" model of psychological development, and emerging literature on rewilding. The study concludes with implications for theory and practice and offers suggestions for future research.

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Chapter 1

Introduction

In the summer of 2017, I was transitioning from a career in the arts and culture nonprofit world to teaching at a community college. The desire to work more directly with education had been bubbling for months, and when an opportunity presented itself to make a change, a yearning to return to teaching rose fully to the surface, and I seized the chance at once. As exciting as this change was, I also felt a loss for the career I had been building as a public folklorist, the field in which I had studied and created a professional network. As a public folklorist, I researched, documented, and collaborated with local communities to present their traditional knowledge and cultural expressions to the public as a way to inspire curiosity and understanding that the vernacular practices we take for granted are really the fabric that ties a community together. Was my background and research in folklore now simply to be a credential that allowed me to teach, or was there a way to infuse the study of local culture into a community college English department to help my students on their own professional journeys? As I pondered this question I traveled to England to take part in a week-long intergenerational camp called Art of Mentoring, based on nature connection and resilient community building. What I found there was an inspiring vision of adult education towards resilient communities based in an ecological consciousness.

The goal of the week-long camp was to create an intergenerational community based in nature connection in order to create an immersive experiential learning environment around socioecological sustainability. There are several Art of Mentoring camps that take place annually or bi-annually in the U.K. and U.S., based on a model created by the 8 Shields Institute, a nature-based community building nonprofit. Grounded in the premise that “Deep in all of our roots,

there are stories of ancestors living in healthy, regenerative communities — villages where people of all ages were in deep relationship with the land, each other, and themselves,” the Art of Mentoring camps create week-long, intergenerational communities that are “designed to help us remember these old ways of awareness and mentoring and learn to apply them to our modern communities” (Regenerative Roots, 2020). Participants take part in experiential workshops in nature-based mentoring and community design, species identification, tracking, wilderness skills, wild harvesting and handicraft, storytelling, and ritual, with activities designed to include infants to elders (Vermont Wilderness School, 2020).

I have long been interested in human relationships with the land. My research specialty in folklore had been the relationship between pilgrimage traditions and landscapes, and my subsequent research in foodways sprung in part from an interest in how food connects us to place. Twin dreams of mine were to undertake a long-distance pilgrimage and chart the traditions that grew from that ground, entwining to create a network of belief, and to raise my own food, living a connection between the land and sustenance and relearning traditions of sustainability. When I returned home from the camp I had a new perspective on this long-held fascination with land and place, and it seemed to me that I had been chasing after something in my previous research that I had never quite grasped – the deep human need for connection with nature.

This realization was pivotal, though subtle. To another’s eyes, my outward life and inner values would not have seemed much changed, but I began to see things in a different light. I arrived home and became acutely aware of my natural surroundings – the murmuration of starlings in the abandoned house next door; the patterns in the bark on the trees in the neighbors’ yards; the changing locations of the rising and setting moon; the teeth marks on tree trunks along the streambank where I often walked (Were they from beaver? Did beaver still live in this area?).

As I began to notice more of my immediate environment I wanted to understand it more, so I began reading local naturalist books and books on local history. When I sighted a bird on a walk I would try to memorize its markings so I could look it up when I arrived back home. I started to hear a difference in bird calls in the backyard and noticed the alarm calls they would make as I would tramp through the woods on my walks. And I became more curious about those places around me that were just outside of my awareness but were clearly connected to the place I lived – where did my water come from, after all? What was just beyond the mountains that I could see from my front porch? How far upstream was the source of the local creek and through which communities did it run? What debris might be floating downstream from those communities until it reached the creek’s confluence with the Hudson, where locals met to fish for sport and supper?

With each of these questions my awareness of the interrelationship of all of the minutia of my local environment grew, as did my awareness of my own role in that environment. An awareness of our proximity to the local reservoir brought the realization of the finiteness and vulnerability of our water supply, and my daily role in its depletion. An awareness of the tiny strands of plastic constantly blown into my garden from a neighbors’ poorly tarped roof brought the realization that on a windy day (and there are many in the Hudson Valley) any of the plastic from my recycling bin could similarly end up in a neighbor’s yard, despite my good intentions. In short, as I became more aware of the network of relationships in which I lived, I began to feel more responsible for maintaining a right relationship with all those with whom I am connected.

This shift in how I saw the world and my place in it was not purely cognitive; it was accompanied by the adoption of nature connection practices that I had learned at the weeklong camp and that I continued to develop through subsequent nature connection programs in 2018 and 2019. Perhaps most significantly I developed a nature meditation or “sit spot” routine of

observing the nature around my home. I would start the day by sitting on my front or back porch observing with all of my senses what was occurring around me, eventually learning the patterns of my little patch of the eco-system – the sounds of the cat who shortly after dawn rustled the hydrangea bush it used as cover to stalk sparrows; the feel of the air on days when mist would slide down the eastern mountains and burn off slowly as the sun rose higher; the distinct flight of the mourning doves roosting on telephone wires until traffic along the street began to pick up. Perhaps inevitably, my sit spot practice was accompanied by a gratitude practice as I intentionally articulated my appreciation and respect for the natural phenomena around me and the benefits they afforded me. All routines are prone to disruption, and these routines have been no exception, but they have nonetheless become habits that I gravitate back to and remain committed to now four years after first learning them.

Emotionally, I also grew as I continued to develop relationships with the friends I made through nature connection events. As these friendships deepened through dialogue about our nature connections experiences and the role of the land informing and continuing culture, I noticed a new openness, trust, and confidence that I was able to bring to other relationships. Through our group conversations I also learned to identify and articulate the affective meanings nature held for me and to value these despite fears that others might dismiss them as overly sentimental or contrived. In this supportive atmosphere, sharing our experiences in nature seemed to be an important element in coming to understand and appreciate those experiences for ourselves. Observing this process, it occurred to me that I might be witnessing transformative learning in action.

In the fall after my first experience at a nature connection encampment, as I began teaching composition and rhetoric at Bronx Community College, I found myself in a new

environment, both ecologically and socially, and I wondered what my unique contribution might be in this very different socio-ecological system. Challenged by the thought of fostering nature connection in an extremely urban environment, I was inspired by the work some of my new friends were doing bringing nature connection to urban students and I began to ponder what I, as an adult educator, might do to help foster nature connection among my adult students. This question has led to my current research study.

Background to the Problem

We live in a time of widespread ecological disruption (Barnosky et al., 2011; Burkhead, 2012; Carpenter et al. 2008; Dybas, 2005; Estes et al., 2011; Jackson, 2008; Laurance, 2006; Millenium Ecosystems Assessment, 2005; Radchuck et al., 2019; Roe, 2019; Thiel et al., 2018). Ecologist and educator David W. Orr (2004) argues the source of the current ecological crisis “is a failure to educate people to think broadly, to perceive systems and patterns, and to live as whole persons” (p. 2). Echoing Orr’s concern, researchers in adult education such as O’Sullivan (2012) and Lange (2012) have argued that achieving socio-ecological sustainability will require transformative learning experiences that lead individuals to perceive their interconnectedness with nature and all living and nonliving beings. If, as Orr, O’Sullivan, and Lange suggest, an awareness of connection to nature is essential for attaining global socio-ecological sustainability, and formal education should play a role in fostering this connection, then what does the process of learning to be connected to nature look like, how is it accomplished, and what role does the educator play?

To better understand the relationship between adult education and nature connection it will be necessary to consider the literature on adult environmental education, nature connection, and rewilding.

Adult Environmental Education

Those who view the field of adult education as a tool for social progress see adult education as a catalyst for radical sustainability and ecojustice education (Griswold, 2017). Radical sustainability, associated with strong sustainability, is an approach to sustainability that views nature as intrinsic to human survival and does not view humans as superior to other living beings (Orr, 1992). This paradigm of sustainability is in opposition to weak sustainability, also known as sustainable development, which is based on the idea that human capital can replace natural capital and that scientific rationality, technological solutions, and economic growth are key to addressing the economic problems caused by environmental degradation (Edwards, 2005; Orr, 1992; Solow, 1993). Noting that education has too long overlooked its own ecological dimensions, Griswold (2017) urges educators to address this deficiency by teaching students to recognize that “[o]ur attitudes and worldviews toward the environment are bound up in our current system, which perpetuates the injustice we seek to end” (Griswold, 2017, p.12). Adult educators working in sustainability, ecojustice, and environmental education are doing so in formal educational contexts in higher education (Dentith & Thompson, 2017; Karlovic & Patrick, 2003); nonformal educational programs, such as environmental literacy programs (St. Clair, 2003; Tabiedi, 2004), public museums (Bell & Clover, 2017) and religious retreats (Groen, 2017); and community-based programs such as Indigenous social movements (Esteva & Reyes, 2004; Guevara, 2004; Kapoor, 2003), alternative food networks (Etmanski & Mitchell, 2017) and community currency projects (Winfrey, 2017).

In her work with environmental education, Clover (1995, 2003) developed a framework for critical environmental adult education that incorporates the philosophies and methodologies of adult education, feminist pedagogy, popular education and indigenous ways of knowing.

Recognizing that environmental education cannot change adults' relationship with the environment through critical feminist and popular pedagogy alone, she suggests that the inclusion of indigenous ways of knowing in this work inspires within learners a deeper understanding of the inter-connectedness of all life and a sense of reciprocity between humans and nature. By incorporating an indigenous perspective of nature as teacher and a sacred place that instructs through felt experience, critical environmental adult education grounds education in human/nature interaction in order to teach respect for nature, which is fundamental to inspiring action.

Adult educators have used the lens of transformative learning to understand the role of instrumental learning in relearning cultural skills required to support sustainable ecosystems (Bowers, 2017; Moyer & Sinclair, 2016; Quinn & Sinclair, 2016; Sims & Sinclair, 2008), and the role of communicative learning in devising new ways of being in the world through the way we understand and develop skills in human communication and social meaning-making (Dentith & Thompson, 2017; Clover, Follen, Hall, 2000; Griswold, 2017). In transformative learning towards an ecological consciousness, the aim is for learners to engage in critical reflection and dialogue in order to challenge and alter long-held assumptions and alter the way they engage with their earth community (Dentith & Thompson, 2018; Taylor, 2009). Such a transformation in consciousness goes beyond a change in beliefs, perceptions, and assumptions, but involves an engagement in the social and material world in order to establish a new kind of relationship with the natural world (Dentith & Thompson, 2018; Newman, 2014).

Nature Connection

Many authors in the fields of psychology and sustainability have argued that achieving socio-ecological sustainability will require individuals to develop a psychological connection

with nature (Clayton, 1998; Freyfogle, 1998; Gore, 1992; Kidner, 2001; Strong 1995; Taylor, 1986). In their review of published literature in the social and behavioral sciences that investigated connectedness to nature, Restall and Conrad (2015) identified a multiplicity of terms used to refer to this construct. Common to all of the studies they reviewed was an understanding that “a relationship with the natural world directly affects people’s physical, mental, and overall wellbeing due to benefits gained by increased exposure to nature and positive experiences in the natural world” (Restall & Conrad, 2015, p. 1). Increasingly, empirical research suggests that these positive experiences can lead to a more connected sense of self with nature (Christie & Waller, 2019; Cleary et al., 2018; Dann & Schroeder, 2015; Hinds & Sparks, 2009; Mayer et al., 2009 ; Nisbet et al., 2009; Richardson et al., 2016 Theimer & Ernst, 2012) and are ultimately conducive to environmentally responsible behavior (de Pater et al., 2008; Guiney & Oberhauser, 2009; Mayer & Frantz, 2004 ; Obery & Bangert, 2017 ; Olivos & Aragonés, 2011; Schultz et al., 2004; Stern et al., 2008; Teisl & O’Brien, 2003; van der Werff et al., 2013; Vaske & Kobrin, 2001; Weinstein et al., 2009).

In their interdisciplinary review of connectedness with nature (CWN) literature, Zylstra et al. (2014) describe CWN as sitting “on a continuum comprising *information about nature* and *experience in nature*, but [it] is differentiated as a more holistic process for realizing transformative outcomes that serve oneself and their community” (Zylstra et al., 2014, p. 124). Zylstra et al. (2014) suggest that CWN is an outcome of the interaction of four interacting components: perceptions of nature, feelings about nature, experiences in nature, and the transpersonal and ineffable aspects of appreciating the interconnectedness of all living beings.

Indigenous Knowledge Systems and Culture

In adult education and environmental education literature, the role of culture in learning, specifically culture as it is rooted in a particular ecological place, has been primarily addressed in the context of indigenous knowledge and ways of knowing. Curriculum theorists Semali and Kincheloe (1999) define indigenous knowledge systems as “the dynamic way in which the residents of an area have come to understand themselves in relationship to their natural environment and how they organize that folk knowledge of flora and fauna, cultural beliefs, and history to enhance their lives” (Semali & Kincheloe, 1999, p. 3). They explain that knowledge based in these dynamics is local, life-experience based, and transmitted from one generation to the next, helping people to cope in their unique sociological and geographical contexts. These authors, and many others writing in educational literature (Bang et al., 2014; Barnhardt & Kawagley, 2005; Bat et al., 2014; Calderon, 2014; De Angelis, 2018; Drayton, 2014; Drayton, 2014; Kapoor, 2003; Lekoko & Modise, 2011; Mauro & Carroll, 2014; Scully, 2012; Van Damme & Neluvhalani, 2004; Whitehouse et al., 2014; Williams, 2018), have focused on the knowledge that arises from the indigenous knowledge systems of politically defined Indigenous peoples such as Native American tribes of the U.S., First Nations peoples of Canada, African tribal cultures, and the Māori of Aotearoa (New Zealand). Indigeneity in this research reflects the U.N.’s definition of Indigenous as referring to

communities, peoples and nations [...] which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral

territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems (Ooft et al., 2019).

Recognizing that such a narrow definition of indigenous knowledge precludes discussion of community-based knowledge that exists among people who are not politically designated Indigenous, Semali & Kincheloe (1999) refer to the otherwise indigenous knowledge of communities who do not fit the U.N. (Ooft et al., 2019) definition as possessing “indigenous dynamics” (Semali & Kincheloe, 1999, p. 15). While Semali and Kincheloe make this distinction in order to highlight the role of power in legitimating and discrediting different systems of knowledge, distinguishing between indigenous knowledge and knowledge with “indigenous dynamics” obscures the common processes of cultural production that they share.

As Semali and Kincheloe (1999) mention in their definition of indigenous knowledge systems, such knowledge is intimately tied to a community’s folklore. Historically, folklore has been difficult to define, but a commonly accepted definition appropriate to this discussion is offered by Jan Brunvand (1978) who defines folklore as “the traditional, unofficial, non-institutional part of culture. It encompasses all knowledge, understandings, values, attitudes, assumptions, feelings, and beliefs transmitted in traditional forms by word of mouth or by customary examples” (Brunvand, 1978, p. 1). Outside of the academic discipline of folklore (and historically inside it, as well), the folk and their lore are still frequently associated with the “rural,” “illiterate,” or “primitive,” with folklore considered “the generic term under which the traditional Beliefs, Customs, Stories, Songs and Sayings current among backward peoples, or retained by the uncultured classes of more advanced peoples, are comprehended and included” (Burne, 1914, pp.1-2). However, contemporary folklorists acknowledge that folklore is not

limited to “the illiterate living in a literate society” (Dundes, 1980, p. 2) but exists among all groups within all cultures. Dundes (1980) argues that a folk group can be as small as a family or as large as a nation-state and is not defined in contrast with an elite society but rather by the shared knowledge of the core traditions that give the group their common identity.

More recent work by folklorists (Blank and Howard, 2013; Blank 2009; Blank 2012) demonstrates not only that folklore exists in the digital age and among highly technological societies, but that folklore is constantly emerging and is not always based on ancient precedent. Blank and Howard (2013) suggest that folkloric tradition is not a static cultural artifact transmitted through time, but rather that

tradition is the living enactment of a community’s perception about its own links to the past. It can be seen to emerge in specific performed events when individuals or groups enact forms they perceive to be deeply connected to their past. Imagining that connection to the past, individuals also imagine those with whom they are connected: the community or communities with whom they share their traditions. As they locate themselves in relation to those who have come before, they also locate themselves as bearers of those traditions into the future. They are imagining a future in which they have played their part in the community to come. (Blank & Howard, 2013, p. 12)

Folkloric *tradition* is both structured and dynamic, “[a]nswering the needs of the collective for continuity and of the individual for active participation, folklore...is that which is at once traditional and variable” (Glassie, 1989, p. 31). This dance between continuity and change links cultural expressions to the past while simultaneously allowing them to respond and adapt to current circumstances so that folklore is ever-

emerging each time it is performed, practiced, or shared. Rather than jeopardizing the authenticity and value of a tradition, the constant reinvention of tradition is an important part of cultural vitality and the folkloric process (Bendix, 1997; Dundes, 1977; Kirshenblatt-Gimblett, 1998). This is consistent with Semali and Kincheloe's (1999) assertion that indigenous knowledge systems arise to help people cope with their socio-ecological context, and seen through a folkloristic lens it becomes clear that indigenous knowledge systems exist within all cultures.

In order to recognize the presence of indigenous knowledge systems among all cultures, regardless of political status, and to differentiate between the varied meanings and associations of the word "indigenous," in this study I will use the term "Indigenous" with a capital "I" to refer to peoples, cultures, and knowledge systems who are so designated by the U.N. (Ooft et al., 2019), and the term "indigenous" with a lower case "i" when I refer to a more general sense of being native to place.

Reindigenization and Rewilding

Adults who develop and maintain nature connection cultivate and create customs within indigenous knowledge systems based on their own socio-ecological environment. In this context, indigenous knowledge is not tied to an ethnic identity or a community's historic relationship with an ecological environment, but instead emerges through an engagement with place in a process of reindigenization or rewilding. As this knowledge becomes integrated into the customs, practices, and beliefs of a community, a culture of nature connection can emerge.

The term reindigenization has been used by some scholars in education, environmental studies, and indigenous knowledge, as well as community activists in environmental and social change and community resilience, to describe the process of rebuilding what depth psychologist

and wilderness-based soul guide Bill Plotkin (2013) refers to as terra, ecological, and cultural indigeneities (Baskin, 2019; Bioneers, 2014; Blackie, 2017; Cajete et al., 2008; MacKinnon et al., 2017; Nelson, 2015; Williams, 2018;). However reindigenization has also been used more specifically to refer to the processes of restoring the sovereignty, knowledge systems, or cultural practices of politically-defined Indigenous peoples (Bang et al., 2014; Barnhardt & Kawagley, 2005; Bat et al., 2014; Calderon, 2014; Van Damme & Neluvhalani, 2004; De Angelis, 2018; Drayton, 2014; Kapoor, 2003; Lekoko & Modise, 2011; Mauro & Carroll, 2014; Scully, 2012; Whitehouse et al., 2014; Williams, 2018).

As an alternative to reindigenization, *rewilding* is a term that has recently emerged in the literature (Baker, 2017; Barnes, 2019; Bekoff, 2014; Louv, 2019; Mortali, 2019; Monbiot, 2014; Olson, 2012; Snyder, 2010) to refer to the general process of “returning home to place” (Plotkin, 2013, p. 55) by reestablishing a relationship with one’s ecological environment. The word “rewilding” avoids some of the controversy associated with the term reindigenization, though rewilding discussions do sometimes reference Indigenous epistemologies and practices as well as broader conceptions of indigeneity, such as those presented by Plotkin (2013). Initially a term coined in the scientific discourse around ecological restoration, rewilding was then adopted by the broader environmental conservation community to refer to a holistic vision of reintroducing native species and relinquishing productive land (agricultural or forest) to a non-cultivated state (Jørgensen, 2015). The concept has subsequently been applied to human-nature relationships, as well, and adopted by environmental activists, popular environmental literature, and other academic disciplines. In order to avoid confusion with the multiple associations of “reindigenization,” this study will use “rewilding” as the organizing concept for the process of becoming indigenous to earth, ecological place, and culture, as described by Plotkin (2013).

With the goal of creating a practical framework for teaching people how to rewild themselves to the place in which they live, nature connection educators Young et al. (2016) outline foundational core routines of nature connection which they loosely define as “things people do to learn nature’s ways. They aren’t lessons. They aren’t knowledge. They are learning habits” (Young et al., 2016, p. 35). Examples of core nature routines are deep nature immersion and observation; storytelling; sense meditation; questioning nature observations and tracking animals; imitating animals; timeless wandering through a landscape; mapping a landscape; wilderness survival skills; studying bird language; and thanksgiving or gratitude.

While the aim of practicing nature connection routines is to “restore finely tuned habits of awareness based on nature” and “develop the ability to use all one’s senses out in the field to understand the interdependent web of life” (Young et al., 2016, p. 27), Young et al. ultimately view connection as a sense of kinship that goes beyond cognitive recognition of interconnection. For these educators, relationship is at the heart of nature connection. The authors argue that through nature connection individuals gain a deeper appreciation of their human nature and their unique role in their family and community ecosystem, helping them to take an active responsibility in building and sustaining community as it is grounded in a specific socio-ecological context. In this way, the development of nature connection in an individual leads to an indigenized understanding of one’s role in the interconnected web of life. Through Young et al.’s approach to the development of nature connection a person strengthens their sense of belonging to the earth, or what Plotkin (2013) refers to as *terra indigeneity*. Ultimately, it is through an experience of *terra indigeneity* that an indigenous sense of place (ecological indigeneity) and cultural indigeneity can develop (Plotkin, 2013).

Depth psychologist and wilderness guide Bill Plotkin (2008) suggests that the development of a relational ontology in which humanity is interconnected with the cosmos is the culminating stage of healthy human development. In Plotkin's "soulcentric developmental model," when an individual reaches maturity, or comes to fully inhabit her soul and know her ultimate socio-ecological place in the world during her adulthood, she becomes consciously aware of her interconnectedness with the greater Earth community and her actions are guided by this awareness. This awareness is further developed throughout adulthood and is only fully embodied when an individual transitions into elderhood. Because Plotkin understands human development to be inextricably linked to relationships with both culture and the natural world he argues that the developmental tasks of each age must not only include psycho-cultural developmental actions, but also nature-oriented developmental actions. Nature connection practices can therefore be understood as integral to human psychological development from an egocentric to an ecocentric worldview, that is, a perspective that views the non-human world as animated or ensouled, sees intrinsic value in the greater-than-human world, and understands all beings as connected through dynamic webs of interrelationship.

Problem Statement

Orr (2004) and other adult educators (Clover, 1995, 2003; Griswold, 2017; Lange, 2012; O'Sullivan, 2012) argue there is a need for individuals and communities to become reacquainted with the land they inhabit and their place in the greater social-ecological system in order for us to achieve global sustainability. There is an abundance of conceptual literature on the need for connection with nature in sustainability and environmental education. Within this discussion there remains a lack of empirical literature considering how to cultivate nature connection in formal and nonformal education, what role educators play in teaching nature connection, and

what impact educators with nature connection have on their students. However, there is an emerging body of conceptual literature (Macy & Brown, 1998; Plotkin, 2008, 2013; Young et al., 2016) that similarly argues that humans and the greater non-human ecosystem will benefit from people becoming reacquainted with the land they inhabit. This literature proposes a process of rewilding, as a means to accomplish this. The ultimate goal of rewilding is not only environmental sustainability, a concept that can be reduced to mean merely the maintenance of natural resources for human consumption (Edwards, 2005; Orr, 1992; Solow, 1993). Rather, the aim of rewilding or “returning home to place” (Plotkin, 2013, p. 53) is to re-envision human culture and natural environment as interdependent and “collectively engender ways of life fully resonant with and integral to our local ecosystem, cultures that harmonize with the songline of our place” (Plotkin, 2013, p. 55).

Rewilding can take many forms. This study focuses on how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their practice as educators. Examining the experiences of adult learners offers insights into the process of learning to be more connected to place, the role of culture in learning to become connected to place, and what elements of nature connection and rewilding can be understood as transformative learning. Ultimately, this study provides insight into the process of learning to be more connected to nature and offers educators a better understanding of how their own relationships with nature may impact their educative practices.

Purpose Statement and Research Questions

Given the lack of research attention to the learning of nature connection among adults, the purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their

practice as educators. To that end, this research sought answers to the following research questions:

1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?
2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?
3. Where does an ecocentric worldview appear in these processes?

Theoretical Framework

This research study makes use of three different perspectives of transformative learning theory to understand the experience of learning nature connection and the impact this learning has on learners' sense of connection to nature and their personal sense of indigeneity. It also uses Plotkin's (2008) "Soulcentric" model of psychological development to understand the learning process of nature connection in relation to adult development and the emerging concepts of rewilding.

Transformative Learning Theory

This study uses the framework of transformative learning theory to understand the experience of learning nature connection and the impact this learning has on educators' teaching practices. There is no unified theory of transformative learning, but instead a growing web of inter-related approaches to understanding the fundamental process of perspective change – the process of examining, questioning, and revising one's perceptions of his or her experiences (Cranton & Taylor, 2012). Mezirow's phases of the transformative learning process evolved over time and are not considered a definitive model. Still, they contain several elements that are often considered integral to the process: an initial disorienting dilemma that instigates the

transformative learning process; critical self-reflection through which the learner becomes aware of a specific perception, meaning, behavior, or a habit of seeing, thinking or acting; discourse, through which the learner encounters and assesses possible perspectives; and a decision to take action based on a new perspective (Baumgartner, 2012). More recently, Taylor (2014) highlighted the integral role that empathy plays in all of these aspects of the transformative learning process. Three strands of transformative learning theory have developed that will be particularly useful to this research study: transformative learning for planetary survival (O'Sullivan, 2012), the complexity or system's view of transformative learning (Lange, 2012; 2018), and a Jungian understanding of transformative learning as "soul work" (Dirkx, 2012).

O'Sullivan's (2012) work in transformative learning presents a vision and philosophy for the field, rather than a theory of the learning process itself (Taylor & Cranton, 2012). He proposes transformative learning as a necessary step in humanity's survival as the future of our habitat and the way it functions becomes uncertain. In this vision of the theory, learning takes place in three distinct but interrelated modes: education for survival – coming to an awareness and acceptance of the ecological crisis; education for critical understanding – becoming aware of the worldview behind the forces of modernism, imperialism, capitalism, and globalization that have brought about current levels of environmental degradation; and education for integral creativity – the creation of a new planetary consciousness and cosmology that restores the relationship between human and human and human and nature (O'Sullivan, 2012). Because this study will address nature connection in the context of environmental sustainability and environmental education, O'Sullivan's vision of the interrelationship between individual and community transformation for sustainability will provide an appropriate framework for this research.

Similarly, Lange (2012; 2018) encourages a revisioning of transformative learning theory that moves beyond its original modernist epistemological, cosmological and ontological roots and is instead grounded in the relational ontologies of New Science, such as relativity theory, quantum mechanics, process physics, complexity and chaos theory, enactivism, Gaia theory, deep ecology, Eastern mysticism and indigenous epistemologies. Transformative learning from this perspective would reorient the locus of transformation away from the individual or society and to the relations between actors within a larger system. Complementing Lange's (2012; 2018) and O'Sullivan's (2012) big picture view is Dirkx's (2012) understanding of transformative learning as "soul work" on the individual, psychological level that then impacts how the individual relates to the wider world. This view takes a "depth perspective" approach, emphasizing "relational, emotional, and largely unconscious issues associated with development of the individual, interpersonal interactions, and social development" (Dirkx, 2012, p. 117). Dirkx presents a vision of transformative learning that "involves making sense of these outward expressions of our inner selves" (Dirkx, 2012, p. 116). In particular, he illustrates the importance that emotions, the unconscious, and relationships play in the transformative learning process. If the goal of nature connection is to transform one's relationship with nature, Dirkx's concept of soul work offers a lens through which to understand how a change in relationship might occur.

Plotkin's "Soulcentric" Developmental Model

Transformative learning theory is grounded in constructive developmental psychology which "attends to the natural evolution of the forms of our meaning-constructing" (Kegan, 2000, p. 53) as individuals grow and elaborate an understanding of themselves and the world around them. To more fully account for how this developmental process impacts an individual's relationship to their social-ecological environment, this research will refer to Plotkin's (2008)

“Soulcentric” model of development. Plotkin’s (2008) vision of human development is similar to other psychological stage models (e.g. Erickson, 1963; Levinson et al., 1978; Levinson & Levinson, 1996) in that it depicts a healthy adult progressing through stages, accomplishing developmental tasks in order to transition to the next stage. In Plotkin’s view, the culmination of healthy human development is to become aware of and consciously embody our souls. He variously defines soul as “a person’s deep identity, ... seen in the deep structure of his psyche, the way he operates at his core” (p. 37), and as an individual’s ultimate place in the more-than-human world: “You have a unique ecological role, a singular way you can serve and nurture the web of life either directly or through your role in human society” (p. 31). Only when an individual comes to fully inhabit her soul, know her ultimate socio-ecological place, and become consciously aware of her interconnectedness with the greater Earth community does she reach developmental maturity.

Rewilding and Terra Indigeneity

Inherent in the idea that each individual inhabits a “psycho-ecological niche” (Plotkin, 2008) is an understanding that all humans are terrestrially natural and native to place, and it is by cultivating and understanding this indigeneity that an individual can come fully into their unique socio-ecological role. Plotkin (2013) outlines three interconnected ways in which someone can be indigenous: terrestrially – as native to the Earth; ecologically – belonging to a particular ecosystem or geographical place; and culturally – being a member of a particular people or tribe. The reality for many, if not most contemporary humans is that they no longer live in their ancestral lands as international migration and movement from rural to urban areas increases each year (International Organization for Migration [IOM], 2019; United Nations, 2018). A cost of migration is that many of the cultural traditions and knowledges tied to those ecological

homelands are lost or lose meaning along the way. As a result of these major population movements most people today are no longer culturally or ecologically indigenous.

But this does not mean that once lost indigeneity cannot be regained, as Plotkin (2013) explains, “Our being native to Earth is, after all, foundational to our ever having been culturally or ecologically native” (p. 55). He argues that to rebuild a cultural and ecological indigenous relationship to place individuals and communities must live according to place, as their ancestors once did, so that “human culture and environment [are] interdependent: mutually shaping and mutually enhancing” (Plotkin, 2013, p. 55). Understanding nature connection as one possible process for rewilding, this research will use the framework of rewilding to examine how people learn to become indigenous to the places in which they live.

Methodology Overview

In order to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity I employed both qualitative and quantitative research methods. For this reason, the study can be considered a mixed methods study. However, because I was interested in participants’ cultural and in-depth experiences, data collection and analysis was primarily qualitative in nature, making this, for the most part, a basic interpretive study strongly informed by ethnography and autoethnography. It is partly autoethnographic because it includes my own story, illustrated by the introduction to this chapter.

In qualitative research, participants are chosen according to purposeful criteria. In this instance, participants will need to have 1) participated in an Art of Mentoring program that I attended and 2) attempted to integrate nature connection into their home communities. The primary means of data collection in this study will be in-depth interviews informed by an

ethnographic approach (Hammersley, 2007; Hammersley and Atkinson, 2007; Madison, 2012; Parker-Jenkins, 2018; Wolcott, 1990).

This study included a small quantitative component, making it, to a small extent, a mixed method study. Mixed method research is the integration of both qualitative and quantitative research methods in order to capture a more complete understanding of a phenomenon than either method could accomplish on its own (Creswell & Creswell, 2018).

The study uses a mixed method convergent design that simultaneously gathers qualitative data through ethnographic interviews and quantitative data through the implementation of Nisbet et al.'s (2009) Nature Relatedness survey. This survey was used as a self-assessment tool that was discussed as part of the semi-structured interview with the participants. Only those who participated in the qualitative interview took the survey. Findings from this survey identified individually unique patterns of nature connection (affective, cognitive, and physical) and supported an understanding of participants' ecocentric worldview and eco-action orientation. Individual results of this survey also provided a basis for discussion in the semi-structured ethnographic interviews. Because this study is interested in how culture impacts learning nature connection and practice, the use of ethnographic interviews provided data on the role of culture in this process which is not addressed by the Nature Relatedness survey.

Significance and Relevance of the Study

Transformative learning theory has been readily embraced by the fields of sustainability and environmental education. While many of the studies in these fields use transformative learning theory examine the experiences of adult learners, the majority focus on students in formal, higher education contexts, with comparatively little attention paid to the transformative learning experiences of environmental educators. Two notable exceptions to this trend are the

autoethnographic studies conducted by Williams (2013) and O'Neill (2018) which examined how the researchers, as educators and individuals, developed a deepened sense of ecological relationship with the land they inhabited and how this reconfigured their ideas of relationality. These two studies begin to paint a picture of how becoming aware of one's place in a greater ecological system can be a transformative learning process and they point to the ways in which this type of learning can impact educators' identities, practice, and relationships with their students. These studies point to a topic that is ripe for further investigation that will look beyond the experiences of a single individual. It is my intention that this proposed study will contribute to this gap in the literature by examining the transformative learning experiences of nature connection among a group of adult learners who are also educators, collecting multiple, possibly divergent, perspectives on this process.

There is also more room in the literature for studies investigating transformative learning within nonformal adult environmental education contexts. Adult environmental educator Darlene Clover (1995) argues that the rapid progression of environmental degradation will not permit us to wait for the next generation of students to mature into ecologically responsible adults. There is an urgent need for more community-based, adult-focused environmental education to help tip the scales towards sustainability. In the last ten years there have only been five studies that have examined transformative learning in nonformal adult environmental education contexts (Etmanski, 2018; Fitzwilliams-Heck, 2019; Moyer & Sinclair, 2016; Souza, Wals & Jacobi, 2019; Westoby & Lyons, 2017). The majority of adults do not pursue degrees in environmental science or sustainability, consequently, much of adult environmental and sustainability education needs to take place outside of the formal educational context if it is to reach adults. This research study will seek to address this gap in the literature by examining the transformative learning that

occurs within a specific nonformal environmental and sustainability adult education program and its impact on the educators' practice.

Within the field of adult education, growing interest in environmental and sustainability issues has generated several edited works dedicated to adult environmental education (Clover, 2004; Clover, Follen, & Hall, 2000; Dentith & Griswold, 2017; Hill & Clover, 2003). While these works foreground the importance of addressing environmental degradation and fostering an ecological world view, they frequently emphasize the social impacts of environmental issues, such as the environmental sexism and racism produced by globalization. This literature tends to present nature and the environment primarily as a field of power contestation, giving less consideration to nature's inherent value, and its value to human and global physical, cultural, and spiritual health. In contrast, this study conceives of nature as an entity with whom individuals are learning a new form of relationship. While the re-envisioning of this relationship may impact other perspectives the participants have, the primary transformation of concern is whether or not participants develop a more relational ontology.

Assumptions of the Study

This research is grounded on several assumptions that stem from its methodology and theoretical frameworks.

1. Possessing the quality of nature connection contributes to an individual's valuing and conservation of nature (Gruenewald, 2003; Orr, 2004).
2. It is possible for adults to develop a connection to nature (Cleary et al., 2018).
3. By virtue of being native to Earth, all humans possess an inherent terra indigeneity (Manitonquat, 2009; Plotkin 2013).

3. Regular, routine interaction with nature can lead to the development of nature connection (Richardson et al. 2016).
4. Nature connection is a measurable quality that can be assessed using a tool such as the Nature Relatedness Scale (Nisbet et al., 2009).
5. Participants will be able to articulate their experiences of learning through nature connection practices.
6. The inclusion of ethnographic data in this study assumes that observation in naturally occurring settings will produce more accurate information than when elicited in situations constructed by the researcher (Hammersley, 2018).

Limitations of the Study

All phases of research, from data collection to analysis to dissemination, are limited by research design and impacted by the assumptions and biases of the researcher. The following are limitations previously identified in this research:

1. This research relies on extracting and analyzing simple categories, such as “nature,” from autobiographical accounts, leaving room for researcher bias as she interprets the significance of these categories for participants (Chawla, 2001).
2. Participants may be primed for certain responses based on assumed expectations of the researcher.
3. Several countries of origin will be represented among the participants and not all participants speak English as their first language. There is a possibility that meaning may be lost or altered in translation.

Strengths of the Study

Despite these limitations, this study has several strengths stemming from its mixed methods design. Qualitative research is valuable for its ability to achieve an understanding of human “situations in their uniqueness as part of a particular context and the interactions there” (Patton, 1985, p.1). By using an inductive reasoning process and employing the researcher as a primary instrument of data collection and analysis, qualitative research methods will generate a thick, rich description of the experience of learning nature connection that will augment quantitative studies of nature connection that identify which types of experiences are associated with valuing nature but do not address *how* these experiences lead to valuing nature.

Because the researcher serves as an instrument of data collection and analysis in qualitative research particular care must be taken to ensure the internal validity or credibility of the study (Merriam & Tisdell, 2016). While my personal familiarity with nature connection practices and my participation in the community of learners being studied are elements of my researcher position that will introduce biases, dispositions, and assumptions, this familiarity is also an asset that will aid me in constructing an emic, or insider account of the learning experience. Additionally, my personal relationship with some of the participants will allow for freer dialogue about personal experiences that may seem too difficult to explain to a stranger who has not shared a similar experience.

In addition to the qualitative research methods used in this study, the implementation of Nisbet et al.’s (2009) Nature Relatedness survey tool will allow me to clearly define the concept of nature connection and measure its presence and quality among participants. The use of this quantitative tool will allow me to delimit my research sample as educators from a specific nonformal adult environmental education program who possess nature connection. This survey

tool will also provide a detailed and consistent definition of the concept of nature connection for the study.

Definition of Terms

Cultural indigeneity – originating membership among a particular people or tribe that has had a formative impact on one’s worldview, traditions, values (Plotkin, 2013).

Indigenous knowledge - local, life-experience based knowledge that is transmitted from one generation to the next with the aim of helping people to cope in their unique sociological and geographical context (Fasokun et al., 2005; George, 1999; Graveline, 2005; Semali and Kincheloe, 1999). In this study, I will use the term “Indigenous knowledge” with a capital “I” to refer to the knowledge of peoples and cultures who are so designated by the U.N.’s definition of Indigenous:

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems (Ooft et al., 2019).

Ecocentric worldview – a perspective that views the non-human world as animated or ensouled, sees intrinsic value in the greater-than-human world, and understands all beings as connected through dynamic webs of interrelationship.

Ecological indigeneity – the fact of originating or occurring naturally within a particular ecosystem or geographical place *or* having cultivated a reciprocal relationship with the ecological or geographical place one inhabits (Plotkin, 2013). Kimmerer (2013) refers to this latter form of ecological indigeneity as being “naturalized to place” (Kimmerer, 2013, p. 214) to distinguish it from the ecological indigeneity of Indigenous peoples.

Nature - This study conceives of nature as the interconnected web of living and non-living beings (such as mountains, waters, and other landscapes) that are not derived from or solely dependent on humanity for their existence.

Nature connection – the relationship an individual has with nature and the extent to which they identify with the natural environment (Restall & Conrad, 2015).

Nature connection practices – For this study, nature connection practices refer to “things people do to learn nature’s ways” (Young, Haas & McGown, 2016, p. 35). These practices include, but are not limited to core routines of nature connection (Young, Haas, & McGown, 2016) – deep nature immersion and observation, tracking animals, studying bird language, thanksgiving or gratitude, etc. – and Plotkin’s (2008) nature-oriented developmental tasks for each stage of human development – discovering the enchantment of nature, developing social and individual authenticity, exploring the mysteries of nature and psyche, learning to embody the unique gifts of one’s soul, caring for the soul of the more-than-human-community.

Reindigenization – the process of rebuilding a cultural and ecological indigenous relationship to place, relearning how individuals and communities once lived according to place in a way that “human culture and environment [are] interdependent: mutually shaping and mutually enhancing” (Plotkin, 2013, p. 55).

Relational ontology – an understanding of reality as “a dynamic network of relations where all things are connected as a living system” (Lange, 2018, p. 281), in contrast to an atomistic, reductionist view of reality.

Rewilding – The process through which humans intentionally cultivate a sense of terra indigeneity (Plotkin, 2013) by becoming reenchanting with nature, nurturing a sense of wonder for the natural world, and cultivating compassion and empathy for all other living beings (Bekoff, 2014) in order to cultivate place and cultural indigeneity (Plotkin, 2013), or, become “naturalized to place” (Kimmerer, 2013, p. 214).

Terra indigeneity – the fact of originating or being natural to Earth (Plotkin, 2013). All humans, as a species, possess terra indigeneity.

Transformative learning theory - There is no unified theory of transformative learning, but instead a growing web of inter-related approaches to understanding the fundamental process of perspective change – the process of examining, questioning, and revising one’s perceptions of his or her experiences. Transformative learning theory suggests that people regularly and uncritically make meaning using the perspective of the dominant ideology, but through critical reflection aided by empathy (Taylor, 2014) they can recognize when the assumptions of this ideology are oppressive, become aware of alternative perspectives, and ultimately pursue new actions that lead to change (Cranton & Taylor, 2012).

Summary and Conclusion

This chapter provided an overview of the proposed research study investigating educators’ experiences learning to be more connected to nature. Key related areas of research were discussed to present a background for the study, followed by a statement of the problem, purpose statement, and research questions. This was followed by an overview of the theoretical

frameworks of the study and the proposed methodology and design. Finally, the chapter addressed the study's significance and relevance, assumptions, limitations, and strengths, as well as key definitions for this research topic. The next chapter, Chapter Two, presents an in-depth review of the bodies of literature that ground this study. Following this, Chapter Three provides a detailed description of the research methodology and design of this study. Chapter Four will present the quantitative findings and qualitative findings of this study. Finally, a discussion of the research findings and their implications for the field will be presented in Chapter Five.

Chapter 2

Literature Review

Introduction

We live in a time of widespread ecological disruption – from rapid climate change to rising sea levels, from super-viruses to vast species extinctions and from over-population to increasing resource scarcity (Barnosky et al., 2011; Burkhead, 2012; Carpenter et al. 2008; Dybas, 2005; Estes et al., 2011; Jackson, 2008; Laurance, 2006; Millenium Ecosystems Assessment, 2005; Radchuck et al., 2019; Roe, 2019; Thiel et al., 2018). Ecologist and educator David W. Orr, in *Earth in Mind* (2004), averred the source of the current ecological crisis “is a failure to educate people to think broadly, to perceive systems and patterns, and to live as whole persons” (pg. 2). He explains that it is only when people understand themselves as interconnected with the natural world in an encompassing life-system will they fully know themselves, the world they inhabit, and the consequences of their actions. Orr (2004) calls for a change in the way many humans have come to perceive our relationship with nature from one of domination and extraction to that of interrelatedness and reciprocity. Such a perspective would be a sea-change in the way modern Western society typically understands the relationship between the human and non-human worlds. Phenomenologist Abram (1996) explains that in this alternative perspective, all objects are alive in the sense that they are capable of entering into relationship with a human perceiver in a way that is “inherently participatory,” consisting of “the experience of an active interplay, or coupling, between the perceiving body and that which it perceives” (Abram, 1996, p. 57). An awareness of the reciprocity between these worlds is necessary for developing an ecological ethic that values the cultural and ecological lives of

places and comprehends the interconnectedness of all beings. Abram argues that such an ethic is possible

not primarily through the logical elucidation of new philosophical principles and legislative strictures, but through a renewed attentiveness to this perceptual dimension that underlies all our logics, through a rejuvenation of our carnal, sensorial empathy with the living land that sustains us (Abram, 1996, p. 69).

When societies deny the connection between humans and nature, or the nonhuman world, this reciprocity is lost and they instead “construct places as objects or sites on a map to be economically exploited” (Gruenewald, 2003, p. 624). To renew this reciprocal conversation with the land, humans must (re)learn the ability to listen and perceive in order to participate in meaning making with the places they inhabit.

Adult education theorists O’Sullivan (2012) and Lange (2012) have similarly argued that achieving socio-ecological sustainability will require transformative learning experiences that lead individuals to perceive their interconnectedness with nature and all living and nonliving beings. Transformative learning theory suggests that people regularly and uncritically make meaning using the perspective of the dominant ideology, but through critical reflection aided by empathy (Taylor, 2014) they can recognize when the assumptions of this ideology are oppressive, become aware of alternative perspectives, and ultimately pursue new actions that lead to change (Cranton & Taylor, 2012). In transformative learning towards an ecological consciousness, the aim is for learners to engage in critical reflection and dialogue in order to challenge and alter long-held assumptions and alter the way they engage with their earth community (Dentith & Thompson, 2018; Taylor, 2009). If, as Orr, Abram, O’Sullivan, and Lange suggest, an awareness of connection to nature is essential for attaining global socio-

ecological sustainability, and adult education should play a role in fostering this connection, then what does the process of learning to be connected to nature look like, how is it accomplished, and what role does the educator play?

Outline

This chapter offers a review of the conceptual literature regarding nature connection, adult environmental education, and indigenous knowledge systems and culture, with a focus on how these topics relate to adult learning. The review then turns to the empirical literature investigating nature connection and its instigating factors, as well as its relationship to environmentally responsible behavior. The third section of the review will address the theoretical frameworks of this study: transformative learning theory, Plotkin's (2009) "Soulcentric" model of development, and reindigenization and rewilding. Finally, the review will conclude by identifying gaps in the current literature regarding nature connection and adult education and will introduce the research questions of this study.

Conceptual Literature of Nature Connection

The following section provides an overview of the conceptual literature relevant to this study. It begins with an overview of nature connection and how it has been defined and used in the literature. Consideration is then given to how nature connection is relevant to adult environmental education literature.

Nature Connection

Many authors in the fields of psychology and sustainability have argued that achieving socio-ecological sustainability will require individuals to develop a psychological connection with nature (Clayton, 1998; Freyfogle, 1998; Gore, 1991; Kidner, 2001; Strong 1995; Taylor,

1986). Cultural historian and philosopher Richard Tarnas (1991) summarizes this view eloquently:

Only the experience of connectedness will save the earth – and us with it. Any attempt, however grandiose and with however much commitment to its cause, will fall short if it does not have at its root the transformation of human experience in which human thinking knows connectedness as such and itself with that (73).

Playing devil’s advocate, psychologist P.W. Schultz (2002) acknowledges that connectedness is not the only path to ecological sustainability. It is conceivable that humans lacking connection to nature could be compelled to make the sacrifices necessary to forestall environmental degradation, provided they have another motivator to do so. Schultz argues that people lacking connection to nature “can be concerned about environmental problems, they can be concerned about plants and animals, and they can act in a pro-environmental manner, but only in situations where they perceive a benefit for self” (Schultz, 2002, p. 73). However, the drawback of relying on egoistic concerns to motivate sustainable, pro-environmental behaviors is that they are ultimately not reliable motivators when technological measures appear more efficient alternatives to natural processes, albeit partially or temporarily. A familiar example would be people relying on bottled water when local ground water has become contaminated, rather than changing human practices that lead to groundwater contamination. Lacking immediate personal costs for environmentally destructive behavior, those without a sense of connection to the natural world also lack the motivation to protect it. Nature connection is therefore a necessary foundation for long-lasting pro-environmental attitudes and ecologically sustainable actions.

Defining Nature

Given the central role that connection to nature plays in promoting environmentally sustainable behavior, *nature* and *connectedness to nature* as concepts should be clearly defined. The Oxford English Dictionary defines nature first as “the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations” and secondly as “the whole natural world, including human beings; the cosmos” (OED Online, 2019). Tellingly, this secondary definition is considered obsolete by the most regarded authority on the English language, suggesting that this meaning is no longer in use and cannot be found in modern English (OED Online, 2019). In modern English, nature is conceived of as separate and distinct from humanity and what humanity has altered. But what of the myriad plants, animals and landscapes that have been impacted, directly or indirectly, by humanity? In a world where human-created debris can be found from the furthest reaches of the ocean to the intestines of animals (Ryan, 2015) nonnative species are relocated by humans into new locales, fundamentally altering ecological systems (Kolbert, 2014), and where the impact of greenhouse gasses spans the entire globe (McKibben, 1990), what plants, animals, landscape or features have not been impacted by humans? Indeed, humanity has impacted the planet to such an extent that it has been suggested we are now in a new geological epoch, the Anthropocene (Crutzen, 2006).

Ironically, many researchers studying nature connectedness refrain from defining nature and rely on a common understanding of nature based on the OED definition, while simultaneously arguing that humanity is inextricably a part of nature. Therefore, to avoid confusion when using this term, Johnson et al. (1997) suggest there are two possible courses: 1) reject the term nature entirely, or 2) acknowledge that the term lacks a desired level of clarity and

add a qualifier when used. Since the term nature is such an established and widely used term in the literature on connectedness to nature rejecting it would add an unhelpful layer of opacity to this research. Johnson et al. suggest defining *natural environment* as an environment that is relatively unchanged or undisturbed by human culture. However, this definition excludes humanity from nature, all of the beings that live in manmade environments, for instance, the myriad plants and animals that inhabit urban environments, but which are not human or direct human creations. Indeed, considering man's effect on the global environment, as cited above, this definition could exclude the entire globe from nature. Rather than attempting to define nature apart from humanity, this study conceives of nature as the interconnected web of living and non-living beings (such as mountains, waters, and other landscapes) that are not derived from or solely dependent on humanity for their existence. The aim of this definition is to include humanity within the scope of nature (which is not derived from itself but evolved from earlier species) while simultaneously locating nature beyond the determinants of humanity. By doing so, artifacts and built environments created by humanity would be excluded from nature, but not the species who exist independently from humanity within those environments or who are affected by those tools. This definition is incomplete and does not successfully address the place of bioengineered species or artificial intelligence in nature, but it is a start and should be sufficient for the discussion of this study.

Defining Nature Connection

In their review of published literature in the social and behavioral sciences that investigated connectedness to nature, Restall and Conrad (2015) defined the study of nature connectedness as an examination of “how people identify themselves with the natural environment and the relationships they form with nature” (Restall & Conrad, 2015, p. 1). The

authors identified a multiplicity of terms used in the literature to refer to this construct: nature connectedness (Schultz, 2002), nature relatedness (Nisbet et al., 2009), love and care for nature (Perkins, 2010), connectivity with nature (Dutcher et al., 2007), emotional affinity toward nature (Kals et al., 1999), dispositional empathy with nature (Tam, 2013a,b) and inclusion of nature in the self (Schultz, 2001). Common to all of these studies was an understanding that “a relationship with the natural world directly affects people’s physical, mental, and overall wellbeing due to benefits gained by increased exposure to nature and positive experiences in the natural world” (Restall & Conrad, 2015, p. 1) with several authors (Dutcher et al., 2007; Nisbet et al., 2009; Perkins, 2010; Schultz, 2001) suggesting that these positive experiences can lead to a more connected sense of self with nature, and ultimately are conducive to environmentally responsible behavior.

Schultz (2002) offers a psychological model for the extent to which an individual believes that he or she is connected to nature. Using the psychology concept of inclusion to interrogate the experience of nature connection, Schultz identifies three core components of inclusion with nature: *connectedness*, *caring*, and *commitment*. For Schultz, “*connectedness* refers to the extent to which an individual includes nature within his/her cognitive representation of self” (Schultz, 2002, p. 67). *Caring* for nature refers to the extent an individual feels an emotional affinity with nature, which results from spending time in nature, while *commitment* to nature is the extent to which a person feels motivated to act in the best interest of nature. These three components of inclusion with nature appear to have a causal relationship, with connectedness leading to caring, which ultimately results in commitment. Conversely, a lack of connection to nature precludes the development of a caring relationship for nature, which can result in the destruction of the natural environment, since it is not valued.

Expanding on Schultz's (2002) schema, Zylstra, Knight, Esler, & Le Grange (2014) attempt to make a comprehensive characterization of the phenomenon in their interdisciplinary review of connectedness with nature (CWN) literature. They describe CWN as sitting "on a continuum comprising *information about nature* and *experience in nature*, but [it] is differentiated as a more holistic process for realizing transformative outcomes that serve oneself and their community" (Zylstra, Knight, Esler, & Le Grange, 2014, p. 124). Throughout the literature, CWN has variously been conceptualized as cognitive (e.g. perceptions, knowledge, and beliefs about nature), affective (e.g. feelings and emotions about nature) and behavioral (e.g. actions and experiences in nature) elements. Noting the important role of all three of these elements play, Zylstra et al. (2014) suggest that CWN is an outcome of the interaction of all three of these components, which they describe as "a complex and veritable mix of synergistic information about feelings towards and experience in or with nature" (Zylstra, Knight, Esler, & Le Grange, 2014, p. 125). The authors are quick to point out that there may be a fourth element, spirituality, at play in CWN, which would acknowledge the transpersonal and ineffable aspects of appreciating the interconnectedness of all living beings. To side-step the ontological and epistemic difficulties of including spirituality as a fourth component of CWN, they use the term *spirit* to refer to the myriad inspirations a person might have that motivates them to connect. It is this inspiration, or *spirit*, that motivates "committed CWN" (Zylstra, Knight, Esler, & Le Grange, 2014, p. 126), a trait that describes one's intentional cultivation of cognitive, affective and experiential connectedness with nature with the goal of giving back to the greater ecological community.

Noting that the importance of nature connection is often mentioned but is difficult to measure, Nisbet et al. (2009) constructed the Nature-Relatedness scale in an attempt to quantify

nature connection. Partly inspired by Schultz's (2002) three core components of inclusion with nature, the scale assesses the affective, cognitive, and experiential aspects of an individual's connection to nature. Like Schultz, the authors recognize environmental values and behaviors (*caring* and *commitment*) and ecological identity, or a view of the self that includes the greater ecosystem that one inhabits (*connectedness*), as key aspects of connectedness to nature. Nisbet et al. (2009) propose a new construct, *nature relatedness* (NR) to describe the degree to which one connects to the natural world:

Nature relatedness is not unlike the deep ecology concept of an ecological self, the notion of a self-construal that includes the natural world. The concept of NR encompasses one's appreciation for and understanding of our interconnectedness with all other living things on the earth. It is distinct from environmentalism in that it includes much more than activism. It is not simply a love of nature or enjoyment of only the superficially pleasing facets of nature, such as sunsets and snowflakes. It is also an understanding of the importance of all aspects of nature, even those that are not aesthetically appealing to humans (e.g., spiders and snakes).

Using this construct, the authors developed the Nature Relatedness questionnaire and scale to assess the affective, cognitive and physical relationship individuals have with the natural world and to determine empirically if nature connected people (those who score highly in nature relatedness) are in fact more likely to engage in environmentally responsible behavior (ERB). After testing the NR tool's validity and finding it a better predictor of self-reported environmental behaviors than other environmental scales, the authors used the tool to test whether people who were identified as nature connected by the tool were more likely to engage

in environmental responsible behaviors (ERB) (Nisbet et al., 2009). Results of the study showed that those individuals high in nature relatedness reported more environmental concern and endorsement of pro-environmental attitudes, and more self-reported environmental behavior (Nisbet et al., 2009). In addition, high levels of NR predicted an ecological perspective in participants, as well as strong views about the seriousness of ecological problems and human treatment of the environment (Nisbet et al., 2009). These findings offer empirical support for the claim that connectedness to nature (in this case nature relatedness) has a correlation with environmentally responsible behavior.

If, as Schultz (2002) and others (Clayton, 1998; Freyfogle, 1998; Gore, 1991; Kidner, 2001; Strong 1995; Taylor, 1986) have argued, the widespread devastation of the environment has been caused by human activity, and that further degradation of the environment can be prevented by fostering pro-environmental behaviors through increased nature connectedness or nature relatedness, the next step is to determine how people learn to be connected to nature, and whether nature connectedness can be taught. To answer these questions I turned to the literature on adult environmental education.

Adult Environmental Education

Over the past ten years, interest in environmental and sustainability issues has generated several edited works dedicated to adult environmental education (Clover, 2004; Clover, Follen, & Hall, n.d.; Dentith & Griswold, 2017; Hill & Clover, 2003). Noting that education has too long overlooked its own ecological dimensions, Griswold (2017) urges educators to address this deficiency by teaching students to recognize that “[o]ur attitudes and worldviews toward the environment are bound up in our current system, which perpetuates the injustice we seek to end” (Griswold, 2017, p.12). Adult educators working in sustainability, ecojustice, and environmental

education are doing so in formal educational contexts in higher education (Dentith & Thompson, 2017; Karlovic & Patrick, 2003); nonformal educational programs, such as environmental literacy programs (St. Clair, 2003; Tabiedi, 2004), public museums (Bell & Clover, 2017) and religious retreats (Groen, 2017); and community-based programs such as Indigenous social movements (Esteva & Reyes, 2004; Guevara, 2004; Kapoor, 2003), alternative food networks (Etmanski & Mitchell, 2017) and community currency projects (Winfrey, 2017).

To understand how individuals learn pro-environmental perspectives and behaviors, adult educators frequently turn to transformative learning theory. Researchers have used the lens of transformative learning to understand the role of instrumental learning in relearning cultural skills required to support sustainable ecosystems (Bowers, 2017; Moyer & Sinclair, 2016; Quinn & Sinclair, 2016; Sims & Sinclair, 2008), and the role of communicative learning in devising new ways of being in the world through the way we understand and develop skills in human communication and social meaning-making (Dentith & Thompson, 2017; Clover, Follen, Hall, 2000; Griswold, 2017). In transformative learning towards an ecological consciousness, the aim is for learners to engage in critical reflection and dialogue in order to challenge and alter long-held assumptions and alter the way they engage with their earth community (Dentith & Thompson, 2018; Taylor, 2009). Such a transformation in consciousness goes beyond a change in beliefs, perceptions, and assumptions – it also involves an engagement in the social and material world in order to establish a new kind of relationship with the natural world (Dentith & Thompson, 2018; Newman, 2104).

While the adult environmental education literature foregrounds the importance of addressing environmental degradation and fostering an ecological world view, it frequently emphasizes the social impacts of environmental issues, such as the environmental sexism and

racism produced by globalization (e.g., see Clover, 2004; Hill & Clover, 2003). This literature tends to present nature and the ecological environment primarily as a field of power contestation, giving less consideration to nature's inherent value, or its value to human and global physical, cultural, and spiritual health. There is room in the literature to explore how transformative learning impacts these other aspects of a learner's relationship to the environment, such as the development of nature connection. One place in adult education literature where such relationships with nature are being discussed is in the discourse around indigenous knowledge systems.

Conceptual Literature on Indigenous Knowledge Systems and Culture

As a folklorist, I am interested in the role of culture in learning, specifically culture as it is rooted in a particular ecological place. In the adult education and environmental education literature this topic has been primarily addressed in the context of indigenous knowledge and ways of knowing among politically defined Indigenous peoples such as Native American tribes of the U.S., First Nations peoples of Canada, African tribal cultures, and the Māori of Aotearoa. Little has been written in adult education addressing the “indigenous dynamics” (Semali & Kincheloe, 1999) of knowledge and knowing among cultures and peoples who have not been politically designated as “Indigenous.” Yet, all people are capable of a sense of belonging to the earth, or what depth psychologist and wilderness guide Plotkin (2013) refers to as “terra indigeneity,” regardless of their national or ethnic identity. In his writings on fostering cultural evolution and change towards ecological sustainability, Plotkin (2013) suggests that, ultimately, it is through an experience of terra indigeneity that an indigenous sense of place (ecological indigeneity) and cultural indigeneity can develop. This is the conceptualization of culture that I will explore in this study.

To differentiate between the various meanings of the word, I will use the term “Indigenous” with a capital “I” to refer to peoples and cultures who are so designated by the U.N.’s definition of Indigenous:

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems (Ooft et al., 2019).

When I refer to a more general sense of being native to place I will use the term “indigenous” with a lower case “i” or Plotkin’s (2013) more specific terminology.

To further clarify that this study is not of politically designated Indigenous peoples, their cultures, or knowledge systems, in the context of this study the process of developing a sense of terra indigeneity, ecological indigeneity, and cultural indigeneity will be expressed as “rewilding” to focus on the ways that any individual and any culture can form deeper connections with their ecological environment resulting in the creation of ecologically-grounded cultural knowledge and practices. To that end, a review of the conceptual literature on Indigenous knowledge and knowing will be followed by a review of the newly emerging literature on rewilding which attempts to address indigeneity among non-Indigenous peoples or peoples who no longer inhabit their ancestral lands.

A review of the adult education literature addressing indigenous knowledge and ways of knowing demonstrates that there has been increasing discussion around this topic in the past twenty years, but it is still an underdeveloped area in the field. One limitation of this literature is that it does not address the indigenous knowledge among people who are not considered politically Indigenous but who nonetheless engage in knowing and learning that is grounded in a specific place and is not considered official, academic knowledge, nor does it fall within dominant ideological paradigms. By conflating indigenous knowledge as a mode of knowledge or knowing with the specific knowledge systems of politically Indigenous peoples, the presence of, and interactions between, other modes of knowledge within Indigenous cultures is obscured and the role of knowledge with indigenous dynamics in non-Indigenous cultures is ignored.

There are three major themes within this literature: the value of considering the cultural context and incorporating cultural knowledge of adult learners into educational programs; the role of indigenous knowledge in emancipatory, popular education; and how indigenous ways of knowing might inform transformative learning theory.

Indigenous Knowledge Systems as Cultural Context

In “Culture as Context for Adult Education: The Need for Culturally Relevant Adult Education,” Talmadge Guy (1999) argues that culturally relevant education “is essential to helping learners from marginalized cultural backgrounds learn to take control of their lives and improve their social condition” (Guy 1999, p. 5). Guy argues that because “oppression is reproduced through culturally defined processes of learning” (Guy 1999, p. 11) educational settings that are built on a single cultural perspective marginalize and oppress students who do not share that cultural background and perspective. Guy (1999) suggests that culture and learning have a valuable reciprocal relationship in the classroom. On the one-hand, he sees culture as

integral to the meaning-making process and, on the other, he argues culture's inclusion in the classroom can help learners understand their culture and its values. While Guy does not address indigenous knowledge directly, he does reference minority culture, which could be understood as indigenous knowledge and ways of knowing that differ from dominant formal education practices. He points to four ways that educators can attend to the role of culture in their classroom by: 1) being aware of their own cultural identity and its bearing on how they interpret the world; 2) being aware of learners' cultural identities; 3) connecting with learners' lived experiences through the curriculum while avoiding stereotypes; and 4) sharing power and responsibility for learning in the classroom. The concept of culturally relevant education begins to make space for acknowledging and including indigenous knowledge and ways of knowing in adult education.

Curriculum theorists Semali and Kincheloe (1999) offer a definition of indigenous knowledge systems as “the dynamic way in which the residents of an area have come to understand themselves in relationship to their natural environment and how they organize that folk knowledge of flora and fauna, cultural beliefs, and history to enhance their lives” (Semali & Kincheloe, 1999, p. 3). They explain that knowledge based in these dynamics is local, life-experience based, and transmitted from one generation to the next, helping people to cope in their unique sociological and geographical contexts. Others writing in educational literature have defined indigenous knowledge as “local or community knowledge that is commonly generated and transmitted over a period of time in geographic and historic space” (Fasokun et al., 2005, p. 61), generated organically in the daily lives of people in a local context, passed on from one generation to the next, often in oral form (George, 1999), and is conveyed outside of official

educational institutions through “story-telling, poetry, metaphor, myth, ceremony, dreams and art; and honoring indigenous elders as ‘cultural professor’” (Graveline, 2005, p. 308).

While these authors suggest that these qualities are unique to the knowledge of Indigenous peoples, this type of knowledge can be found in all cultures and is often referred to as folklore. Brunvand (1978) defines folklore as “the traditional, unofficial, non-institutional part of culture. It encompasses all knowledge, understandings, values, attitudes, assumptions, feelings, and beliefs transmitted in traditional forms by word of mouth or by customary examples” (Brunvand, 1978, p. 1). Klein (2001) describes folklore as “oral narration, rituals, crafts, and other forms of vernacular expressive culture” (Klein, 2001, p. 5711) while Hufford (1991) enumerates the various forms that unofficial, community-based knowledge can take, such as

the shaping of everyday experiences in stories swapped around kitchen tables or parables told from pulpits. It is the African American rhythms embedded in gospel hymns, bluegrass music, and hip hop, and the Lakota flutist rendering anew his people’s ancient courtship songs. ... [It is] the variety of ways there are to skin a muskrat, preserve string beans, or join two pieces of wood. [It is] the society welcoming new members at bris and christening, and keeping the dead incorporated on All Saints Day (Hufford, 1991, p. 1).

Given that there is such a robust discourse in the discipline of folklore around the locally- and community-based knowledge of a multitude of cultural groups, beyond those politically defined as Indigenous, folklore research could offer much to the theorization of indigenous knowledge and learning in the field of education.

Unfortunately, the educational literature (Bang et al., 2014; Barnhardt & Kawagley, 2005; Bat et al., 2014; Calderon, 2014; De Angelis, 2018; Drayton, 2014; Drayton, 2014;

Kapoor, 2003; Lekoko & Modise, 2011; Mauro & Carroll, 2014; Scully, 2012; Van Damme & Neluvhalani, 2004; Whitehouse et al., 2014; Williams, 2018), has remained unaware or uninterested in this resource and has focused its research on indigenous knowledge systems as they exist among subjugated peoples who have an historical connection to a specific ecological region who have experienced a history of subjugation by Western science-produced knowledge (Semali & Kincheloe, 1999). However, recognizing that such a narrow definition of indigenous knowledge precludes discussion of the community-based knowledge that exists among non-subjugated people, Semali & Kincheloe (1999) make some space for the discussion of the indigenous knowledge of people who are not considered subjugated by designating such knowledge as possessing “indigenous dynamics” (Semali & Kincheloe, 1999, p. 15). Semali and Kincheloe (1999) make the distinction between “indigenous knowledge” and knowledge possessing “indigenous dynamics” in order to highlight the role of power in legitimating and discrediting different systems of knowledge based on a community’s or culture’s access to power. Yet an unintended consequence of this distinction has been that it obscures the common processes of cultural production that these knowledge systems share.

For Semali and Kincheloe (1999) the goal of including indigenous knowledge in the classroom is to raise “epistemological questions relating to the production, and consumption of knowledge, the subtle connections between culture and what is defined as successful learning, the contestation of all forms of knowledge production and the definition of education itself” (Semali & Kincheloe, 1999, p. 38). By challenging Western modernist epistemology with other worldviews, the authors argue, Western students and educators participate in a “transformative science of education” (Semali & Kincheloe, 1999, p. 45) which rejects the assumed universality of the Western modernist scientific worldview and allows students and educators alike to “come

to understand that their ways of seeing the world are but one of a plethora of cultural perspectives” (Semali & Kincheloe, 1999, p. 47). However, it would be a mistake to assume that all Western students hold a Western modernist scientific perspective as their primary, or even sole, cultural worldview. While the authors’ emphasis is on introducing indigenous knowledge of subjugated peoples into the classroom they do acknowledge that Western students also come from unique local and cultural contexts with “indigenous dynamics” (Semali & Kincheloe, 1999, p. 15) which influence the ways that they make meaning outside of the Western modernist scientific paradigm. To illustrate this, Kincheloe describes his personal experience of the conflict between the indigenous knowledge of white southern Appalachian locals who mentored him as a child and the Western modernist scientific perspective of the public-school system that devalued this local knowledge. This tension began the stirrings of an awareness in Kincheloe that there was more than one way to understand and make sense of the world. In order to effectively critique the notion of a universalist epistemology students need a similar lived experience of a dissonance between two contending worldviews. To this end, Semali and Kincheloe call for educators to seek out and analyze indigenous knowledges from their students’ cultural contexts because “one of the most important aspects of an indigenously-informed education involves educators and students using their indigenous perspectives to examine knowledge and knowledge production as a discourse” (Semali & Kincheloe, 1999, p. 50). The authors recognize that effective learning requires more than conveying facts about multiple cultures and their epistemologies. For a transformation of perspective to occur it is necessary to connect students’ lived experiences with the larger epistemological and cultural dynamics they are attempting to analyze.

Subsequent researchers have also identified the need to address and embrace indigenous knowledge in education. Drayton (2014) argues that cultural identity and social context have a profound impact on the transition to adulthood. Educators should be aware that the educational setting is a site of contact between potentially conflicting world views, where indigenous knowledge is one contender. The result of this contact will have repercussions for the student's personal development, and it is the educator's responsibility to consider the consequences. In order to address this need among students of African descent, Tolliver (2015) presents Africentrism as an indigenous paradigm whose time has come to be included in the academy. Rooted in traditional African ethos of Ubuntu, the recognition of a fundamental unity that connects all things through Spirit, is a response to the need among people of African descent for agency and self-determination; is a remembering of the legacy of African achievement and accomplishment; reaffirms the positive aspects of indigenous African cultural values and ways of being; and promotes resistance against the violence of hegemonic philosophies. She argues "Africentrism purposefully supports the development of positive self-perception that can benefit from and be motivated by the strengths and beauty of the traditions and cultures of people of African ascent" (Tolliver, 2015, p. 63). Outside of the formal classroom, Cueva (2010) illustrates her attempts at culturally relevant community health education with Alaskan natives by creating a safe space and a culture of listening so that diverse perspectives, including indigenous knowledge, can be received and engaged in open dialogue.

Indigenous Knowledge Systems and Education for Social Change

A few educators have considered how addressing students' indigenous knowledge might not only enhance the learning experience but motivate action towards social change. In her work with environmental education, Clover (1995) developed a framework for critical environmental

adult education that incorporates the philosophies and methodologies of adult education, feminist pedagogy, popular education and indigenous ways of knowing. Recognizing that environmental education cannot change peoples' relationship with the environment through critical feminist and popular pedagogy alone, she suggests that the inclusion of indigenous ways of knowing in this work inspires a deeper understanding of the inter-connectedness of all life and reciprocity between humans and nature. By incorporating the indigenous perspective of nature as teacher and a sacred place that instructs through felt experience, critical environmental adult education grounds education in human/nature interaction in order to teach respect for nature which is fundamental to inspiring action. Emphasizing the important role that a spiritual relationship with nature plays in motivating conservation efforts, Kapoor (2003) likewise notes that the Kondh people's indigenous cosmological view of the landscape as sacred was an important motivating factor in the popular education movement that led to social action in India.

Adult environmental educator Tabiedi (2004) argues that women's empowerment is closely linked to sustainable development in Sudan. In an attempt to address major environmental problems in Sudan, she found that Sudanese women possess important indigenous knowledge about sustainable agriculture, animal husbandry, crafts and medicine that has been overlooked as these activities have been commercialized and industrialized. These industrial approaches have led to increasing drought and desertification. Tabiedi (2004) argues that women's empowerment through literacy and training programs will have a major impact on socio-environmental change because as women's political and social power increases so, too, will the appreciation of their traditional knowledge and skills for working with the land in a sustainable way.

Indigenous Knowledge Systems and Transformative Learning

Several authors have considered how indigenous ways of knowing might enhance transformative learning theory. Applying Mezirow's transformative learning theory in a Botswanan context, Ntseane (2011) found that the theory would be more useful if it were more culturally sensitive to indigenous knowledge paradigms. Specifically, she argues that in the African context, transformative learning must take into consideration the communal dimensions of learning. To this end, she proposes that a transformative learning theory of indigenous African learning should acknowledge that because knowledge is created communally it can have no absolute form; the metaphysical world always inflects knowledge; communal knowledge is inextricably connected to collective responsibility; and gender roles play a critical role in processing knowledge. Analyzing transformative learning theory in a Buddhist/Eastern context, De Angelis (2018) argues there is a need to investigate analogous approaches to transformative learning from indigenous traditions that incorporate an understanding of spiritual intelligence in the process of self-reflection and self-realization. She highlights four elements of Buddhist/Eastern spiritual perspectives that could contribute to transformative pedagogy for sustainability: individual (inner experience); oneness and interdependence of reality; sustainable moral values; and local traditions and customs. By incorporating these elements into transformative learning theory and studies, she suggests researchers can resolve the critique that Mezirow's model of transformative learning is too dependent on rational approaches to meaning making.

As non-Indigenous transformative and sustainability education researchers and practitioners increasingly engage with indigenous knowledge and ways of knowing, Williams (2018) reminds us of the need to do so ethically, grounded in decolonizing frameworks.

Recognizing that “all human languages and cultures are born of place” and that “all beings have an innate capacity to be of and resonate deeply with place” (Williams, 2018, p. 346), he posits that there is a critical difference between the political ecology and lived experience of Indigenous and non-Indigenous peoples. Therefore, Williams argues, if transformative sustainability education is to incorporate indigenous ontologies into its methodology ethically, then it must “necessarily adopt an Indigenous resurgence agenda (the resurgence not only of Indigenous worldviews and ways of being but of Indigenous societies and lands as well)” (Williams, 2018, p. 348). Engaging in this resurgence requires understanding how colonialism structures the everyday political ecology that inflects human action with the environment and with one another. Therefore, Williams highlights the value of a participatory educational paradigm, that supports the recovery of ancestral languages, customs, and land, as an appropriate access point for non-Indigenous partners to learn about Indigenous epistemologies and relations to place.

The existing literature in adult education addressing indigenous knowledge demonstrates a growing awareness of the role traditional, land-based knowledge plays in education and the learning process. Researchers are also beginning to address how to engage with indigenous epistemologies and ontologies ethically, recognizing simultaneously the importance of cross-cultural learning and an awareness of historical realities of power. Williams’ (2018) work points to the need for more research examining how non-Indigenous learners might engage with indigenous ways of knowing in an ethical way that cultivates a relational ontology, a process that has been referred to as “reindigenization” or “rewilding.”

Conceptual Literature on Rewilding

This section will provide an overview of the conceptual literature on rewilding by first addressing the related term of reindigenization and its associated literature. The review will then

consider how the concept of rewilding differs from reindigenization and then establish rewilding as this study's organizing concept for the process of becoming indigenous to earth, ecological place, and culture, as described by Plotkin (2013).

Reindigenization

The term reindigenization has been used by scholars in education, environmental studies, and indigenous knowledge, as well as community activists in environmental and social change and community resilience to describe the process of rebuilding what Plotkin (2013) refers to as terra, ecological, and cultural indigeneities (Baskin, 2019; Bioneers, 2014; Blackie, 2017; Cajete, Mohawk, & Rivera, 2008; MacKinnon, Williams, 2018; Williams, & Waller, 2017; Nelson, 2015). However reindigenization has also been used more specifically to refer to the processes of restoring the sovereignty, knowledge systems, or cultural practices of politically-defined Indigenous peoples, such as Native American tribes of the U.S., the Māori of Aotearoa, and First Nations people of Canada (Bang et al., 2014; Barnhardt & Kawagley, 2005; Bat et al., 2014; Calderon, 2014; Damme & Neluvhalani, 2004; De Angelis, 2018; Drayton, 2014; Drayton, 2014; Kapoor, 2003; Lekoko & Modise, 2011; Mauro & Carroll, 2014; Scully, 2012; Van Damme & Neluvhalani, 2004; Whitehouse et al., 2014; Williams, 2018). Educators, researchers, and community activists MacKinnon, Williams, and Waller (2017) use the term in both of these senses in their work with indigenous and Indigenous knowledge and building community resilience. They posit that some Indigenous and place-based communities still possess forms of social-ecological resilience that are helpful models for mitigating the impacts of environmental degradation. Through their work with the Alliance for Intergenerational Resilience (AIR), the authors have investigated how such resilience might be recovered among communities where it has been lost and have developed some pedagogical approaches to nurture social-ecological

resilience across culturally diverse Indigenous and settler-migrant communities. In line with the decolonizing ethic of land-based education articulated by Williams (2018), AIR is founded on the principle that Indigenous resurgence is integral to the broader resilience of the planet because the

cultural practices and principles of Indigenous peoples hold insights that can not only contribute to those peoples' own ongoing struggles against colonizing powers, but can also contribute to the paradigmatic shift in worldview required if humanity is to maintain and develop forms of resilience needed to meet the unprecedented social and ecological challenges of the 21st century and life in the Anthropocene. (MacKinnon et al., 2017)

Based in Indigenous ontologies that view humans within a “kincentric ecology” (Salmón, 2000, p. 1332), MacKinnon et al. (2017) see reindigenization efforts as those that seek to understand how certain communities have maintained a view of humanity that is inextricably linked to a local, ecological family, and foster that knowledge among Indigenous and settler communities, alike, who no longer live according to that worldview.

Wampanoag elder and Indigenous scholar, Manitonquat (2009), refers to such indigenous knowledge as the “Original Instructions of Creation” which allow people to “live in balance, in a good way, in beauty and happiness” (Manitonquat, 2009, p. xiii). He explains that these ways of being in the world are not cultural instructions, like social mores and laws of the land, but natural instructions that can only be found in “the book of nature” (Manitonquat, 2009, p. xx). These Instructions call people to be real human beings and walk in a sacred manner through the practice of respect, living in relationship, and thanksgiving; to follow a good path in life by practicing awareness, humor, and honesty; to build a society of love and happiness through

humility, generosity, and hospitality; and to find joy in creation through living with wisdom, courage, and beauty.

The elders who granted Manitonquat permission to share the Original Instructions outside of their community did so because they believed that this knowledge was not unique to, and only intended for people who have Indigenous political status today. Rather, they held that the Original Instructions were given to all humankind and are reflected in the traditional knowledge of all cultures, but many have forgotten them and no longer remember how to live in a good way. However, the political reality for many communities who have forgotten the Original Instructions is that they no longer live on the land to which they were once indigenous and possibly now inhabit the indigenous home of another, likely dispossessed, people. Even for Indigenous communities who still inhabit their ancestral lands, colonization has led to a sense of alienation from the land and an accompanying loss of ways of knowing and being (MacKinnon et al., 2017). In a world of frequently migrating human populations where all people, regardless of political Indigenous status, are susceptible to disconnection from nature and one another, Manitonquat (2009) shares this reminder that all people have a common heritage of indigenous knowledge in the traditional wisdom of the Original Instructions.

Noting the capability and need for all people to be indigenous to earth and a specific socio-ecological place, yet recognizing the need for a distinction between the reindigenizing process of politically Indigenous communities and non-Indigenous peoples, educator, botanist, and Indigenous scholar Robin Wall Kimmerer (2013) proposes the concept of “becoming naturalized to place” to describe how settler communities might come to connect with the land they inhabit. She explains,

Being naturalized to place means to live as if this is the land that feeds you, as if these are the streams from which you drink, that build your body and fill your spirit. To become naturalized is to know that your ancestors lie in this ground. Here you will give your gifts and meet your responsibilities. To become naturalized is to live as if your children's future matters, to take care of the land as if our lives and the lives of all our relatives depend on it. Because they do (Kimmerer, 2013, p. 214-215).

Using the common wild plantain, also known as *Plantago major* or White Man's Footstep, as a metaphor, she explains how this plant is not a native to the North American continent but arrived with European settlers. There are many immigrant plants that can be considered "foreign invaders" (Kimmerer, 2013, p.214), including loosestrife, kudzu, garlic mustard, and tamarisk, which can unbalance and dominate native ecological systems. Yet plantain is an immigrant plant teacher that demonstrates how one can come into a new environment and integrate in such a way that they coexist in balance with the native inhabitants. Plantain is not indigenous to North America in the sense that it emerged and evolved in a different ecological environment, but plantain has become naturalized to its new home and actively contributes to the support of the delicate system in which it lives. Kimmerer suggests that, like plants, people can naturalize themselves to new ecological and cultural environments by throwing off the mindset of the foreign invader and coming to see their own fate and wellbeing intertwined with that of the indigenous citizens (humans and non-human) of their new home and acting accordingly.

Emergence of Rewilding

The spectrum of indigeneity that Kimmerer (2013) outlines is complicated further by scientific critiques of the “native” versus “alien” distinction between species (Rodman, 1993; Brown, 1997; Hattingh, 2001; Aitken, 2004; Townsend, 2005; Warren, 2005; Woods and Moriarty, 2001). Since no species is inherently alien or native but is so only in relation to a particular environment at a particular moment, such distinctions rely on designating a temporal and spatial threshold after and beyond which nature is no longer natural (Warren, 2007). In ecological literature, native vs. alien temporal thresholds can vary widely – from the pre-Neolithic era (six millennia ago) to the date of European colonization a few hundred years ago – and they account differently for anthropogenic environmental change, sometimes acknowledging the impacts aboriginal peoples have had on the environment, and other times considering these changes differently than those caused by European colonizers (Warren, 2007). Head (2000) argues therefore,

The pristine baseline – the ‘natural landscape’ – is a mirage, receding as it is approached. Even if found . . . it is of limited value . . . as it existed under different boundary conditions, particularly of climate ... The notions of ‘natural’, ‘original’ or ‘pristine’ landscapes are so problematic . . . as to be of little practical use. (Head, 2000; 4, 118)

Seen in this light, determining just where and when any species can be considered indigenous may be a never-ending pursuit that will lead those questing for it further and further from connecting to any particular place. This is the antithesis of nature connection.

As an alternative to reindigenization, *rewilding* is a term that has recently emerged in the literature (Baker, 2017; Barnes, 2019; Bekoff, 2014; Louv, 2019; Mortali, 2019; Monbiot, 2014; Olson, 2012; Snyder, 2010) to refer to the general process of “returning home to place” (Plotkin, 2013, p. 55). The word “rewilding” avoids some of the controversy associated with the term reindigenization, though rewilding discussions do sometimes reference Indigenous epistemologies and practices and broader conceptions of indigeneity, such as those presented by Plotkin (2013). Initially a term coined in the scientific discourse around ecological restoration, rewilding has been adopted by the broader environmentalist community to refer to a holistic vision of reintroducing native species and relinquishing productive land (agricultural or forest) to a non-cultivated state (Jørgensen, 2015). The concept has subsequently been adopted by other academic disciplines, as well as environmental activists and popular environmental literature.

Writing for general audiences, Bekoff (2014) uses the phrase “rewilding of the heart” to describe a process through which people become reenchanted with nature, nurture a sense of wonder for the natural world, and cultivate compassion and empathy for all other living beings. The goal of his work is to inspire humans to recognize themselves as members of the animal community and, with a new empathetic perspective, end the abuse of animals. In *Rewilding: Meditations, Practices, and Skills for Awakening in Nature* (2019) director of the Kripalu Schools for yoga-based education, Micah Mortali (2019) describes “personal rewilding” as “the practice of mindfulness in nature, which connects us to our original natural or wild essence” (Mortali, 2019, p. 8). Mortali offers an actionable guide that encourages readers to get outside to practice what he has identified as core methods of connecting to nature – through breathing, relaxing, feeling, watching, and allowing. Mortali’s thesis is that connecting with the natural

world through these rewilding practices promotes health and wellbeing, and fosters "dedicated care-takers" and "active ambassador[s] for the more-than-human world" Mortali, 2019, p. 12.

As an emergent term, rewilding has not yet been codified with a consistent definition and there are currently a limited number of academic texts and studies that address the concept. The vast majority of this literature is found in the field of ecological restoration and conservation and refers to ecological rewilding (Cloyde, 2017; Jørgensen, 2015; Prior & Ward, 2016). Outside of the restoration discourse, rewilding literature is most likely to be found in the field of ecopsychology, primarily as unpublished dissertation studies (addressed in the empirical literature section of this chapter), though there are a few conceptual articles that address it (Hasbach, 2015; Kahn & Hasbach, 2013; Plotkin, 2013).

In "Rewilding Psychology" Plotkin (2014) calls for a new form of psychotherapy that "acknowledges humanity as, first and foremost, natural, of nature—not separate from it" (Plotkin, 2014, p. 3). A rewilded psychology, also referred to as ecopsychology, is one whose ideas and methods rooted in the rhythms, patterns, principles, and other-than-human encounters of greater nature... firmly planted in both wild soil and the soul of the world, at once both an ecopsychology and a depth psychology, one that emboldens us to serve the greater Earth community and to enhance the life of all species and that does not tempt us to merely 'use' nature for our own psychological healing, self-centered benefit, or egocentric profit. (Plotkin, 2014, p. 3)

Similarly, Khan and Hasbach (2013) illustrate their ecopsychological interpretation of rewilding in an edited collection of essays on the need for humans to connect with and protect the wild for psychological and physical well-being. The authors argue that humans as a species have evolved

in close connection with the wild and that “much of that wildness exists still within the architecture of our bodies and minds, and needs to be rediscovered, re-engaged, developed, and lived—we need to be rewilded—for us as a species to flourish” (Khan & Hasbach, 2013, p. 207). They explain that rewilding can be accomplished by reinstating the importance of the primal self in relation to the natural and to other humans through valuing and finding healthy expressions of primal passions, which they identify as sexual and aggressive. Additionally, because modern societies “fear our fear of nature too much [they] underappreciate how fear of nature can be life enhancing even when it is in response to objective dangers” (Khan & Hasbach, 2013, p. 207). To rectify this, the authors suggest that we need to learn to fear nature appropriately, recognizing what is and is not a true threat rather than fearing all that is wild for its wildness. This fear has carried over into how we structure our communities, making them increasingly homogenous, hierarchical, and therefore, supposedly, safe. Khan and Hasbach (2013) argue that for humanity as a whole to rewild we must invite back into human experience greater natural variation in the satisfaction of human needs and desires, embrace flatter social hierarchies, and recognize that while technologies offer many benefits to our species, they cannot substitute the benefits of immersion in the natural landscapes from which we evolved. In a subsequent article, Hasbach (2015) considers how rewilding practices and nature language might be used by therapists to assist clients’ transformation towards ecological consciousness.

In the field of adventure therapy rewilding refers to “the process by which therapists aid their participants in... awakening their senses through immersive experiences in the natural world. This is not advocating for a return to wearing furs and living in caves, but rather that humanity is meant to viscerally experience nature in order to have a reciprocal relationship with the more-than-human world” (Hafford, 2014, p. 28). Hafford (2014) argues that rewilding is

essential to the formation of connections between therapy clients and nature, connections that are crucial for individual, societal, and planetary health, as well as ecological sustainability.

The concept of rewilding is beginning to be embraced by other academic disciplines, as well. In a paper presented at the Annual Meeting of the American Educational Research Association, Hauk (2016) used the concept of rewilding as a framework “to unstick domination narratives embedded in Disneyland by using creative imagination and futurecast cultural imaginaries in which the earth system reinhabits agentic powers.” In the field of planetary health and the environment, Prescott and Bland (2020) refer to human rewilding on a microbial level, calling for a “micro-rewilding” of human gut and skin microbiota, overlooked but essential systems in the greater systems of human and planetary health. The authors illustrate how these systems, along with other more visible ecological systems, have been impacted by biodiversity loss, in both human diet and the greater environment. Additionally, they argue that nature relatedness may be crucial in bringing greater awareness, on an individual and societal scale, of the multiple biological systems that both comprise, and are comprised of, human bodies on this planet. Rewilding has even been applied to fashion and design theory. In an article examining the two dominant camps of sustainable fashion, Payne (2019) uses the concept of rewilding to refer to “a paradigm shift to transform conventional fashion production and consumption to new cultures of using, making and remaking” (Payne, 2019, p. 15). Fashion is rewilded through “humble actions” such as making, mending, repairing, and the hacking of existing clothing – actions that cultivate an environment in which individual expression can flourish in the “wild spaces... beyond the dictates of the fashion industry” (Payne, 2019, p. 15).

While some texts use the term “rewilding” as a contrast to a domesticated, consumption-driven state of being associated with modern Western society (Hauk, 2016; Mortali, 2019;

Payne, 2019), for this study I will be using a concept of rewilding more in line with Plotkin (2011; 2013; 2014) and his understanding of human development as “rooted in the rhythms, patterns, principles, and other-than-human encounters of greater nature” (Plotkin, 2014, p.3). With the understanding that humanity as a species has evolved over millennia within a “wildly complex web of ecological relationships in a thoroughly animate world” (Plotkin, 2014, p.3), it becomes more clear how a relationship to our natural environment is integral to who we are as individuals and communities, and why forming relationships with the ecologies in which we live is so vital.

Rewilding and Nature Connection

It is in light of this need to become reacquainted with the land and one’s place in the greater social-ecological system that (re)learning nature connection becomes essential. In their review of social and behavioral science studies investigating connectedness to nature, Restall and Conrad (2015) define the study of nature connectedness as an examination of “how people identify themselves with the natural environment and the relationships they form with nature” (Restall & Conrad, 2015, p. 1). Common to all of the studies was an understanding that “a relationship with the natural world directly affects people’s physical, mental, and overall wellbeing due to benefits gained by increased exposure to nature and positive experiences in the natural world” (Restall & Conrad, 2015, p. 1) with several authors (Dutcher et al., 2007; Nisbet et al., 2009; Perkins, 2010; Schultz, 2001) suggesting that these positive experiences can lead to a more connected sense of self with nature, and ultimately, altered ways of living with nature. In order to foster this sense of connection with nature, nature connection educators Young, Haas and McGown (2016) outline foundational core routines of nature connection which they loosely define as “things people do to learn nature’s ways. They aren’t lessons. They aren’t knowledge.

They are learning habits” (Young, Haas & McGown, 2016, p. 35). Examples of core nature routines are deep nature immersion and observation; storytelling; sense meditation; questioning nature observations and tracking animals; imitating animals; timeless wandering through a landscape; mapping a landscape; wilderness survival skills; studying bird language; and thanksgiving or gratitude.

While the aim of practicing nature connection routines is to “restore finely tuned habits of awareness based on nature” and “develop the ability to use all one’s senses out in the field to understand the interdependent web of life” (Young, Haas & McGown, 2016, p. 27), Young, Haas, and McGown ultimately view connection as a sense of kinship that goes beyond cognitive recognition of interconnection. For these educators, relationship is at the heart of nature connection. While at first glance, many of the core routines appear to be solitary activities, the authors emphasize the importance of developing a relationship with nature within a community setting. Storytelling (and its associated practices of deep listening and questioning) is a key accompaniment to many of the core routines – it builds collective knowledge that expands and completes individual experiences and perspectives; it pushes the edges of one’s knowledge to seek out a deeper understanding; and the affirmation of personal experience by one’s listeners inspires the storyteller onto future learning. Additionally, the authors argue that through nature connection individuals gain a deeper appreciation of their human nature and their unique role in their family and community ecosystem, helping them to take an active responsibility in building and sustaining community.

It is therefore important to recognize the important role of culture in the process of rewilding. First, rewilding takes place within a political, historical, and social context that has already impacted individual and community relationships with the land they inhabit – this is why

a process of rewilding is necessary in the first place. To not attend to the underlying causes of the loss of connection to nature is to not fully understand one's relationship to the land that he or she now inhabits. Without a complete understanding of this relationship, deep nature connection is not possible.

Secondly, the core routines of nature connection, outlined by Young et al. (2016), are grounded within the social practices of a community, whether it be a family, an educational program, or a larger society that intentionally fosters nature connection in some way. For communities who have maintained nature connection traditions over generations, these practices will have an established place in the culture. For instance, while Catholic missionaries, British colonialism, and globalization have impacted Irish indigenous culture over hundreds of years, in county Mayo, Ireland, the land-based tradition of pilgrimage to the holy mountain Croagh Patrick on Lughnasadh, the end of July and the beginning of the harvest season, continues to this day. Within this annual trek to the mountain are woven a myriad of spiritual, seasonal, and community traditions that use engagement with the land to make individual and communal meaning (Johnson, 2011). However, just because a community does not have a shared culture of nature connection does not mean that one cannot emerge.

Rewilding and Emergent Tradition

As Semali and Kincheloe (1999) mention in their definition of indigenous knowledge systems, such knowledge is intimately tied to a community's folklore. Historically, folklore has been difficult to define (Simms & Stephens, 2005), but a commonly accepted definition appropriate to this discussion is offered by Jan Brunvand (1978) who defines folklore as "the traditional, unofficial, non-institutional part of culture. It encompasses all knowledge, understandings, values, attitudes, assumptions, feelings, and beliefs transmitted in traditional

forms by word of mouth or by customary examples” (Brunvand, 1978, p. 1). Grounded in the concept of *tradition*, folklore is both structured and dynamic, “[a]nswering the needs of the collective for continuity and of the individual for active participation, folklore...is that which is at once traditional and variable” (Glassie, 1989, p. 31). This dance between continuity and change links cultural expressions to the past while simultaneously allowing them to respond and adapt to current circumstances so that folklore is ever-emerging each time it is performed, practiced, or shared. Yet tradition is not limited to only that which has come before; new cultures and traditions emerge all of the time (Hobsbawm, 1983). Rather than jeopardizing the authenticity and value of a tradition, the constant reinvention of tradition is an important part of cultural vitality and the folkloric process (Bendix, 1997; Dundes, 1977; Kirshenblatt-Gimblett, 1998). This is consistent with Semali and Kincheloe’s (1999) declaration that indigenous knowledge systems arise to help people cope with their socio-ecological context.

Empirical Studies

This study has been informed by previous research studies in the areas of nature connection, indigenous knowledge systems, rewilding, and transformative learning. In order to understand the gaps in existing empirical knowledge on these topics it was necessary to first review the studies that have come before. This section will provide an overview of the existing literature on these three topics before outlining a place for the current study to contribute to the adult education discourse.

Nature Connection

While the importance of connecting with nature has been widely acknowledged and discussed in conceptual and philosophical environmental and sustainability literature (Arne Naess, 2010; Orr, 2004; Pyle, 2003; Berry & Swimme, 1990; Macy et al., 1998), attempts to

define and evaluate CWN empirically have gained momentum in the last twenty years (Dutcher, Finley, Luloff, & Johnson, 2007). Major themes of the empirical literature are: **defining and measuring connectedness with nature (CWN)** (Cervinka, Röderer, & Hefler, 2012; Cheng & Monroe, 2010; Dutcher, Finley, Luloff & Johnson, 2007; Kals, Schumacher & Montada, 1999; Mayer & Franz, 2004; Nisbet, Zelenski & Murphy 2009; Raymond, Brown & Weber, 2010; Saunders, 2003; Schultz, 2002; Schultz, Shriver, Tabanico, & Khazian, 2004; Tam, 2013a&b); **examining the relationship between CWN and environmentally responsible behavior (ERB)** (Cagle, 2018; de Pater, Scherer-Rath, & Mertens, 2008; Dutcher, Finley, Luloff, & Johnson, 2007; Guiney & Oberhauser, 2009; Hoot & Friedman, 2011; Mayer & Frantz, 2004; Nisbet & Zelenski, 2013; Nisbet, Zelenski, & Murphy, 2009; Obery & Bangert, 2017; Weinstein, Przybylski, & Ryan, 2009); and **identifying the impact of CWN on health and well-being** (Berman, Jonides, & Kaplan, 2008; Capaldi, Dopko, & Zelenski, 2014; Dean et al., 2018; Feral, 1998; Hartig, Mang, & Evans, 1991; Howell, Dopko, Passmore, & Buro, 2011; Kaplan, 1995; Nisbet, Zelenski, & Murphy, 2011; Zelenski & Nisbet, 2014). Despite this boom, there are few empirical studies of context-specific strategies for cultivating CWN in the scientific empirical literature. Nevertheless, the fields of ecopsychology and outdoor education have generated a rich collection of applied work that is ripe for empirical analysis (Zylstra, Knight, Esler, & Le Grange, 2014).

Factors Influencing Nature Connection

Two key factors that influence nature connection emerged from a review of the literature: past experience with nature and sustained engagement with nature in everyday life. In addition, there is some evidence that demographic variables also play a role in nature connection. If

cultivating nature connection is integral to future ecological sustainability, it is important to understand what factors are associated with developing connectedness with nature.

Past Experience with Nature/ Significant Life Experience. In a 1980 article in the *Journal of Environmental Education*, Tom Tanner (1980) argued the importance of understanding the kinds of learning experiences that inspire people to be informed, committed stewards of the earth so these experiences might be replicated in an effective environmental education. One method of studying such experiences is “to examine retrospectively the lives of citizens who have demonstrated amply their informed and responsible activism” (Tanner, 1980, p. 20). Tanner’s suggestion sparked a new area of research in the field of environmental education: significant life experience. Experience is especially useful in understanding CWN because “meaningful experiences are capable of invoking strong affective responses as well as playing a pivotal role in reframing an individuals’ cognitive representation of their relationship with nature” (Zylstra et al., 2014, pp. 125-6). In a review of significant life experience research to date, Chawla (1998) established six categories of sources of environmental concern the field had identified: extended time spent outdoors in natural areas, often in childhood; parents or other family members; teachers or classes; involvement in environmental organizations; books; and the loss or degradation of a valued place. These categories have been supported and expanded by subsequent studies in Brazil, El Salvador, Taiwan, China, the United Kingdom, Greece, and Slovenia (Bezerra, 2009; Diniz, 2010; Hsu, 2009; Palmer et al. 1998; Sward, 1999; Sousa, 2008; Torkar, 2014) to acknowledge the influence of experiences concerning social justice, future generations, ethical principles and religion or spirituality.

In one of the earlier empirical studies of the relationship between time spent in nature and emotional affinity with nature, Kals, Schumacher and Montada (1999) analyzed questionnaire

data from 281 German citizens about their experiences with nature. They found that 39% of the variance in emotional affinity toward nature could be traced back to present and past experiences in natural environments and time spent in nature with significant others, such as family or friends.

Chawla (1999) and Sward (1999) expand on this finding by incorporating qualitative data into their analysis to better understand the nuances of the life experiences that participants identify as significant. In a cross-cultural study of fifty-six environmental activists in Kentucky and Norway, Chawla (1999) paired quantitative and qualitative data to identify the types of experiences that inspire environmental sensitivity, considered the major “entry-level variable” in Hungerford and Volk’s (1990) model of determinants of responsible environmental behavior. Analysis of semi-structured autobiographical interviews highlighted five categories as especially significant in developing a sense of connection and commitment to the environment: experiences of natural areas in childhood, particularly in the course of daily routines; influential family members who modeled an awareness and appreciation of nature; involvement in environmental or outdoor organizations; the destruction of valued natural places or the fear of man-made toxic threats; and education, in the form of inspiring teachers or classes. Chawla points out that these findings challenge a narrower definition of environmental education, which emphasizes formal educational contexts and practices, and draws attention to the importance of informal and nonformal outdoor learning experiences that take place in everyday life. As a cross-cultural study, Chawla’s findings also suggest that the relationship between environmental sensitivity and these life experiences may not be limited to a single culture. Sward’s (1999) study of the significant life experiences of El Salvadoran environmental professionals produced findings

similar to those of Chawla (1999), suggesting that the significance of these experiences may not be limited to environmentalists in the global north.

Subsequent studies have reaffirmed the significance of childhood experiences in nature for people who have an affinity for nature or a desire to protect it. In a study of thirty-six undergraduate psychology students Hinds and Sparks (2009) found that participants who grew up in more rural locations reported greater frequency of experiences in natural environments, greater personal meaning, and stronger environment-related identities. Similarly, Guiney and Oberhauser (2009) found that almost all 145 volunteers in the Minnesota Master Naturalist program they surveyed felt a connection to nature, and for most of them, this connection began in childhood. For the majority of these volunteers their interest in nature was sparked through informal engagement in nature, such as unstructured exploration, observing wildlife, and collecting natural items. And for many, these significant experiences were in the company of family “especially parents or grandparents, who helped them develop an interest in nature” (Guiney & Oberhauser, 2009).

In a study of 148 undergraduate pre-service elementary teachers enrolled in three different institutions in the U. S., Blatt and Patrick (2014) had participants read Richard Louv’s book *Last Child in the Woods: Saving our children from nature-deficit disorder* (2005) and then write an essay reflecting on their own past experiences and feelings towards the outdoors, and their beliefs about teaching in outdoor settings. The study found that the majority of participants viewed nature as important in varying ways (89.9%) and described having significant youth experiences in the outdoors (97%). In addition, a majority of participants expressed a desire to expose their own students to the outdoors (65.5%). While it is possible that reading Louv’s text before reflecting on their own experience influenced participant responses, this study supports

the claim that positive childhood experiences in the outdoors correlates with valuing nature later in life, and, in the case of teachers, a sense of responsibility to provide this same experience to their students.

The studies above primarily focus on the experiences of educated professionals in industrial or post-industrial nations, often using small samples that are not representative of the general public (e.g. several study samples over-represented women). Based on these studies alone it cannot be assumed that significant life experiences are universal. There may be significant differences between groups based on any number of characteristics. More research is needed, ideally longitudinally, examining the significant life experiences of pro-environmental people of a variety of socio-economic backgrounds and in non-industrialized contexts. Additionally, while research on significant life experiences sheds some light on potential predictors of nature connectedness, the SLE literature generally does not address nature connection directly but evaluates environmental values or behaviors, which are theoretically and operationally distinct from nature connectedness (Dutcher et al., 2007). Therefore, the reported effects of SLE on values and behaviors cannot be directly generalized to nature connection outcomes (Cleary et al., 2018). Furthermore, the validity of the concepts that SLE research investigates are also questionable since this research relies on extracting and analyzing simple categories, such as “nature,” from autobiographical accounts, leaving room for researcher bias as they interpret the significance of these categories for participants (Chawla, 2001). Despite these limitations, SLE research remains valuable to the study of nature connection because it identifies possible factors that may influence connectedness to nature that should be investigated further.

Ongoing, Routine Engagement with Nature. While childhood experiences in nature have been shown to be significant for many people who have an appreciation of nature, regular

and ongoing interactions with nature also have been found to contribute to adults' sense of inter-relationship with nature (Christie & Waller, 2019; Dornhoff, Sothmann, Fiebelkorn, & Menzel, 2019; Eisenhauer, 2000; Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009). In a study of thirty-six undergraduate psychology students, Hinds and Sparks (2009) found that environmental identity, or the degree to which the environment is included within people's cognitive representations of self, was predicted by frequency of environmental experiences and environment-related meaning. In order to test this association, Richardson, Cormack, McRobert, and Underhill (2016) conducted a study of the mass outdoor engagement campaign, *30 Days Wild*, in the U.K., which challenged participants to engage in thirty consecutive days of nature-engagement activities. Richardson et al. (2016) found that thirty days of engagement with nature led to sustained increases in happiness, health, connection to nature and pro-nature behaviors among participants. Analysis of pre- and post-intervention survey data demonstrated that time had a statistically significant impact on connection and conservation behavior, suggesting that repeated and intentional time spent in nature in the context of everyday life was crucial in the development of nature connection.

Noting that previous studies had considered separately the variables of past childhood experiences in nature and current contact with nature in the development of adult nature connection, Cleary, Fielding, Murray and Roiko (2018) sought to assess both variables simultaneously in their study of 1000 residents of a large metropolitan city in Australia. Of the variables they tested (including childhood experience, current nature contact duration, access to private outdoor space, natural views from home, satisfaction with nature in the city, and access to nature in the city), only duration of current nature experiences in the city and at home and childhood environmental experiences were found to be significant predictors of nature

connection. Additionally, Cleary et al.'s study offers insight into the relationship between childhood experiences and adult experiences in nature. Statistical analysis of the relationship between these variables revealed that while childhood experience is important to nature connection, it does not moderate the duration of adult nature experiences and nature connection. In other words, childhood experiences in nature are not a prerequisite for the development of nature connection later in life. This finding lends additional support to the value of fostering adult nature connection in addition to youth nature connection, which has received more attention in educational literature.

Highlighting the need for more data on how adults' relationship to nature changes over time and how this impacts their connection to nature and their environmental responsibility behaviors, Cagle (2018) examined how twelve environmental educators spent time in nature throughout their lives and the quality of those experiences. She found that aspects of the educators' relationships with nature changed with life stage, including the amount of time spent in nature and the way they engaged with the outdoors. With such a small sample the author acknowledges that these changes are not representative of all adults' experiences with a changing relationship with nature, but rather suggests the need to better understand connectedness with nature as a dynamic and ongoing process.

Additional studies have found that regular engagement with nature as part of routine life increases a sense of connection to nature (Christie & Waller, 2019; Giusti, Berthel, & Marcus, 2014; Mayer et al., 2009). In their comparative study of Ecuadorian and German teens, Dornhoff, Sothmann, Fiebelkorn and Menzel (2019) found that in both samples time spent in nature was a significant positive predictor for nature relatedness. Similarly, earlier findings by Eisenhauer (2000) suggested that interaction with the same place over time is the primary factor

in developing place attachment. Eisenhauer's study points to the need to differentiate nature as a whole, which can never be experienced in its entirety, from the specific places with which study participants actually engage. Echoing Eisenhauer, Vaske and Kobrin (2001) found that it was place identity, not connection to an ambiguous nature, that mediated the relationship between place dependence and responsible behavior, and Beery and Wolf-Watz (2014) found there to be a minimal relationship between measures of environmental connectedness and self-reports of environmental behavior. They argue that in order to understand how engagement with the natural environment impacts connectedness and behavior the generalized, non-specific concept of "nature" needs to be replaced with a more relational and specific concept of "place." These studies offer an important critique of the tendency to take a material/objective perspective of nature as a "geographically undefined agent with the inherent power to change human attitudes and behavior" (Beery & Wolf-Watz, 2014, p. 1), and urge future studies to recognize the importance of differentiating specific place from general nature

Other Emerging Influences. Studies are increasingly looking at demographic variables that might influence nature connection, such as gender (Dornhoff et al., 2019; Fabio & Rosen, 2019), nationality (Dornhoff et al., 2019), health and well-being (Cleary et al., 2018; Dean et al., 2018), and socio-economic status (Boyd et al., 2018; Cleary et al. 2018; Lin et al., 2014; Roe et al., 2016), but findings have been conflicting or inconclusive. More fruitful have been investigations into the role of spirituality on nature connection and the development of pro-environmental and pro-social behaviors (Dornhoff et al., 2019; Kamitsis & Francis, 2013; Trigwell & Francis, 2014). Puig and Echarri (2018) suggest that environmentally significant life experiences are characterized by a sense of timelessness, absorption in the moment, and simultaneous feelings of freedom and connection with the universe or a higher power that may lead to environmental

epiphanies when a person's understanding of their relationship to nature fundamentally shifts. Because of the spiritual quality of these experiences they are often overlooked in empirical studies of SLE (Hawks, 1994; Zylstra, Knight, Esler, & Le Grange, 2014), however Puig and Echarri (2018) advocate for increased attention to the role of the spiritual in individuals' experiences in nature, arguing "Spiritual intelligence may help each individual reach further into the realm of meaning to find the intrinsic and indissoluble union between human beings and nature and to discover this union's spiritual potential, which intertwines with the dimension of the natural world that scientific study reaches" (Puig & Echarri, 2018, p. 680). Diniz, Morais, and Pinheiro (2018) provide additional empirical support for this assertion. In a study of twenty-nine Brazilians who exhibited a pro-environmental commitment (PEC) researchers found that half of the participants described significant life experiences related to spirituality and religion which affected their feelings of connection with nature and their sense of responsibility to act as environmental stewards. In a study among forester managers who exhibited nature connectedness, spirituality manifested as a sense of connectedness with an ultimate source (de Pater, Scherer-Rath, & Mertens, 2008). Researchers found that this connection, rather than connection to nature alone, provided the central motivation for participants to manage forests and that their personal and professional actions were understood to be imbedded in a larger whole that transcended the individual. Interestingly, in a survey of climate change educators, Howell and Allen (2019) found that altruism was considered equal in importance to biospheric values among participants while outdoor experiences were generally not a major formative influence, leading the researchers to argue that social justice concerns grounded in altruistic morality, rather than biospheric concerns or nature connection, were more influential on this population's pro-environmental behavior and values.

Nature Connection and Environmentally Responsible Behavior

There is evidence that nature connection benefits individuals by improving wellbeing (Capaldi, Dopko, & Zelenski, 2014; Dean et al., 2018; Hartig, Mang, & Evans, 1991; Howell, Dopko, Passmore, & Buro, 2011; Nisbet, Zelenski, & Murphy, 2011;), happiness (Feral, 1998; Zelenski & Nisbet, 2014), and attention (Berman, Jonides, & Kaplan, 2008; Kaplan, 1995), but of particular importance to sustainability and environmental educators is nature connectedness' relationship to environmentally responsible behavior. Several studies have demonstrated a positive connection between nature connection and pro-environmental behaviors (Dutcher et al., 2007; Mayer & Frantz, 2004; Nisbet & Zelenski, 2013; Nisbet, Zelenski, & Murphy, 2009; Obery & Bangert, 2017; Weinstein, Przybylski, & Ryan, 2009), often through the use of quantitative survey data. Providing additional depth to these findings, Guiney and Oberhauser's (2009) mixed methods study of volunteers' motivations for participating in the Minnesota Master Naturalist program found that nearly all of their survey participants ranked nature-related reasons as their primary motivations for volunteering. The authors found that 98% of volunteers felt connected to nature to either a moderate or great extent before beginning the Master Naturalist program, suggesting that an initial connection to nature contributed to participants' desires to volunteer. Additionally, volunteers mentioned being close to nature, learning about nature, improving nature and teaching others about nature as their primary reasons for participating in the naturalist program.

The findings of this study lend additional support to the idea that nature connection is a motivating factor for ecologically responsible behavior, but there are some limitations of the study's methodology that could be improved upon in future studies. While it is compelling to learn that almost all of the volunteers felt a connection to nature, evidence of this connection is

limited to volunteers who were interviewed; the majority of participants who completed surveys and were not interviewed were asked only two questions about their connection with nature. Use of a tool such as Nisbet, Zelenski, and Murphy's (2009) Nature Relatedness Scale would better capture and evaluate nature connection among participants and would provide more evidence of volunteers' level of nature connection. Despite these limitations, there was substantial evidence from the study to indicate that there was a reciprocal relationship between volunteering in the outdoors and nature connection and that volunteering helped participants stay connected with nature, suggesting that active care for the environment, in this case, conservation volunteer work, was a way for adults to form or reform connection with nature. Existing research in this area would benefit from additional studies that offer more in-depth, qualitative data on how such engagement with the environment leads to a sense of connection with nature, and how nature connection impacts pro-environmental behavior.

Indigenous Knowledge Systems

The empirical literature on indigenous knowledge systems, like the conceptual literature, focuses on politically Indigenous peoples and does not address knowledge possessing "indigenous dynamics" (Semali & Kincheloe, 1999, p. 15) among other cultural groups. A review of the empirical literature engaging with indigenous learning and knowing revealed that researchers generally employed a critical theoretical lens when analyzing findings – only two studies (Johnson et al., 2015; Livingstone & Sawchuck, 2005) were identified that used communities of practice and ultimately those studies were concerned with informal learning of local knowledge in occupational settings, not indigenous knowledge. The remaining studies addressed one of three themes: Indigenous knowledge in culturally relevant education (Avoseh, 2013; Bagwasi, 2006; Cowan, 2005; Fean, 2012); Indigenous worldview as a framework for

understanding the learning process Bartlett, 2005; Brooks, 2019; Merriam & Ntseane, 2008); and using Indigenous knowledge systems to structure pedagogy (Bang et al., 2014; Lekoko & Modise, 2011).

Three studies (Avoseh, 2013; Bagwasi, 2006; Fean, 2012) examined the need for adult education programs in African contexts to pay attention to native language and the role it plays in learning. For instance, in study of Sudanese adult education teachers' perceptions of culture, language, and knowledge in education Fean (2012) found that Indigenous languages and knowledge is frequently marginalized within Arabic language-learning programs. He argues that increased multicultural content in education will not in itself address the imbalances of power between the representation of forms of cultures and knowledges inherent in the educational system. Rather, the empowerment of students from marginalized communities will require the authentic inclusion of Indigenous language and knowledge into the curriculum. All three studies argue making space for indigenous language and knowledge in classroom facilitates learning by making it more accessible allows learners to participate freely and enhances their self-esteem and identity. Examining indigenous knowledge in a North American context, Cowan (2005) describes an adult learning project to revitalize the traditional Inuit art of weaving grass baskets among a group of older Inuit women who still speak Indigenous first language. The qualitative case study focuses on the story of the revival of the art of grass basket-weaving to illustrate the potential for individual and community empowerment when a formal education institution validates traditional art knowledge as a relevant and meaningful form of learning. Studies that examined the value of including students' Indigenous knowledge in the learning context consistently found this had an empowering effect on students; however, in these studies it

remains unclear if the inclusion of Indigenous knowledge and ways of knowing directly impacted learning in additional ways.

In addition to examining how Indigenous worldviews might be included in culturally relevant education, three studies employed specific indigenous worldviews as frameworks for understanding the learning and teaching processes in educational programs. In an ethnographic study of Brazilian emancipatory programs based on Frierean pedagogy, Bartlett (2005) found that conflicts around the meaning of dialogue, teacher-student relations, and incorporating local Indigenous knowledge into the classroom reduced the potential for accomplishing social change. Based on her findings, she recommends that programs will be more successful if they ensure that Indigenous knowledge is recognized, respected, protected, and employed in the framing of their pedagogical activities. Brooks (2019) illustrates what this might look like in her qualitative organizational case study of the educational practices at Caminando, an emancipatory community-based organization in Mexico. The study found that the joint influences of Friere's pedagogy of the oppressed and the Zapatista indigenous world view led to an "ethico-onto-epistemological" (Barad, 2010) understanding of emancipatory learning that is relational, embodied, ethical, and emergent. As an alternative view to a traditional approach to emancipatory learning, which has been critiqued for its focus on the individual and its reliance on Enlightenment assumptions (Bowers, 2005; Esteva et al., 2005), the emancipatory learning at Caminando embeds learning and social action within "a relational ontology in which each action, as an entangled part of world, matters to the co-emergent world of which we are a part" (Brooks, 2019, p. 55).

In their study of Botswanan adults who had experienced transformation, Merriam & Ntseane (2008) examined how Indigenous culture (grounded in the Afrocentric paradigm)

shaped the process of transformative learning. They found that spirituality and the metaphysical world, community responsibilities and relationships, and gender roles were three important culturally specific factors embedded in how participants constructed the meaning of their experience and that these factors were also evident in their changed perspective. One limitation of the study was its definition of transformation was left very open, with the authors defining it as “an experience that profoundly changed their view of themselves and/or their perspectives on the world” (Merriam & Ntseane, 2008, p. 188). By using a broad definition of transformation, the authors were able to include a variety of transformative experiences; however, this also led to a lack of clarity as to what distinguishes transformative learning from other forms of learning that lead to new insight.

A common strength of these studies is their identification of a specific Indigenous knowledge system on which they ground their study and their explanation of the ontologies, epistemologies, and values that impact the findings. Other studies that referenced the inclusion of indigenous knowledge (Taylor et al., 2012) or local knowledge (Johnson et al., 2015; Livingstone & Sawchuck, 2005) in the learning process did not specifically address what this knowledge consisted of was or how it differed from other, more dominant ways of knowing or learning.

Finally, two studies illustrated how an educational program might incorporate Indigenous knowledge systems into the pedagogical structure of an educational program. Bang et al. (2014) describe community-based design research at a land-based environmental science program for urban Indigenous youth and their families in Chicago. Through the study the authors illustrate how grounding the program in Indigenous epistemologies and ontologies educators and learners were able to reconceptualize their relationships to the land “as altered, impacted, yet still, always,

Indigenous lands – whether we are in currently ceded urban territory or not” (Bang et al., 2014, p. 39). They argue that re-engaging Indigenous land-based perspectives in the design and implementation of place-based science learning balanced the settler-colonial perspectives inherent in science education, place-based education, and environmental education. For Indigenous learners, this resulted in a remembering of an Indigenous self and Indigenous world. Similarly, Lekoko & Modise (2011) suggest that African life-long learning programs would be more effective if they were grounded in an African Indigenous knowledge, rather than Western-based models of adult learning. To this end, they propose the African Indigenous Learning (AIL) framework for lifelong learning that is defined by learning-in-action (immediacy of application); interactive methods; and a conception of time that is only valued in respect of events that constitute it, as opposed to a Western conception of life-long learning that emphasizes linearity, economics, and individualism in learning.

The findings from Bang et al.’s (2014) and Lekoko and Modise’s (2011) studies could have important implications for how educational programs might incorporate the indigenous knowledge of other non-Indigenous into educational programs, particularly those hoping to cultivate a sense of connection to place and community and build an ecological consciousness, but this would require the literature to broaden its definition of indigenous knowledge to consider it among all cultural groups. As this field of literature grows, it will be important for studies to clearly define the indigenous knowledge system they are examining, explain how it differs from other forms of knowledge, and how it connects to a specific cultural system of belief, values and customs. Additionally, this literature will also need to consider knowledge systems and learning processes that possesses “indigenous dynamics” (Semali & Kincheloe, 1999, p. 15) among people who are not considered politically Indigenous but who nonetheless engage in knowing and

learning that is grounded in a specific place, is not considered official, academic knowledge, and does not fall within dominant ideological paradigms. The emergent empirical literature on rewilding attempts to address this gap.

Rewilding

The majority of empirical literature on rewilding is found in unpublished dissertations and masters theses in the fields of psychology and ecopsychology (Cashore, 2019; Castrillon, 2008; King-Miller, 2016; Sivashov, 2018; Thomas, 2020; Yori, 2015), with individual studies appearing in the fields of anthropology (Townsend, 2016), comparative religion (Pike 2018), human science (Jackson-Patton, 2012), and geography (Leiper, 2018). Two primary conceptualization of rewilding appear in this literature: rewilding as a process of immersive experiences in nature that lead to a greater sense of interrelatedness and reciprocity with the greater-than-human world (King-Miller, 2016; Thomas, 2020) and rewilding as a response to the perceived psychological conditioning and domesticating or over-civilizing forces of contemporary Western society (Castrillón, 2008; Leiper, 2018).

In a qualitative narrative study, King-Miller (2016) examines how people experience a Vision Quest in nature in an effort to better understand the process of rewilding by identifying how the relationship between human beings and their natural environment functions. Analyzing instances of ambiguity and ambivalence that arise in participants' stories of their Vision Quests, the study found seven major themes in these nature-immersion experiences: Intention, Identity, Ambiguity, Ambivalence, Intuition and Choice, Allowing, and Beauty. King-Miller suggests that these themes can provide the beginnings for an organizing theory about the human relationship with the more-than-human world, however, the formation of this theory he leaves to future research. In contrast to King-Miller's (2016) study that focuses on individuals' solitary

experiences in nature, Thomas (2016) identified five essential elements of psychological rewilding that involved both solitary and communal activities: “participation in rich, analog communities; connection to and preservation of the natural world; tapping into the ancient, organismic intelligence of one’s own body; creative outlets and self-expression; and sharing our stories without filtration” (Thomas, 2016, p. 41). Thomas’ (2016) research illustrates rewilding as an integrative process that involves a sense of Self, an awareness of body, connection to community, perspectives and feelings about the world, as well as connection to nature.

While their studies did not use the term rewilding, Cashore (2019) and Yori (2015) do take an autoethnographic approach to examine what could be considered a process of personal rewilding to a specific place. In her autoethnographic dissertation study, Cashore (2019) provides an ecopsychological exploration of her relationship with the other-than-human natural world during a one-month solo stay in the Mojave desert. She examines her own experience as “one human animal’s story about the grief and the joy of belonging deeply to ecology in an ecocidal time” (Cashor, 2019, p. v) in an effort to uncover ways people working in the mental health fields can be of service to nature. Similarly, Yori (2015) conducted an autoethnographic research study to explore how her consciousness was altered by nature. She found that when immersed in nature she experienced a shift from limited ego-consciousness to an expanded sense of oneness, which facilitated deeper understanding of the Self and a greater awareness of the interdependence of all life.

The term rewilding has come to take on anarchic or counter-cultural connotations in the literature, as well. In a clinical psychology dissertation, Castrillón (2008) conceives of rewilding in contrast to the “digitization of the psyche,” referring to “an internal and relational mirroring of our larger discursive interaction with progressively digitized culture” (Castrillón, 2008, p. iv). He

presents rewilding as one potential reaction to digitization and defines it as “an attempt to reconnect with wildness at the everyday level of practice and to approximate some sort of feral state of being” (Castrillón, 2008, p. 40) in order to change humans’ psychological conditioning and unlearn their domestication to human-constructed and technologically-focused environments. While this study does not examine rewilding directly, Castrillón does identify it as a potential therapy for “digital hysteria” (Castrillón, 2008, p. 88).

Likewise, Leiper (2018) frames the Paleo diet movement as a form of rewilding that is a reaction to “the environmental and health anxieties of life in the Anthropocene,” (Leiper, 2018, p. 28) the current geological era defined by the profound effects humanity has had on all global ecosystems. She argues that the terminology, ideology, debates, and politics of re-wilding (e.g., distributions of economic and social benefits, non-human/animal welfare, etc.) are brought to the micro-scale of the human body through the discourse and practices of individuals within the Paleo movement. Through interviews with Paleo dieters, she found that the diet and its rewilding ethos of returning to the “healthier” diet of their Paleolithic ancestors facilitated the transformation of personal health concern into ecological awareness and concern for environmental health, ultimately demonstrating the body as an entry point for engaging individuals in ecological health politics at larger scales.

My search for empirical literature addressing rewilding yielded two ethnographic studies: one a published article and the other an unpublished master’s thesis. These studies illustrate that rewilding is not only an individual psychological process but can also be interpreted as cultural expression. In an ethnographic study of the ancestral skills movement, Pike (2018) considers the ways that participants use tools in practices such as fire making and bow hunting to ritualize relationships with the more-than-human natural world. At these gatherings she found that

activities among attendees, as well as between people and plants, nonhuman animals, stone, clay, and fire, were ritualized to create a sense of shared culture. This culture consisted of communal practices and values that centered around deep knowledge about the places in which humans live, the ability to make and use tools out of rocks, plants, and nonhuman animals, and the ability to use these tools to live a simpler life “in which humans feel more at home in the wild and contribute to preserving wild places and the skills to live in them” (Pike, 2018, p. 18).

In contrast, Townsend’s (2016) ethnographic study offers a critique of the human rewilding movement in Portland as a therapeutic movement for “white settlers... who experience intense discomfort surrounding their settler identities, rewilders feel orphaned and yearn for an indigenous sense of connection and belonging—a desire emergent from an ideology that views indigenous peoples as a prelapsarian ideal from which “civilized” or “domesticated” peoples have fallen” (Townsend, 2016, p. 50). She argues that this community of rewilders reframes civilization as a form of trauma that allows them to claim status as “victims of a lost indigeneity” (Townsend, 2016, p. 50), which in turn allows them to displace the shame they feel as white settlers in the ancestral homeland of another people. In her analysis of this community, emotional displays of grief serve as performances of identity “in in which the pain of perceived indigeneity lost becomes a pleasurable path towards a perceived indigeneity regained” (Townsend, 2016, p. 50). Her critique highlights the dual shadows of colonization and cultural appropriation that stand behind any contemporary conversation of indigeneity. It also keenly identifies that grief underlies the rewilding movement - grief for the loss of biodiversity, natural landscape, and a sense of resource security; grief for past and ongoing social injustices related to and beyond ecological degradation; as well as grief for the loss of a sense of belonging to community and the

land one inhabits (Jackson- Patton, 2012; Plotkin, 2008; Macy, 1983; Macy & Brown, 2014; Macy & Johnstone, 2011; Macy et al., 1998; Turner, 1999).

Jackson-Patton's (2012) "ethnoautobiographical critique of White culture and eurocentered environmentalism" (Jackson-Patton, 2012, p.iii) offers a more nuanced view of the complicated relationship between settlers, the land they inhabit, and environmental education and activism, while still addressing the need for decolonization practices and the recognition of past and ongoing injustices against Indigenous peoples and the earth itself. In critique of American-European environmentalism and ecology, Jackson-Patton argues for the need to "(re)create and (re)new relationships with people and place—while simultaneously be(com)ing White and not White" (Jackson-Patton, 2012, p. 203) through a process of "(re)placement." This process includes honoring the grief and suffering of both survivor and perpetrator, and their descendants through re-storying and recognizing that concepts of ecology always reflect their culture of origin. Rather than viewing settler grief as an attempt to mitigate shame for past and ongoing injustices against Indigenous peoples, as Townsend (2016) does, Jackson-Patton (2012) argues that acknowledging such grief is key to healing among settlers and colonized, alike. To elucidate this point, he cites Turner (1999) who explains that disconnection and fragmentation will continue to take place in the United States, as in Aotearoa (New Zealand), because Whites "do not know how to weep for themselves or their past. The grief of settlement eludes them" (Turner, 1999, p. 29). Turner (1999) goes on to explain that "Contemporary unsettlement suggests a need to express the melancholy of separation, failure, and loss. A culture that knows no grief is deanimated, dead to its own passions and ill-fated desires, a closet to expression and creativity" (Turner, 1999, p. 38). Therefore, in order to transform settler environmentalism, Jackson-Patton (2012) recommends creating common rituals and common ground between

people and nature while halting conquest and the suppression of the storied landscape that reveals the histories of Indigenous peoples, as well as settlers. The question of how non-Indigenous communities might create common rituals with Indigenous communities while avoiding concerns of cultural appropriation is left unanswered. Also obscured by Jackson-Patton's (2016) and Townsend's (2016) focus on White settler identity in their analyses are the varied experiences of disconnection from land and culture of non-White, non-Indigenous settlers in North America. These studies highlight a gap in the literature regarding cross- and inter-cultural expressions and experiences of rewilding.

The empirical literature on rewilding, like the conceptual literature, remains nascent, and is mostly confined to unpublished dissertations and masters theses. It is therefore somewhat difficult to identify themes in this conversation, yet some themes seem to be emerging. Autoethnography appears to be the most common methodology for examining the process of rewilding (Cashore, 2019; Jackson-Patton, 2012; Pike, 2018; Yori, 2015) particularly within the fields of psychology and ecopsychology, and the remainder of the studies rely on narrative or ethnographic qualitative methods (Castrillón, 2008; King-Miller, 2016; Leiper, 2018; Thomas, 2020; Townsend, 2016). Additionally, the conversation around rewilding consists of two primary and overlapping strands: rewilding as a process of immersive experiences in nature that lead to a greater sense of interrelatedness and reciprocity with the greater-than-human world, and rewilding as a response to the perceived psychological conditioning and domesticating forces of contemporary Western society. Studies examining the process of rewilding within nature have highlighted key elements of the psychological aspects of the process (Cashore, 2019; Jackson-Patton, 2012; King-Miller, 2016; Pike, 2018; Yori, 2015), and have started to consider the cultural elements of the process as well (Pike, 2018; Thomas, 2016; Townsend, 2016). My

empirical study aims to contribute to this literature by providing further understanding of the relational process of rewilding through nature connection and the role that culture plays in that process.

Transformative Learning

Taylor (1997) conducted his first review of transformative learning empirical research in part to address a lack of critical evaluation of the theory that had “led to a redundancy in research, an insufficiency of in-depth exploration into the nature of particular components of a perspective transformation, and to a reification of transformative learning as we presently know it, whereby its basic premises about learning have become accepted practice in adult education” (Taylor, 1997, p. 35). In his analysis of the thirty-nine research studies he identified, he found that the studies confirmed that adults do experience perspective transformations at various times of their lives and that they are initiated by a disorienting dilemma, followed by a process of learning strategies that include critical reflection. However, the intricacies of the learning process are still not completely understood. His findings also suggested the need for a “more holistic and contextually grounded view of transformative learning” (Taylor, 1997, p. 51) that considers the role that affective learning, nonconscious learning, relationships, the collective unconscious, and context play in the transformative learning process. He ends by calling for more consideration of how transformative learning theory should inform practice.

In a follow-up review fifteen years later, Taylor and Snyder (2012) identified forty-nine additional empirical studies of transformative learning published between 2006 and 2010. These studies predominantly use qualitative methods, but exhibit a growing variety of methodological approaches, including the use of scales, surveys and questionnaires. The authors suggest that the time is ripe for the field to develop a statistically valid and reliable instrument to measure and

analyze transformative learning “that is not simply a reconstruction of the terminology found in the theory of transformative learning, but instead is a synthesis of both the theory and extensive qualitative data” (Taylor & Snyder, 2012, p. 47). The studies also illustrated an increase in interdisciplinary interest in transformative learning theory in both the sciences and humanities, examining transformative learning in settings beyond the formal education classroom. While these more recent studies demonstrate an increased awareness of context, the authors note that “few studies explore whether there was something unique about the participants’ background, culture, and/or positionality and their experiences in relationship to transformative learning” (Taylor & Snyder, 2012, p. 40). The authors suggest that future studies need to engage in in-depth analysis of multiple theoretical perspectives of transformative learning rather than relying on and reifying Mezirow’s orientation. Similarly, they highlight that studies continue to take for granted major assumptions associated with Mezirow’s perspective. Echoing previous research, several studies reiterated the importance of relationships in the transformative learning process, both in fostering and limiting transformation. Taylor and Snyder (2012) suggest that this line of inquiry could be pursued further with future research examining the role of social responsibility, social accountability, and social recognition in transformation.

Overview of Research from the Past Decade

Since this last review there has been a decade of research conducted on transformative learning. A cursory search of the transformative learning research literature since 2010 illustrates a steady rate of research, yielding over a hundred empirical articles, concentrated mainly in the *Journal of Transformative Education*, *Adult Education Quarterly*, *New Directions for Adult & Continuing Education*, *Environmental Education Research*, and *Journal of Sustainability Education*. The fields of adult education and higher education published the majority of

transformative learning studies in these journals, with the vast majority of these focusing on learning within the university setting. However, several studies represent the fields of medicine and public health (Coady, 2013; Greenhill et al. 2018; Hoggan, 2014; Anderson Sathe & Geisler, 2017) and social work and community development (Damianakis et al. 2019; Gilpin-Jackson, 2014; Malkki, 2012; McCusker, 2013; Morrice, 2013; Quilinan, MacPhail, Dempsey & McEvoy, 2019; Sandoval, Baumgartner & Clark, 2016; Taylor & Hill, 2016). In particular, environmental education and sustainability education have seized onto transformative learning theory, making up almost a fifth of the empirical studies identified in this search (Bainbridge & Del Negro, 2020; Barrett et al., 2017; Harmin, Barret & Hoessler, 2017; Kennedy & Boyd, 2018; Etmanski, 2018; Feriver et al., 2016; Martin & Chen, 2016; Morison, 2018; Moyer & Sinclair, 2016; O'Neil, 2018; Papania, 2019; Piasentin & Roberts, 2018; Pyati & Moore, 2013; Quinn & Sinclair, 2016; Roberts, 2011; Souza et al., 2019; Sterling & Dawson, 2018; Walshe & Tait, 2019; Walter, 2013; Westboy & Lyons, 2017; Williams, 2013).

Non-formal community education programs have received slightly more attention since Taylor and Snyder's (2012) review, with research examining the experiences of students in a Scottish literacy program (Tett, 2019), court-ordered parenting classes (Taylor & Hill, 2016), a rural women's songwriting workshop (Madsen, 2019), and a faith-based sustainability initiative in South Africa (Cox & John, 2016). Recognizing that transformative learning experiences do not only occur within structured educational settings, ten studies considered the learning that occurs through life experience, often through traumatic experiences, such as being an involuntarily childless woman (Malkki, 2012), or losing a loved one (Moon, 2011). While transformative learning is often presented as emancipatory and ultimately positive, as Gilpin-Jackson (2014) finds in her study of hope and spiritual development among African war

survivors, investigations of TL in traumatic experiences also suggests the possibility that transformation may have negative impacts on the self and identity, as Morrice (2013) finds in her study of refugees resettled in the U.K.

Heeding Taylor and Snyder's (2012) call for further consideration of the role of context in TL, there has been some growth in cross-cultural research that may shed light on the uniquely cultural elements of transformative learning in different contexts. Studies took place in China (Chang et al., 2012; Kang et al., 2019), Brazil (Closs & Antonello, 2011), South Africa (Cox & John, 2016); Kenya (Moyer & Sinclair, 2016), and the Philippines (Nitschke & Malvicini, 2013) in a mix of nonformal and formal educational contexts. While none of these studies explicitly aimed to identify transformative learning processes unique to their cultural setting, they begin to offer insights into how culture may play a role in this type of learning. For instance, in a study of Chinese school leaders, Kang et al. (2019) found the interaction between Western and Confucian beliefs about learning played a significant role in participants' reflection on the development of social and self-identities, both their own and their students.

Studies also found that the social environmental context plays a significant role in the learner's ability to change (Martin & Chen, 2016) and that having a safe and supporting context (Sohn et al., 2016) where race, ethnicity and gender are recognized, honored and affirmed (Blalock & Akheni, 2018) can facilitate transformative learning. Alternately, transformative learning within a context marked by high levels of violence, poverty and inequality may require "orienting dilemmas" (Cox & John, 2016, p. 304) rather than disorienting dilemmas to catalyze transformation (Cox & John, 2016). Noting that transformative learning within an international context differs from an experience in one's home culture, Erichsen (2011) found that transformation among international students included experiences of integration and finding

connection as well as differentiation and reinventing oneself within a new context. Hoggan (2014) reminds researchers that “the specific context in which transformative learning occurs has a profound effect on the epistemology used to negotiate that learning and growth, and in turn shapes and informs the types of change that occur” (Hoggan, 2014, p. 191). Additional studies (Woodrow & Caruana, 2017; English & Peters, 2012; Greenhill et al., 2018; Hassi & Laursen, 2015; Malkki, 2012; Morrice, 2013; Sandoval, Baumgartner & Clark, 2016; Shor, Cattaneo & Calton, 2017; Westoby & Lyons, 2017; Woodrow & Gilpin-Jackson, 2014) address the role of context in the transformative learning process, further illustrating the fluidity of transformation which cannot be captured in a single theoretical model.

Recognizing the need for multiple theoretical perspectives on transformative learning, Taylor and Snyder (2012) encouraged the field to look beyond Mezirow’s model to avoid reifying it and thus limiting development of the theory. Addressing some of the critiques of transformative learning from critical theorists, researchers paired Mezirow’s theory with frameworks based on critical theory (Bialka, Havlik, Mancini & Marano, 2019), critical race theory (Grayman-Simpson, Doucet & Burgos-Lopez, 2019), inclusive pedagogy (Glowacki-Dudka et al., 2012), culturally responsive pedagogy (Quilinan, MacPhail, Dempsey & McEvoy, 2019) and Curry-Stevens’s pedagogy for the privileged (Robinson & Levac, 2018). Expanding on the role of development in transformation, other researchers introduced additional psychological frameworks to the theory, such as the Jungian concept of individuation (Ashby, 2013; Picower, 2013) or constructive-developmental theory (Bridwell, 2013; McCusker, 2013), which addresses how the processes of meaning-making can become more complex over time. Other researchers looked beyond Mezirow’s model to alternative models of transformative learning, such as Nohl’s practice-based model (Lozada & Johnson, 2019), Kiely’s

Transformational Service-Learning Process Model (Shor, Cattaneo & Calton, 2017), and Hoggan's transformative learning typology (Kang, 2019).

Researchers continue to investigate the role of context in transformation by incorporating new frameworks that consider the ecology of the learning environment, such as environment-person interaction (Chang et al. 2012), ecopschoanalytical interpretations of Winnicott's concept of holding environment (Bainbridge & Del Negro, 2020), and indigenous epistemologies (Hathaway, 2017; Williams, 2013). Looking beyond the immediate environment, researchers are continuing to analyze transformative learning using relational ontologies such as dynamic and complex adaptive systems (Nitschke & Malvicini, 2013; Swartz & Triscari, 2011) and Barad's (2007) concept of agential realism which proposes the human and nonhuman are inseparable, are endowed with agency, and are not objects that precede interaction but emerge through intra-action (Lange, 2018; O'Neil, 2018).

Transformative Learning Towards Ecological Consciousness

In transformative learning towards an ecological consciousness, the aim is for learners to engage in critical reflection and dialogue in order to challenge and alter long-held assumptions and alter the way they engage with their earth community (Dentith & Thompson, 2018; Taylor, 2009). Such a transformation in consciousness goes beyond a change in beliefs, perceptions, and assumptions to involve an engagement in the social and material world in order to establish a new kind of relationship with the natural world (Dentith & Thompson, 2018; Newman, 2104). To better understand how ecological consciousness develops, several transformative learning research studies have focused on the roles of instrumental learning and communicative learning in this process. Mezirow (1981) identifies instrumental and communicative learning as key mechanisms that are required for transformation – when these forms of learning coincide to lead

a learner to question and evaluate premises and assumptions the possibility for a perspective change emerges (Cranton, 2006; Mezirow, 1991; Moyer, Sinclair, & Diduck, 2014)

Several studies (Dentith & Thompson, 2017; Moyer & Sinclair, 2016; Quinn & Sinclair, 2016; Sims & Sinclair, 2008) have examined the role of instrumental and communicative learning in learning or relearning traditional ecological skills. Instrumental learning is the task-oriented learning that facilitates the prediction, manipulation, and control of events and environments (Cranton & Roy, 2003; Mezirow, 1991), while communicative learning encompasses understanding others and making oneself understood, by navigating language, values, beliefs, and feelings (Cranton & Roy, 2003; Mezirow, 1991, 1997). These studies primarily focus on identifying the forms of instrumental and communicative learning involved in the contexts of the study, as well as the interactions between these modes of learning that lead to transformation. For instance, in a study of the role transformative learning plays in adopting sustainable clothing consumption, Quinn and Sinclair (2016) found that both forms of learning can occur simultaneously, sometimes triggering each other and sometimes working concurrently, “as an individual seeks to understand an occurrence in a rational and concrete way, as well as in its social context” (Quinn & Sinclair, 2016, p. 215). Instrumental learning about the textile industry and its impact on the environment allowed participants to identify problems and solutions and create plans for behavior change, while communicative learning facilitated critical reflection when participants took part in dialogue with others, encountered different views, that led them to consider and question their own previously held assumptions, beliefs and values.

Similarly, in their study of Kenyans learning sustainable ecological skills, Moyer and Sinclair (2016) found that it is often difficult to separate these modes of learning from one another. Additionally, they found that some learning outcomes, such as self-reflection about

beliefs and values that did not lead to full transformation, fell outside of these domains. This prompted the authors to propose an additional domain of learning, the “introspective” domain, that accounts for “more general self-reflection that involves knowing and understanding oneself, in terms of values, beliefs, and self-perception” (Moyer & Sinclair, 2016, p. 47) and which differs from the communicative domain in that it is focused inward, on personal beliefs about the environment and faith, and changes in self-perception and identity, rather than outwardly on the societal level. Moyer and Sinclair (2016) acknowledge that some researchers do include introspection as a part of communicative learning (Cranton, 2002; Diduck et al., 2013), but they argue that learning about and understanding others and learning about and understanding oneself are related but distinct types of learning.

While many studies of environmental or sustainability-related transformative learning examine the experiences of adult learners, the majority of the studies focus on students in formal higher education contexts (Armon & Armon, 2015; Barrett et al., 2017; Dentith & Thompson, 2017; Feriver et al., 2016; Fitzwilliams-Heck, 2019; Harmin et al., 2017; Kennedy & Boyd, 2018; Piasentin & Roberts, 2018; Pyati & Moore, 2013; Roberts, 2011; Walshe & Tait, 2019). Of the studies reviewed, only four dealt with educators. Of these four studies, two investigated the experiences of a group of educators, in one case a cohort of early childhood educators in Turkey (Feriver et al., 2016), in the other, a Critical Friends Groups of ecologically-minded educators (Morrison, 2018). In both studies the researchers created situations to encourage participants to question their frames of reference regarding sustainability. Feriver et al. (2016) investigated how those perspectives changed and what components of the learning experience facilitated that change, while Morrison (2018) considered whether the experience impacted participants’ identities and practices as educators. The two remaining studies are

autoethnographies focusing on an individual educator's process of developing a deepened sense of ecological relationship with the land they inhabit (Williams, 2013) and reconfiguring ideas of relationality (O'Neil, 2018). Combined, these four studies begin to paint a picture of how becoming aware of one's place in a greater ecological system can be a transformative learning process and they point to the ways in which this learning among educators can impact their identities, their practice, and their relationships with their students. Rather than exhausting this line of research, these studies point to a topic that is ripe for further investigation.

There is also more room in the literature for studies investigating transformative learning within nonformal adult environmental education contexts. In a search for studies addressing transformative learning in adult environmental or sustainability education yielded twenty-four studies, the majority of which focused on adult students in university contexts. Hall's (2004) review of transformative learning that took place in six international environmental action contexts provides a framework for analyzing transformative learning within environmental social movements and nonformal program, however there have only been four studies that have examined transformative learning in such contexts in the last ten years, all of which were published in the last four years (Etmanski, 2018; Fitzwilliams-Heck, 2019; Moyer & Sinclair, 2016; Souza, Wals & Jacobi, 2019; Westoby & Lyons, 2017). These studies took place in a range of international contexts, including: a food activism retreat in India; a sustainability program based in a faith-based organization in Kenya; a nonformal adult sustainability education program in Uganda; a community-based Brazilian urban sustainability program. The majority of adults do not attend university environmental education classes, consequently, much of adult environmental and sustainability education takes place outside of the formal educational context. Therefore, more research into nonformal environmental and sustainable education is warranted.

This study aims to fill the gaps Taylor and Snyder (2012) identified in the empirical literature by investigating the transformative learning that takes place in nonformal community-based education programs, the role of context and cultural elements on transformative learning as it takes place in different contexts, and by looking beyond Mezirow's model to consider multiple theoretical perspectives on transformative learning, particularly those articulated by Lange (2012); O'Sullivan (2012), and Dirkx (1997, 2001, 2012).

Theoretical Frameworks

Transformative Learning Theory

There is no unified theory of transformative learning, but instead a growing web of inter-related approaches to understanding the fundamental process of perspective change – the process of examining, questioning, and revising one's perceptions of his or her experiences (Cranton & Taylor, 2012). Mezirow (1978) first formulated his theory of transformative learning during a study of women returning to college and the workforce after an extended hiatus. He identified a nonsequential nine-phase process that the women experienced, resulting ultimately in a change in “meaning perspective”, what Mezirow defined as “a personal paradigm involving cognitive, conative, and affective dimensions” (Mezirow, 1985, p.22). For Mezirow, this transformational process constituted a unique form of meaning making: “becoming critically aware of one's own tacit assumptions and expectations and those of others and assessing their relevance for making an interpretation” (Mezirow, & Associates, 2000, p. 4). The phases of the transformative learning process outlined by Mezirow (Mezirow & Associates, 2000) have evolved over time and are not considered a definitive model. Still, they contain several elements that are often considered integral to the process: an initial *disorienting dilemma* that instigates the transformative learning process; *critical self-reflection* through which the learner becomes aware of a specific

perception, meaning, behavior, or a habit of seeing, thinking or acting; *discourse*, through which the learner encounters and assesses possible perspectives; and a decision to take *action* based on a new perspective (Baumgartner, 2012).

Assumptions of Transformative Learning Theory

Transformative learning theory is grounded in constructivist assumptions about the way knowledge is created, a humanist philosophy of the goals and values of education, and critical social theory, which aims to critique and change society rather than simply describe it (Cranton & Taylor, 2012). Eschewing a positivist view of knowledge, Mezirow was clear in his writings that he understood the process of learning as highly personal: the learner forms meaning out of experience which is then validated or challenged through interaction with others. Rather than searching for universal truths that are independent of the knower's knowing, learning is the process of attributing meaning to experience. It is because meaning of any one experience is not universally constant that transformation is possible. By becoming aware of how past experience and habits of mind influence his or her creation of meaning the learner can become aware of the assumptions that shape how they make meaning in the world to critique and transform them (Mezirow, & Associates, 2000).

Mezirow's understanding of transformation is also grounded in humanist assumptions about the inherent goodness of human nature, humans' potential for growth, our desire and capability for self-actualization, and an obligation to personal and social responsibility. These assumptions are in turn based on a modernist belief in a core self. Transformative learning is predicated on a belief that people can, and should, become their best selves, and that this best-self is one that strives to live harmoniously within society (Baumgartner, 2012).

The idea that transformative learning might be a means to attain social harmony is influenced by a third set of assumptions born of critical social theory (Cranton & Taylor, 2012). Originating in the Frankfurt School and the work of Max Horkheimer, critical social theory proposes that most societies are built on structural inequalities among their members, which reproduce themselves through all kinds of social relations so that these inequalities become normalized as a dominant ideology, or perspective. It is the aim of critical social theory to reveal the hidden assumptions behind the dominant ideology in order to call them into question and, perhaps more importantly, bring about change. Transformative learning theory suggests that people regularly and uncritically make meaning using the perspective of the dominant ideology, but through critical reflection they can recognize when the assumptions of this ideology are oppressive, become aware of alternative perspectives, and ultimately pursue new actions that lead to change (Cranton & Taylor, 2012).

Critiquing Transformative Learning Process

Subsequent theorists have critiqued many of these assumptions and expanded on Mezirow's formulation of transformative learning. One of the earliest and persistent critiques has been of Mezirow's emphasis on rationality, whereas other authors point out that perspective transformation might require higher levels of cognition that make use of the affective and intuitive dimensions of learning (Merriam, 2004; Cranton & Wright 2008; Dirkx, 1997, 2001, 2012). Taylor and Cranton (2012) acknowledge this tension between the role of rationality and emotion in transformative learning research but warn that this is ultimately a "misleading bifurcation" that is "also reflective of a modernist conception of cognition that overlooks a system's view of emotion and rationality" (Taylor & Cranton, 2012, p. 335). They suggest that this debate, predicated on rationality and emotion being two separate entities, should cease in

order to pursue more productive critiques that will further develop the theory (Taylor, 2014; Taylor & Cranton, 2012).

Another line of critique has been transformative learning theory's lack of consideration of context, gender and positionality. Johnson-Bailey (2012) argues that learners' sociocultural position is not given enough consideration, despite its immense impact on the meaning making process. Similarly, Wang and King (2008) point out that transformative learning theory is, at its heart, rooted in a Western, modernist perspective which leads to challenges in applying this theory cross-culturally without first taking account of how the theory might adapt to non-Western perspectives. For example, Ntseane (2012) contrasts Mezirow's focus on the individual with an African view of learning as a collective experience, arguing that transformative learning experiences in the southern African context is "a webbed connection and collective process that cannot be realized without a theory that is culturally sensitive" (Ntseane, 2012, p. 275). Alternatively, Sims and Sinclair (2008) uncovered in their study of active citizen participation in Costa Rica that the transformative learning taking place was not a cognizant process of critical reflection, as Mezirow describes, but more "organic" (Sims & Sinclair, 2008, p. 163), suggesting to the authors that this difference may be uniquely cultural.

Though transformative learning theory is partially grounded in social critical theory, it has been argued that it is limited by its humanistic assumptions. Clark and Wilson (1991) averred that Mezirow gave too much agency to the individual and did not account for the influence of social context on the transformative learning process by decontextualizing rationality. Additionally, by assuming the learner is a unified self, the theory disregards how individuals are multifaceted, with conflicting motivations and perspectives. Furthermore, it over-emphasizes the psychological and the individual and does not go far enough to pursue social change (Collard &

Law, 1989; Cunningham, 1992). Critiquing the linearity of Mezirow's process, Lange (2012) and Tisdell (2012) question whether transformation is always epochal in nature – instigated by a single disorienting dilemma that then leads to reevaluation of assumptions and perspective change. They suggest that transformation may sometimes be an incremental process – instigated by an accumulation of dilemmas with transformation occurring over time in a spiral-like progression. Rather than weakening the theory, Cranton and Taylor (2012) suggest that these critiques have opened up transformative learning as an area of research as theorists continue to consider how individual transformation impacts social transformation, from a systems perspective (Lange 2012; Adlhadeff-Jones 2012; Tyler & Swartz, 2012), and the interrelationship between emotion and reason (Willis 2012; Kreber, 2012).

From these critiques three strands of transformative learning theory have developed that will be particularly useful to my research: transformative learning for planetary survival (O'Sullivan, 2012), the complexity or system's view of transformative learning (Lange, 2012), and a Jungian understanding of transformative learning as soul work (Dirkx, 1997, 2001, 2012).

O'Sullivan's work in transformative learning presents a vision and philosophy for the field, rather than a theory of the learning process itself (Taylor & Cranton, 2012). Focusing on planetary survival, he conceives of transformative learning as a profound change in worldview that “involves experiencing a deep, structural shift in the basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically alters our way of being in the world [...] our understanding of ourselves and our self-locations; our relationships with other humans and with the natural world” (O'Sullivan, Morrell, & O'Connor, 2002, p.11). He proposes transformative learning as a necessary step in humanity's survival as the future of our habitat and the way it functions becomes uncertain. He proposes that learning towards ecological

consciousness takes place in three distinct but interrelated modes: education for survival – coming to an awareness and acceptance of the ecological crisis; education for critical understanding – becoming aware of the worldview behind the forces of modernism, imperialism, capitalism, and globalization, that have brought about current levels of environmental degradation; and education for integral creativity – the creation of a new planetary consciousness and cosmology that restores the relationship between human and human and human and nature (O’Sullivan, 2012).

Because my research of nature connection is closely tied to environmental sustainability and environmental education, O’Sullivan’s vision of the interrelationship between individual and community transformation toward ecological consciousness will provide an appropriate framework for my research. O’Sullivan provides a model of transformative learning that takes into account learning on the individual, the cultural, and the global level, addressing critiques that transformative learning does not adequately explain how individual transformation impacts social transformation.

Similarly, Lange (2018) encourages a revisioning of transformative learning theory that moves beyond its original modernist epistemological, cosmological and ontological roots and is instead grounded in the relational ontologies of New Science, such as relativity theory, quantum mechanics, process physics, complexity and chaos theory, enactivism, Gaia theory, deep ecology, Eastern mysticism and indigenous epistemologies. Transformative learning from this perspective reorients the locus of transformation away from the individual or society and to the relations between actors within a larger system. She discourages the view of transformative learning as linear and proposes instead a process that is chaotic with many feedback cycles and that results in both epochal and incremental transformations. Because learning occurs through

feedback from outside the self and “individuals often do not know their potential until a specific community brings it forth” (Lange, 2012, p. 205) relationship is central to Lange’s conception of transformative learning. In this study, I am interested in understanding the reciprocal relationship between a culture of nature connection and the process of learning to be connected to nature on an individual, cultural, and global level. Lange’s explicit consideration of relationship in transformative learning creates a space to consider the role of culture in the transformative learning process, as well as how learning and transformation occur and influence one another across the various levels of the global system.

Complementing Lange’s and O’Sullivan’s big picture view is Dirkx’s (1997, 2001, 2012) understanding of TL as “soul work” on the individual, psychological level that then impacts how the individual relates to the wider world. This view takes a “depth perspective” approach, emphasizing “relational, emotional, and largely unconscious issues associated with development of the individual, interpersonal interactions, and social development” (Dirkx, 2012, p. 117). Dirkx presents a vision of transformative learning that “involves making sense of these outward expressions of our inner selves” (Dirkx, 2012, p. 116). In particular, he illustrates the importance that emotions, the unconscious, and relationships play in the transformative learning process. He proposes that through the development of a conscious relationship with one’s unconscious a learner can come to recognize the powerful emotional forces that impact how they relate to and interact with the rest of the world. This deepening conscious awareness of unconscious psychic content is referred to as “soul work” (Dirkx, 2012, p. 120), which Dirkx argues is essential to transformation, especially on a societal level, for “[u]nless these powerful emotional dynamics are recognized and integrated with the broader consciousness of the collective, they may at some point overwhelm the collective’s ability to develop and sustain effective adaptations to the

demands of the broader reality” (Dirkx, 2012, p. 122). This perspective is especially relevant to a study of nature connection because fostering relationship with nature is not one-sided, it requires understanding how nature impacts the self and is inter-related with the self. Becoming aware of this inter-relationship depends on the cultivation of a “deeper sense of self-knowing” (Dirkx, 2012, p. 126) which Dirkx proposes occurs through an engagement of relationship with the Other. This Other could be unknown and unconscious aspects of the individual learner, other individuals, a greater community, the broader society, or, I would suggest, an ecological environment or nature. Dirkx suggests that “to bring about the deep and lasting change that is the aim of transformative learning is to bring about deep and lasting change in these relationships” (Dirkx 2012, p. 126). If the goal of nature connection is to transform one’s relationship with nature, Dirkx’s concept of soul work offers a lens through which to understand how that might occur within the individual.

If O’Sullivan (2012) and Lange (2012, 2018) provide lenses to understand nature connection as transformative learning throughout a system and across systems scales, and Dirkx (1997, 2001, 2012) a lens to understand transformative learning on an individual level, then Plotkin’s (2008) psychological model of “soulcentric” human development provides a bridge by offering a model for understanding how individual human development is embedded within and reciprocal with a socio-ecological environment such that the development of an individual’s ecological consciousness and the development of a culture’s ecological consciousness occur simultaneously.

Plotkin’s “Soulcentric” Model of Human Development

To understand the process of development in adulthood and how it may impact adult learning adult education researchers frequently turn to the stage or age-graded models of

development of psychologists Erik Erikson and Daniel Levinson. Erikson (1963) proposed eight stages of development that an individual experiences over a lifetime. In each stage, the individual has a developmental task, or crisis, that requires her to resolve a fundamental tension between two opposites – intimacy vs. isolation, generativity vs. stagnation, integrity vs. despair. In order to move to the next stage of development, she must overcome the conflict between these two opposing qualities, allowing her to develop a sense of competence and a healthy personality. Development does not cease when an individual reaches the final stage, as changes throughout a lifetime present opportunities to revisit conflicts from previous stages.

Levinson (1986) linked stages of adult development to specific ages, conceptualizing the process of development as a “a relatively orderly sequence of age-linked periods during the adult years” (p. 7). Key to this view is the concept of the *life structure*, “the underlying pattern or design of a person's life at a given time” (p. 6). An individual experiences alternating periods of stability and transition in their life structure. Each age or stage has its central components, or central relationships, which define the priorities and underlying structure of that stage. During periods of stability, those relationships and priorities are developed and deepened. As the individual reaches the end of an age or stage, a time of transition, those central components are questioned and reevaluated, allowing the individual to evolve to the next stage. Some critical popular culture educators have suggested that their usefulness to adult education is limited by their exclusion of the “embodied, holistic, performative, intersubjective and aesthetic aspects of learning” in favor of a more rational and linear view of the progression of adult development (Sandlin, Wright & Clark, 2015, p. 15). They suggest a more complete picture of the adult learner requires a developmental model that takes into consideration the process through which

adults form a unique way of seeing the world based on individual experiences and symbolic meanings.

In his work on adult learning and development, John Dirkx (1997, 2001, 2012) attempts to acknowledge and make a space for this process in the educational context, identifying a phenomenon he refers to as “learning through soul” (Dirkx, 1997, p. 79). Dirkx proposes that “transformative learning represents a heroic struggle to wrest consciousness and knowledge from the forces of unconsciousness and ignorance” (Dirkx, 1997, p. 79). In this struggle, he links consciousness to self-knowledge and an awareness of the multiple ways in which the learner makes meaning – not only through rational faculties, but through intuition and emotion, that is, learning through the soul. For Dirkx, soul is our ability to experience and be moved by mystery and feel connected to something greater than ourselves: “Soul beckons to a relationship between the individual and his or her broader world” (Dirkx, 1997, p. 82). Soul is manifest in intuition and emotion. Every learner brings this ability and their experiences of it to each learning situation, influencing their overall understanding of the learning task. Dirkx (1997, 2001) argues that educators can nurture soul by acknowledging, encouraging, and respecting its presence in the learning environment. Exploring ideas is never only a rational exercise but involves constructing meaning through emotions, images, and memories of past experiences that arise in the learner’s imagination during the learning task. To learn through soul is to actively involve the learner in naming and voicing these images and memories as they arise in the learning process. In doing so, the learner can become more self-aware, and reciprocally, the more self-aware the learner is, the more capable she is of acknowledging experience’s role in her process of learning. If learning through soul is integral to how a student creates meaning, how does a student become sufficiently self-aware in order to participate in this process? Current models of adult

development in adult education literature tell us very little about how learners develop an awareness of and engagement with soul.

Critiques of Developmental Models

Adult educators Sandlin, Wright, and Clark (2015), remind us of the importance of considering the role of cultural context in the processes of adult learning and development, and to beware of modernist assumptions in formulating models of adult development and learning.

They argue that

we learn who we are (or should be) with regard to race, class, gender, sexuality, and so on and whose cultures and histories are considered ‘normal’ and ‘dominant’ through the ways these cultures and identities are portrayed to us and perpetuated through public pedagogies (p. 7).

Critical learning experiences are valuable in that they encourage questioning and re-evaluation of cultural values in the process of adult identity formation, however the authors question modernist views of the educator as the necessary catalyst of rational critical awareness required to spur the student along a linear path of self-awakening toward a unitary self. Sandlin et al. (2015) argue that effective learning need not always be educator-focused, linear and rational. They remind us of the value of embracing multiple ways of knowing aside from rational inquiry, including affective experiences, intuition and emotions, and that transformative learning should include self-exploration, experimentation, and play, which at times may appear to be an unfocused and wandering process.

A Nature-based Developmental Model

Bill Plotkin’s (2008) vision of human development is similar to Erikson’s and Levinson’s models in that it depicts a healthy adult progressing through stages, accomplishing

developmental tasks in order to transition to the next stage. But he departs from traditional psychological development models in an attempt to “rewild psychology” (2013, p. 6) by grounding his psycho-therapy techniques and practices for facilitating development in the “rhythms, patterns, principles, and other-than-human encounters of greater nature” 2013, p. 8). This approach is at the core of ecopsychology, a developing field that understands humans and the human psyche as evolving

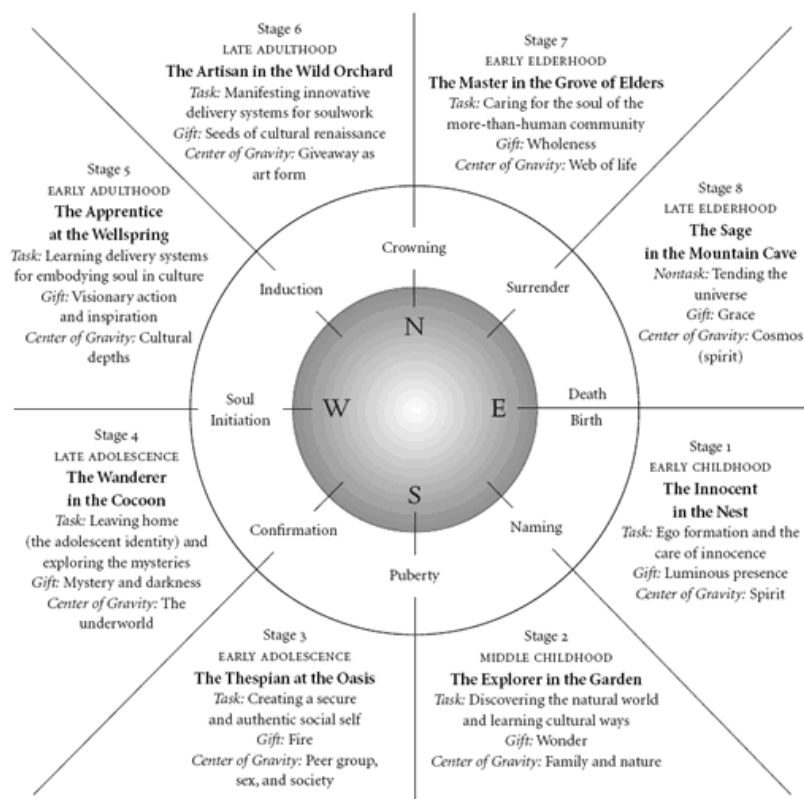
over millennia in response to the challenges and opportunities encountered within a wildly complex web of ecological relationships in a thoroughly animate world. The ways we think, feel, perceive, imagine, and act have arisen in attunement to the rhythms of the day and the turning of the seasons and in intimate relationship with myriad other life-forms and forces. (Plotkin, 2013, p. 7)

Taking an ecological view of development, Plotkin does not directly connect stages to chronological age, arguing that many adults are stymied in the adolescent stages, never progressing further. For Plotkin, the culmination of healthy human development is to become aware of and consciously embody our souls. He variously defines soul as “a person’s deep identity, ... seen in the deep structure of his psyche, the way he operates at his core” (p. 37), and as an individual’s ultimate place in the more-than-human world: “You have a unique ecological role, a singular way you can serve and nurture the web of life either directly or through your role in human society” (p. 31). Soul cannot, therefore, be understood solely in a socio-cultural context. Because each individual has an interdependent and communal relationship with everything in nature, the human soul is rather a “psycho-ecological niche” (p. 32), a self-aware node in the broader network of land and living beings. When an individual reaches maturity, or comes to fully inhabit her soul and know her ultimate socio-ecological place in her adulthood,

she is consciously aware of her interconnectedness with the greater Earth community and her actions are guided by this awareness. To this end, development must not only include psycho-cultural developmental tasks, but also nature-oriented developmental tasks. Because Plotkin understands human development as inextricably linked to the natural world he sees the stages of development as grounded in natural cycles.

Figure 1

Soulcentric Developmental Wheel (Plotkin, 2008, pg. 61).



Note: From “Nature and the Human Soul: Cultivating Wholeness and Community in a Fragmented World,” By Plotkin, B., p. 61. Copyright 2008.

Plotkin's (2008) Soulcentric Developmental Wheel consists of eight stages of human development organized around a nature-based circle corresponding to the four cardinal directions, the times of day, and the seasons (see figure 1). Throughout an individual's lifetime, healthy development would complete a full cycle, beginning in the east and proceeding clockwise (or sunwise, in the northern hemisphere), through the south, west, north, and then returning to the beginning in the east. An adult returns to the beginning of the cycle at her death: "At the end of life, we return to the same invisible place from which we emerged, spirit. We go to seed, and in doing so, seed the next cycle" (p. 54). Rather than a straight line or series of levels, this conception of human development is truly cyclical. By viewing each individual's life as part of a greater web of interconnected beings, the contributions of each life lay the groundwork for the next generation. Plotkin suggests that a truly accurate physical representation of the model would be a spiral, which would take into account the panoramic arc of successive generations in a one-way trajectory of evolution, as well as the replicating pattern of natural cycles. He attributes this model to eco-theologian Thomas Berry and his conception of "the time developmental model" (Berry 1999, p.162-163). This model aims to make sense of the progressive, nonrepeating arc of evolution in conjunction with the more familiar repeating rhythms of nature. Berry argues that with our contemporary scientific knowledge of biological evolution and cosmology, particularly the insight that the universe originated about 14 billion years ago and has been expanding ever since, we must acknowledge in any theory of development both the traditional model of ever-renewing cycles and an irreversible trajectory model. Progress along the combined circular and arcing paths of these two models describes a spiral. This differs from how spirals have been addressed elsewhere in adult education literature, specifically in Tisdell (2003), who cites cultural anthropologist Mary Catherine Bateson's

concept of “spiral learning” and transpersonal psychologist Ken Wilber’s “spiral consciousness” (as cited in Tisdell, 2003, p. 96), to illustrate the spiraling process of returning to past experiences to make new meaning informed by current experience. For Plotkin (2008), the spiral is both a metaphor and a phenomenon observable in nature which illustrates how an individual life travels a circular path through the lifecycle while simultaneously moving the human species forward on an evolutionary path.

As noted, in Plotkin’s (2008) model, each stage and its attributes, acquired through developmental tasks, are based on the qualities of nature found in the four seasons and the four times of day. Healthy development at each stage includes both a culture-oriented dimension and a nature-oriented dimension. For example, in the late adolescent stage, the culture-oriented task is to hone skills of self-reliance and relinquish the adolescent identity, while the nature-oriented task is to explore the mysteries of nature and psyche through tracking, mindfulness practices, wandering in nature, and more, discovering how nature can act as a mirror for the soul.

Traditional models of human development focus on the culture-oriented dimension of developmental tasks and stages, but Plotkin argues that by neglecting the nature-oriented dimension of each stage, individuals are prevented from developing the skills needed for fully knowing and embodying their own souls, which is their place in the interconnected web of all beings. Thus, they are prevented from developing a transpersonal level of consciousness and cultivating wisdom.

Accounting for Wisdom in Developmental Models

In Plotkin’s (2008) model of human development, maturity is marked by a transition from an individual’s focus on herself, the process of discovering and embodying her soul or ultimate place, to a focus on using her unique abilities to serve her social and ecological

community. However, the fullness of maturity is only reached in elderhood when “we relinquish our conscious attachment to the embodiment of our individual souls – the definition of adulthood – and turn toward the tending of a more expansive domain, the soul of the more-than-human community” (p. 59). In these later stages of adult development there is a clear connection to cognitive development of wisdom in adulthood. Wilber’s (1986, 1990) and Washburn’s (2000) transpersonal models of cognitive development have been cited in adult education literature to understand experiences of self that extend beyond the level of personal or individual (e.g., Tisdell, 2003). These models characterize elderhood as the attainment of a transpersonal level of consciousness, a deep awakening and transformation into a new form of consciousness that dissolves boundaries of time, space and self. Washburn (2000) in particular connects this deep awakening to the ability to acquire wisdom.

Psychologists cited in adult education literature have defined wisdom as the ability to think in a dialectic way (Kramer and Baccelar, 1994) and a higher awareness that allows one to acknowledge “many possible paradigms, worldviews, reality tunnels and epistemologies, each of which is a plausible explanation of the way the world really is” (Becvar, 2005, p. 29). Perhaps different from other forms of knowledge, wisdom can guide an individual through confounding experiences to accept inherent contradictions and alternative truths by cultivating an appreciation of paradox and a realization of the interconnectedness between all living systems (Bassett, 2005; Plotkin, 2013; Tisdell, 2011).

Plotkin (2008) argues that because industrial growth society has neglected, and even suppressed the nature dimension of human development, the result has been “an immature citizenry unable to imagine a life beyond consumerism and soul-suppressing jobs” (p. 6), thus limiting individuals’ potential to develop a transpersonal level of consciousness and wisdom. If

the purpose of education is to assist students in social, emotional, spiritual and intellectual development as well as foster a sense of stewardship and reciprocity for both the human and nonhuman worlds, then Plotkin's model would be a useful tool to better understand how learners become fully mature, self-actualized, and wise adults.

Rewilding

Inherent in the idea that each individual inhabits a "psycho-ecological niche" (Plotkin, 2008) is an understanding that all humans are terrestrially natural and native to place, and it is by cultivating and understanding this indigeneity that an individual can come fully into their unique socio-ecological role. Plotkin (2013) outlines three interconnected ways in which someone can be indigenous: terrestrially – as native to the Earth; ecologically – belonging to a particular ecosystem or geographical place; and culturally – being a member of a particular people or tribe. The reality for many, if not most contemporary humans is that they no longer live in their ancestral lands as international migration and movement from rural to urban areas increases each year (International Organization for Migration [IOM], 2019; United Nations, 2018). A cost of migration is that many of the cultural traditions and knowledges tied to those ecological homelands are lost or lose meaning along the way. As a result of these major population movements most people today are no longer culturally or ecologically indigenous.

But this does not mean that once lost indigeneity cannot be regained, as Plotkin (2013) explains, "Our being native to Earth is, after all, foundational to our ever having been culturally or ecologically native" (Plotkin, 2013, p. 55). He argues that to rebuild a cultural and ecological indigenous relationship to place, individuals and communities must live according to place, as their ancestors once did, so that "human culture and environment [are] interdependent: mutually shaping and mutually enhancing" (Plotkin, 2013, p. 55). A movement to accomplish this on both

personal and societal scales would constitute what O’Sullivan (2012) refers to as “education for integral creativity” (O’Sullivan, 2012, p. 166) – the creation of a new planetary consciousness and cosmology that restores the relationship between human and human and human and nature.

As Warren (2007) reminds us, the designations of “native” and “alien” are fluid and impermanent, and can vary depending on the temporal and spatial boundaries of the inquiry. Rewilding, nature connection, and the call for transformative learning towards ecological consciousness propose setting those temporal and geographical boundaries to the here and now in order to consider how humans might become indigenous to the places they *now* inhabit, regardless of where their ancestors came from. Doing so will require getting to know those places deeply by connecting with nature on cognitive, affective, embodied, and possibly spiritual levels in order to build relationships of reciprocity with the greater-than-human world and a culture that fosters a relational worldview that views the universe as “a communion of subjects, not a collection of objects” (Swimme & Berry, 1992, p. 243).

Summary and Conclusion

This study aims to fill several gaps in the interconnecting literature on transformative learning, nature connection, and indigenous knowledge systems. Taylor and Snyder (2012) identified gaps in the empirical adult education literature which this study hopes to address: transformative learning in nonformal community-based education programs, the role of context and cultural elements on transformative learning, and the use of theoretical perspectives on transformative learning beyond that of Mezirow (2000), particularly those addressing transformation towards ecological consciousness. Furthermore, this study will expand the existing research on how adults learn to be connected to nature by adding to the in-depth, qualitative data on how such engagement with the environment leads to a sense of connection

with nature, and how nature connection impacts pro-environmental behavior. Finally, this study will contribute to the growing literature on the role of learning in the process of rewilding.

To these ends, the purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners' cultural and ecological indigeneity and its impact on their practice as educators. Therefore, this research will seek answers to the following research questions:

1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?
2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?
3. Where does an eccocentric worldview appear in these processes?

Chapter 3

Research Methodology

The purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners' cultural and ecological indigeneity and their practice as educators. Using the lenses of transformative learning theory, Plotkin's "Soulcentric" model of psychological development, and rewilding, I analyzed ethnographic interviews with seven adult educators and nature connection learners who participated in Art of Mentoring camps – weeklong nonformal intergenerational nature connection programs held in the U.K. in 2017 and 2019 – in order to pursue the following research questions:

1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?
2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?
3. Where does an eccocentric worldview appear in these processes?

A Primarily Qualitative Study

This is a predominantly a qualitative study which is strongly informed by ethnography, however, because I will also use as an elicitation device a validated 21-item survey tool exploring participants' nature connection this study also contains a small quantitative component. In this sense, the study could be conceived as a mixed methods study, but usually in such studies the two data sets are converged. This is not the purpose of the quantitative instrument in this study – rather, the instrument will be solely used as a discussion point in the interviews. This chapter will provide a rationale for the study's design and methodology as primarily qualitative. Following this, I will discuss my own background related to the research

process and how this study will meet the standards of the Pennsylvania State University Office of Research Protections. Next will be an overview of the participant selection process, data collection and analysis methods, and dependability strategies that will be used in the study. Finally, the chapter will end with a chapter summary.

Overview of Qualitative Research

Qualitative research is the systematic investigation of how people interpret and attribute meaning to their experiences, and how they construct their understanding of the world they inhabit and their place in it. Grounded in an epistemological view that views knowledge and reality as constructed through individual experience, qualitative research is open to pluralistic and changing meanings. In this research design, the researcher is the primary instrument of data collection and analysis, and theories and interpretations are constructed through an inductive, constant comparative process based on the data collected, rather than researchers deductively testing hypotheses and theories. Unlike quantitative research, the design of qualitative research is flexible and evolving, based on insights from the ongoing data collection process, and makes use of small, purposeful samples to collect data through interviews, observations and documents associated with the topic of the study (Merriam & Tisdell, 2016). This study will be strongly informed by ethnography and autoethnography. The following sections will provide an overview of the specific qualitative methods of ethnography and autoethnography that will be applied in this study.

Strongly Informed by Ethnography

A hallmark of traditional ethnography relies on prolonged engagement in the field in order to ensure data saturation, ranging from several months to several years (Hammersley, 2007; Hammersley and Atkinson, 2007; Madison, 2012). Such a prolonged immersion in a single

case setting is not possible for this study because of the governmental travel and gathering restrictions brought on by the COVID19 pandemic. Because of these limitations, I propose to structure this study as a basic qualitative study that makes use of ethnographic techniques (Parker-Jenkins, 2018) to create a “micro-ethnography” that examines “the ways that a cultural ethos is reflected in microcosm in selected aspects of everyday life... rather than attempting to portray a whole cultural system” (Wolcott, 1990, p. 64). Ethnographic techniques allow me to investigate how participants learn, understand, and use nature connection within the context of a specific cultural community that has shaped the meaning and practice of nature connection for the participants. The inclusion of an ethnographic lens also allows me to consider how participation in a culture of nature connection impacts the ways participants understand and engage in sustainability and community building efforts in their local communities.

Nature connection is a broad concept that can be interpreted in numerous ways. In this study, I am specifically interested in the concept and practice of nature connection as it is formulated and taught within the cultural community of an environmental adult education program, Art of Mentoring. The COVID-19 pandemic and its associated lock-downs made it impossible to collect data for this study at the site of the educational program through participant observation, a necessary method for a traditional ethnography. I therefore needed to adapt this study to be feasible in a new, “socially-distanced” world. The compromise was to conduct the qualitative portion of this mixed methods study as a basic qualitative study that made use of ethnographic techniques to understand how members of this nature connection community of learners “organize their lives to manage everyday routines, communicate what they know and what they expect of others, and cope with forces within and beyond their control” (Wolcott, 1990, p. 51). A basic qualitative study aims to understand how meaning is constructed by

participants around a particular phenomenon through the analysis of interviews, observations, or documents (Merriam & Tisdell, 2016). The use of ethnographic interviews added an additional dimension to these basic qualitative research techniques, allowing me to investigate not only participants' experiences with nature connection but the impact a nature connection community or culture has had on those experiences and participants' relationships to their home communities. In addition to ethnographic interviews, I also include an autoethnographic account of my own experience of learning nature connection to provide additional qualitative data on the experience of learning nature connection.

Ethnography

As it is traditionally conceived, ethnography is a form of qualitative data collection in which the researcher engages in direct, immersive experience with the research setting and participants over a sustained period of time in order to understand socio-cultural phenomena from the perspective of the people being studied. Unlike positivist researchers, ethnographers aim to conduct their research in a naturalistic setting with the hope of gaining direct access to the organic and spontaneous human experiences of a specific population. The ultimate aim of this method is to spend enough time in the setting and interact long enough with the population to compile sufficient data that it is possible to make an account of the phenomenon from an *emic*, or insider's perspective. As indicated in the introduction to chapter one, I have been learning nature connection and engaged in a community of nature connection practitioners since 2017, which has allowed me to bring an emic perspective to this research.

Parker-Jenkins (2018) suggests that ethnographic research might be better defined by the techniques it uses, rather than its methods of gathering data, which might be used in other forms of research. She posits the features that make research ethnographic are observation and

interviewing in the field, compiling and interpreting a description of a group's cultural values, identity, behaviors and beliefs, and maintaining a practice of reflexivity that both examines the researcher's positioning to the research subject and ensures ethical conduct in the field as well as the dissemination of the research product.

These traditional ethnographic practices are based on assumptions that direct observation of the phenomenon by the researcher will produce the most accurate data and interpretation, and that observation in naturally occurring settings will produce more accurate information than when elicited in situations constructed by the researcher, such as a focus group. While ethnographers do conduct interviews to gather data, traditional ethnographic research considers accounts collected through participant observation as possibly even more valid "because accounts are context-sensitive and tend to be related to features of the lives of the participants of which the researcher would be unaware without participant observation" (Hammersley, 2018, p. 8). Successful ethnographic analysis is therefore dependent on the researcher's personal experience in the field.

Ethnography's assumptions about effective data collection are grounded in the belief that it is possible to uncover the truth of a matter through empirical observation. Constructivist critics of this view argue that direct observation may only be an account of the researcher's perceptions and that, similarly, participant accounts cannot produce the truth of any unified, objective reality, but are individual constructions that are equally valid, in spite of any contradictions among them. Additionally, such critiques point out that the value placed on observations in natural settings is based on a belief that a researcher's presence in the setting does not alter the behavior of the participants. It is just as likely that a researcher's presence will alter the practice of the participants that the researcher will be unaware of. From this perspective, ethnographic research

should be cautious of making claims of truth based on observational data, but instead focus on how informants construct meaning about the practices being observed (Hammersley & Atkinson, 2007).

Autoethnography

Autoethnography is the combination of autobiography and ethnography, whereby the culture of the researcher's own group is contextualized (Ellis, 2004; Hollman Jones, 2005; Van Maanen, 1988). Autoethnography differs from autobiography by using the individual as a lens to understand a contextualizing social, ethnic, or cultural group ethnographically, making culture, rather than the individual, its ultimate subject (Ellis, Alan, & Bochner, 2011; Reed-Danahay, 1997). Unlike confessional ethnography (Van Maanen, 1988) or self-ethnographic texts, autoethnography does not assume the self as "the main form of reality" (Terry, 2006, p.211) but engages in "critical reflexivity" (Alexander, 2006) by "implicating and complicating how we [researchers] are always and already complicit in the scholarly productions of our labor, and the effects of our positions and positionalities with the diverse communities in which we circulate" (pp. xviii-xix). In this way, autoethnography makes explicit the researcher's role in the research by placing an increased emphasis on self-disclosure and self-display. This can be done by presenting the researcher's life history or a relevant era of that history, incorporating personal narrative into the research, and by chronicling their fieldwork experiences in a way that foregrounds the researcher as a person enmeshed in and experiencing the research setting (Reed-Danahay, 2001).

Historically, ethnographic research that included "too much" of the researcher's personal experience has been criticized as self-indulgent, trivial, and not sufficiently objective to be considered scientific (Bruner, 1993; Brandes, 1992; Pratt, 1986). More recently,

autoethnographic writing has become more accepted as valid qualitative research (Reed-Danahay, 2001), however, Murphy and Dingwall (2001) point out that auto-ethnography continues to raise unique ethical questions in the field. For instance, while it may seem that any issues of autonomy and informed consent in research seem to be resolved because the researcher's subject is herself, there is still a question of the author's authority to represent the actions of and interactions with others, and what role consent should play in autoethnographic research.

Yet, there are several advantages to focusing attention on the emotions and experiences of the researcher herself. Goffman (1989) points out that the researcher's emotional responses to events being observed in the field may very well mirror those that naturally occur in the setting, lending insight into others' experiences. And even if the researcher's experiences and reflections do not match others', they may still provide useful analytical leads. Additionally, Ellis (1991) argues that the rich accounts autoethnography offers of the complex processes of experience convey more data than pure descriptions of behaviors available through observation alone.

Autoethnography has been used in the field of adult education to understand how social class shaped the life of one researcher and learner (Wright, 2008); the culture and embodied learning of bicycle racers (Crothers, 2018); and the discourse sportswomen use when discussing their athletic careers, bodies, and lives (Greenawalt, 2019). To gain insights into the transformative learning process, Tisdell (2017) uses autoethnography to theorize transformative pilgrimage learning as she retraces her steps along the Camino de Santiago de Compostela. Educators Williams (2013) and O'Neil (2018) use autoethnography to examine the process of developing a deepened sense of ecological relationship with the land they inhabit and reconfiguring ideas of relationality, painting a picture of how becoming aware of one's place in a

greater ecological system can be a transformative learning process. With this study, I intend to contribute to this methodological tradition by adding my own autoethnographic account of learning nature connection and its transformative learning dimensions, but this dissertation will also analyze the experiences of seven other nature connection learners to capture greater variety and depth of such learning.

Small Mixed Methods Component

Mixed method research is the integration of both qualitative and quantitative research methods in order to capture a more complete understanding of a phenomenon than either method could accomplish on its own. Because this methodology draws on both qualitative and quantitative research paradigms, it makes use of both pre-determined and emerging methods, both open and closed-ended research questions, and multiple forms of data (Creswell & Creswell, 2018). The collection and analysis of qualitative and quantitative data in a mixed methods study may occur simultaneously, in the case of a *convergent design*; using an *explanatory sequential design*, in which quantitative data is collected first, followed by qualitative data with the aim of explaining the quantitative data; or according to an *exploratory design*, when qualitative data are collected first which then forms the basis of a survey instrument that can gather targeted data from a larger sample. It is also possible that, while both qualitative and quantitative methods are employed in a study, the qualitative data retains priority, in which case the study would make use of an embedded design, with the quantitative data embedded within the larger scheme of qualitative data and analysis (Merriam & Tisdell, 2016).

While some methodological theorists argue that quantitative and qualitative research adhere to separate and distinct paradigms (positivist and constructivist, respectively), researchers who hold a pragmatist philosophy reject the dualism of the constructivism versus positivism

discussion, are not committed to any one system of philosophy, and do not view the world as an absolute unity – “truth is what works at the time” (Creswell, 2009, p. 11). Pragmatist researchers are therefore free to choose methods and techniques that are appropriate to the research task at hand. Because they recognize the existence of both a world external to the mind and one created through individual experience they see value in both qualitative and quantitative data and analysis, so that a mixed method study would be a practical approach to assessing both of these aspects of reality. Ultimately, the research question, rather than epistemology, is of utmost concern in research (Tashakkori & Teddlie, 2003). Such an approach might take a *dialectical stance*, which assumes all paradigms contribute to the research endeavor through a dialectical process and that the use of different paradigms to study a certain phenomenon contributes to greater, more comprehensive understanding (Tashakkori & Teddlie, 2003). Ultimately, mixed method researchers choose to combine qualitative and quantitative methods in order to collect the best data to address their research questions.

For this study, qualitative data was collected using ethnographic techniques. In her typology of multimethod designs, Morse (2003) identifies eight different combinations of qualitative and quantitative methods, four with an inductive theoretical drive and four with a deductive theoretical drive. In her notation, the primacy of the quantitative or qualitative method in the design is notated by capitalizing the theoretically dominant method (e.g. QUAL or QUANT) while a plus sign (+) signifies that the two methods are used simultaneously and an arrow sign (>) indicates that the methods are used sequentially. While Morse’s (2003) notation is intended to describe multimethod research programs that consist of several studies rather than a single mixed method study, her typology is still useful in clarifying the roles that qualitative and quantitative methods will play in my study. According to Morse’s (2003) typology, this study

used a QUAL + quan (inductive) design, simultaneously privileging an inductive theoretical perspective, guided by the qualitative research design, while quantitatively measuring a portion of the research phenomenon in order to enhance the qualitative description.

This study has a primarily qualitative design strongly informed by ethnography that simultaneously uses Nisbet et al.'s (2009) Nature Relatedness survey, a quantitative tool, as an interview elicitation device. Qualitative data was collected through ethnographic interviews, as well as autoethnographic data from my personal experiences, observations, and notes of learning nature connection. The Nature Relatedness survey was used as a self-assessment tool to identify individually unique patterns of nature connection (manifested affectively, cognitively, and physically) and supported understanding of participants' ecocentric worldview and eco-action orientation. In this sense, the study has a small mixed methods component.

Background of Researcher

I am a non-Indigenous, mixed-race woman who was raised in a military family that moved frequently in my younger life. As an adult, I have continued to move frequently, living in different regions of the Pacific Northwest and Middle Atlantic United States. As a member of several diasporas (African-American, Scotts-Irish, and Swiss-German) who found themselves in the United States, some knowledge of my ancestral cultures has been passed down to me as family tradition. But much of my heritage has been obscured by time, distance, and the cultural trauma of forced or chosen emigration. This legacy has deeply impacted my relationship to place and the natural environment which I inhabit. It has also contributed to my interest in studying relationships to place and the process of cultivating a sense of belonging.

Mine is not a unique experience in the U.S., a land of immigrants as well as many Indigenous peoples who have been forced from their native environments. In fact, this

experience has become increasingly common globally, as more of the human population becomes mobile and emigrates into urban environments (United Nations, 2018). However, I recognize that not everyone shares my valuation of heritage, nor does everyone share the assumption that having a relationship with one's cultural heritage and ancestral land(s) is important for personal development and wellbeing. These are beliefs that are born out of my personal experience which will undoubtedly inflect my research design, data collection, and analysis. Therefore, it was crucial that I engaged in reflexivity (Madison, 2012) throughout my research to recognize the distinction between my own perspective and the perspectives of my research participants, as well as the position of authority I have as a researcher and the accompanying moral responsibility to represent and interpret accurately.

Equally important was maintaining an awareness of my position as a participant-researcher in the community that I was studying. As a participant in this community of learners I brought to this research my own understandings, interpretations, and applications born out of my personal experience with nature connection. This familiarity had the potential to be a limitation if I relied on my experiences as a template for understanding the experiences of others to the exclusion of new and different interpretations. One way I mitigated this bias was by reflecting on my own experience with learning nature connection, identifying themes that may bias my interpretations, and then regularly reviewing my analysis of interview data for signs of researcher bias (Merriam & Tisdell, 2016).

Yet being a member of the community benefited the research project, as well. My participation in the nature connection community and long-term maintenance of relationships with other community members allowed me to develop a level of rapport with participants which helped them share thoughts and experiences that may seem too difficult to express otherwise. In

particular, participants of Art of Mentoring camps and other 8 Shields programs share a common argot and group customs that may be unfamiliar, or even off-putting to outsiders. Participants were comfortable discussing these more esoteric aspects of their experiences with someone who is a member of the same community. Additionally, spirituality can play a role in people's nature connection experiences but might be considered too personal a topic to discuss with a stranger. Because a rapport was already established, participants were comfortable sharing the spiritual aspects of their experiences.

Finally, because I was working with international participants, many of whom do not speak English as a first language and who have cultural experiences that differ from my own, it was inevitable that my frame of reference and interpretation as a researcher differs at times from theirs. This can increase the likelihood of misunderstanding and misinterpretation. Consequently, it was all the more essential to include member checks throughout data analysis, soliciting feedback from participants throughout the analysis process, to ensure that I captured as accurately as possible participants' experiences.

Research Ethics and IRB Compliance

To ensure that no unnecessary risks were taken in the course of data collection that may jeopardize the well-being and confidentiality of the participants, this study was conducted under the guidance of the Pennsylvania State University Office of Research Protections and obtained approval from the Institutional Review Board (IRB) before collecting any data. In accordance with IRB requirements, verbal consent was obtained from all participants prior to being interviewed. As part of the consent process, participants were informed about the nature of the study, that their interview data would be audio-recorded and transcribed, and that upon transcription all interview data and survey data they provide will be stripped of identifiable

information and coded with a pseudonym. All participants were informed that their participation was voluntary and that they may choose not to answer any questions they feel uncomfortable discussing. Upon giving consent, participants reserved the right to leave the study at any time and have their data removed from the study.

Participant Selection

When selecting participants for qualitative research a primary consideration is the identification of information-rich cases that can offer insights into the research problem. Unlike quantitative research, which typically depends on large, randomly selected samples in order to maintain validity and generalizability, qualitative research engages in *purposeful sampling* (Patton, 2015). In purposeful sampling, “you decide the purpose you want informants (or communities) to serve, and you go out to find some” (Bernard, 2000, p. 176). *Criterion sampling* will be used to identify the participants based on predetermined criteria that are crucial to the purpose of the study (LeCompte & Schensul, 2010).

The purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their practice as educators. In order to identify information-rich cases that informed this research I used the following criteria in selecting the research sample. The selected community is an educational program that a) intentionally educates adult learners; b) provides educational content about nature connection practices; c) fosters a sense of community among learners and educators; d) promotes environmental and social sustainability and resilience through nature awareness and community building. From within this community, selected participants were: a) adult learners over the age of twenty-one; b) identified as educators in either a formal context (such as a school or nonprofit with an educational mission) or informal context (such as

community organizer or community leader); c) identified as having some form of nature connection practice; d) identified nature connection as having had an impact on their practice as an educator; e) were proficient in English; f) had participated in at least one Art of Mentoring program.

Participants who met these criteria were recruited from among the personal contacts I have developed as a member of this community. Participants were formally invited to participate in the study through an emailed invitation. The sample size in qualitative research should be determined by the number of participants required to achieve data *saturation*, or a redundancy in responses and observations (Lincoln & Guba, 1985). Determining saturation relies on concurrently analyzing data as it is collected in order to identify when data no longer offers new insights (Merriam & Tisdell, 2016). For this study, saturation was reached after interviews with seven participants. The next section will provide an overview of the qualitative data collection and analysis methods that will be used in this study to determine saturation.

Data Collection

In ethnographic research, data is gathered through a process referred to as *field work*, methods and processes in which the researcher is both the instrument of data collection and analysis. Often field work emphasizes participant observation, formal and informal interviews, and the analysis of artifacts and documents. These documents usually include the researcher's fields notes – daily accounts that include descriptions of the site and community along with more personal insights, feelings, and impressions of the researcher's experience as researcher and possibly as community member (Schensul et al., 2012).

For this research study, I originally intended to engage in participant observation at Art of Mentoring programs conducted in the U.K. and the United States to gather ethnographic data

about the learning community within which participants learn nature connection practices. However, the restrictions of the COVID-19 pandemic made on-site fieldwork impossible. In the revised methodology of this study, qualitative data were collected through ethnographic interviews with participants conducted through Zoom conferencing software, while the quantitative data – individual results of Nisbet et al.'s (2009) Nature Relatedness survey tool – was collected through Microsoft Forms. Additionally, as a past participant in Art of Mentoring programs in 2017 and 2019, I also used my personal experience, presented as an autoethnography, to provide additional qualitative data on the process of learning nature connection, and how nature connection practices and participating in a culture of nature connection impact a learner's cultural and ecological indigeneity and her work as an educator.

Collecting Autoethnographic Data

Autoethnographic data is collected using the tools of autobiography and ethnography. In autobiography, an author uses hindsight to write about past experiences that were not initially engaged in for the purpose of research, and may interview others and consult journals, photographs, recordings and other documentation of the experience to assist in recall (Delany, 2004; Freeman, 2004; Herrmann, 2005). Autobiography often focuses on moments of epiphany – remembered experiences that are perceived to have impacted the author's life in a significant way, often resulting in a change in perspective (Bochner & Ellis, 1992; Couser, 1997; Denzin, 1989; Zaner, 2004). Ethnography, in turn, aims to understand a culture's relational practices, beliefs, and values, and engages in participant observation, interviews, and textual and artifact analysis to do so (Berry, 2005; Ellis, 1986; Geertz, 1973; Goodall, 2006; Lindquist, 2002; Makagon, 2004; Nicholas, 2004).

When researchers conduct an autoethnographic study, they combine these two writing forms to “retrospectively and selectively write about epiphanies that stem from, or are made possible by, being part of a culture and/or by possessing a particular cultural identity” (Ellis, Adams & Bochner, 2011, para. 9). These reflections do not speak for themselves – just as ethnographic data must be analyzed to have meaning in an ethnography, autoethnography must aim to make elements of a culture familiar for insiders and outsiders in order to transform it from story into autoethnographic data (Ellis, Adams & Bochner, 2011).

To facilitate autoethnographic reflection for this study, I used my journals, photos, documents, and other artifacts from my time attending two Art of Mentoring nature connection camps in 2017 and 2019, as well as my journals and other artifacts related to my ongoing experience with nature connection since that time. Additionally, throughout the research process I kept a journal to document my observations and reactions as I re-engaged with and re-interpreted my story while collecting and analyzing participants’ ethnographic interviews.

Collecting Ethnographic Interview Data

The purpose of this study was to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their practice as educators. Therefore, it was not only important to collect data about the context of that learning but also data about individuals’ lived experience and perceptions of their nature connection practices. Patton (2015) explains the value of interviewing in qualitative research is that it can “allow us to enter into the other person’s perspective” (p. 426). Unlike a survey or highly structured interview, tools limited to gathering data about topics pre-determined by the researcher, semi-structured interviews collect data about the research topic while still allowing

new insights into the topic to emerge (Merriam & Tisdell, 2016). Therefore, I conducted semi-structured individual interviews with seven participants who met the selection criteria.

In order to understand the role of culture in the nature connection learning process, I approached the interviews ethnographically. The goal of an ethnographic interview is to describe a community's practices, ideologies, and co-constructed knowledge – the jointly created communicative practices within a community. In order to accomplish this, a researcher must gather a combination of perspectives from insiders through interviews that take place within a context of ongoing relationships, after taking considerable time getting to know community members and participating in their practices (Atkinson et al., 2007; Clair, 2003; Munz, 2017). Because these interviews took place outside of the “natural” context of the learning program, they cannot be considered truly ethnographic. However, because they take place within a broader context of ongoing relationships and participation within an international community of nature connection practitioners the interviews can still be considered to be grounded in a shared cultural context.

Additionally, individual results of Nisbet et al.'s (2009) Nature Relatedness survey tool also provided a basis for discussion in the semi-structured interviews. The use of this tool will be further discussed in the next section of this chapter. Interviews were conducted using an online video-conferencing program. All interviews were audio-recorded, with the permission of the participant. In addition to recording each interview, I also collected my own interview notes documenting my reflections on each interview.

Collecting Data with a Quantitative Tool

While this is primarily a qualitative basic interpretive study informed by ethnography, I also used a quantitative tool in my data collection. As a part of the ethnographic interview

process I used Nisbet et al.'s (2009) Nature Relatedness survey to collect quantitative data on the presence and quality of nature connection among participants. The Nature Relatedness survey was distributed via Microsoft Forms to all participants prior to their semi-structured interviews. This survey was used as a self-assessment tool that was discussed as part of the semi-structured interview with the participants. Findings from this survey identified individually unique patterns of nature connection (affective, cognitive, and physical) and supported understanding of participants' ecocentric worldview and eco-action orientation.

Nature Relatedness Survey

Nisbet et al. (2009) constructed the Nature-Relatedness scale in an attempt to quantify nature connection by assessing the affective, cognitive, and experiential aspects of an individual's connection to nature. The scale takes into account the significance of 1) environmental values and behaviors (*caring* and *commitment*) and 2) ecological identity, or a view of the self that includes the greater ecosystem that one inhabits (*connectedness*), in the experience of connectedness to nature. Nisbet et al. (2009) describe *nature relatedness* (NR) as the degree to which one connects to the natural world:

Nature relatedness is not unlike the deep ecology concept of an ecological self, the notion of a self-construal that includes the natural world. The concept of NR encompasses one's appreciation for and understanding of our interconnectedness with all other living things on the earth. It is distinct from environmentalism in that it includes much more than activism. It is not simply a love of nature or enjoyment of only the superficially pleasing facets of nature, such as sunsets and snowflakes. It is also an understanding of the importance of all aspects of nature,

even those that are not aesthetically appealing to humans (e.g., spiders and snakes) (p. 718).

Using this construct, the authors developed the Nature Relatedness 21-question survey using a Likert-type scale to assess the affective, cognitive and physical relationship individuals have with the natural world and to determine empirically if nature connected people (those who score highly in nature relatedness) are in fact more likely to engage in environmentally responsible behavior (ERB). After testing the NR tool's validity and finding it a better predictor of self-reported environmental behaviors than other environmental scales, the authors used the tool to test whether people who were identified as nature connected by the tool were more likely to engage in environmental responsible behaviors (ERB). Results of the study showed that those individuals high in nature relatedness reported more environmental concern and endorsement of pro-environmental attitudes, and more self-reported environmental behavior. In addition, high levels of NR predicted an ecological perspective in participants, as well as strong views about the seriousness of ecological problems and human treatment of the environment.

Data Analysis

In analyzing the data collected through the ethnographic interviews, I used the theoretical frameworks of transformative learning theory, particularly as theorized by O'Sullivan (2012), Lange (2012; 2018), and Dirkx (1997, 2001, 2012), Plotkin's (2009) "Soulcentric" model of psychological development, and the concept of rewilding to understand what role culture plays in the learning of nature connection practices, and the maintenance and evolution of nature connection practices over time; how learning nature connection practices within a culture of nature connection contribute to rewilding; how a rewilding process of terra reindigenization can be understood as transformative learning; and what relationships exist between nature connection

practice and rewilding, transformative learning, and the achievement of an ecocentric worldview. To prepare for this analysis, after each interview I collected notes on any themes that emerged. I then transcribed each interview, both to document each interview verbatim and as a way to more deeply familiarize myself with each interviewee's narrative. Using the written transcript, I then coded the data using an open coding procedure (Merriam & Tisdell, 2016) to identify any data that might be useful. First, I read through each transcript highlighting phrases and sections of text that stood out as relevant to my research questions. Those sections I then returned to and marked with a code phrase summarizing the theme or themes of the text. For instance, in Petra's interview she spoke frequently about her gardening and cooking practice as a way that she connected with nature. Those sections of the text I highlighted and coded with the phrase "connecting through food."

I then moved into a phase of axial coding (Charmaz, 2014; Corbin & Strauss, 2015) in which I grouped the open codes in order to develop categories and subcategories that captured any recurring patterns within the data (Merriam & Tisdell, 2016). In Petra's interview, the code "connecting through food" was combined with other codes such as "developing belonging" and "growing connection to place" under the category of "nature connection practice and indigeneity/belonging to place." In some cases, codes could be grouped into multiple categories. In those cases, I made a note of the possible categories that a code could fall into, and then once all the codes were grouped into categories I returned to those undetermined codes to consider which group of codes they held most in common with. Finally, I then returned to the data and reviewed it again to search for any evidence that addressed the study's research questions and fell within these categories.

Dependability Strategies

In order for a study to be useful it must be trusted and believable. Yet, before a study can be judged trustworthy and believable there must be an agreed upon set of criteria by which its quality can be assessed (Patton, 2015). Qualitative and quantitative research paradigms have each developed multiple approaches to the verification of research (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). To ensure the trustworthiness and believability of this qualitative study with a small quantitative component, I employed the verification strategies of qualitative and quantitative for their respective strands of data collection.

Qualitative Verification Strategies

In the case of ethnographic qualitative research specifically, its ideal of collecting data in naturally occurring settings, reliance on the personal engagement of the researcher with the research subjects, and emphasis on the subjective reality of participants are qualities considered antithetical to the positivist requirement that research take place in a controlled environment from which the researcher is removed in order to ascertain data on an objective, measurable reality. Rarely, if ever, are these ideal research contexts fully realized in positivist research, but they indicate a chasm between paradigms that some researchers believe is unbridgeable. Because of these differences, ethnography does not easily conform to quantitative verification standards of objectivity, reliability, and validity: ethnographic research is neither controlled nor is it replicable (Merriam & Tisdell, 2016). However, Guba and Lincoln (1981) argue that this does not undermine the quality and value of ethnographic, or any qualitative research, but indicates the need for a reformulation of the verification criteria used to assess value and quality. Multiple qualitative research theorists have proposed alternative verification criteria (Creswell, 2013; Denzin & Lincoln, 2000; Lichman, 2013; Lincoln, Lynham, & Guba, 2011; Patton, 2015;

Tracy, 2013; Wolcott, 1994). Merriam and Tisdell (2016) argue that the ultimate goal of all these criteria is to establish the methodological rigor and trustworthiness of a study. They therefore summarize these alternative concepts into three main verification criteria of concern to qualitative researchers: credibility, consistency, and transferability.

Credibility addresses the correspondence between the research findings and the real world which can be obtained through the triangulation of multiple sources of data, member checks, ensuring adequate engagement of the data, establishing the credibility of the researcher and engaging in peer review (Merriam & Tisdell, 2016). Triangulation of data between multiple data sources (interviews, observations, documents, etc.) to corroborate information is a key way that researchers can ensure that they have reliable and complete data. Conducting member checks with participants throughout the data collection process can also help ensure that the perspectives of participants are being captured accurately (LeCompte & Schensul, 2012). Additionally, by engaging in deep research about the population they are working with, consulting with local community experts, and engaging in reflective practices researchers can help guard against their own ethnocentrism and biases that may influence their interpretations (LeCompte & Preissle, 1993). Ultimately, when research reaches the publication stage, peer review of the written account of the study and its findings provides a final credibility check as expert reviewers assess and confirm (or deny) the credibility of the work.

Consistency refers to whether the findings of a study are consistent with the data that has been collected and can be assessed through an audit trail that thoroughly describes how data was collected and how analysis was conducted (Merriam & Tisdell, 2016). Consistency can also be assessed by comparing how similar the study's findings are to that of other research with the same phenomenon or population (Schensul & LeCompte, 2012). Differences in findings would

need to be explainable with data from the dissenting study. Consistency of ethnographic research can be enhanced by making explicit the methodological choices of the study, such as choice of setting, participants, research lens, methods and procedures for analysis of data, as well as the researcher's positionality in relation to the research topic and population, and the social context of the research study (Schensul & LeCompte, 2012).

Transferability concerns whether the findings of a study can be applied to and offer insights into other situations. In order for a study to be transferable the researcher must provide sufficient contextual information about the scenario studied while also allowing findings to be generalizable by avoiding overprescribing how the findings should be applied to scenarios beyond the scope of the study (Merriam & Tisdell, 2016). To ensure ethnographic research is transferable, LeCompte and Goetz (1982) suggest researchers use terminology, theories, constructs, and methods that are readily recognized within the researcher's discipline so studies are more readily comparable with one another. They also note it is important to document unique aspects of the historical or social context of the population or the setting in which the research takes place, since these may limit the transferability of the findings to other contexts or settings.

It would be antithetical to the ethnographic method for researchers to conduct all studies in a controlled environment, maintaining distance from their research subject, and aiming for replicable results, as positivist paradigms of validity and reliability require. However, it is still possible for ethnographers to demonstrate the quality of their research by establishing credibility, consistency, and transferability. By adjusting positivist criteria for evaluating quantitative research to more accurately reflect constructivist epistemological assumptions qualitative research findings can be assessed alongside quantitative research appropriately.

Verification Strategies for the Quantitative Tool

Just as qualitative research needs to be credible, consistent, and transferable to be considered useful and trustworthy, the verification strategies used in quantitative research are *reliability* – whether the methods of data collection and analysis are explicit and consistent – and *validity* – whether one can draw meaningful and useful inferences from the data. Much like the requirements of credibility in qualitative research, for quantitative research to be considered reliable it must demonstrate that the study has been carefully designed, research procedures have been faithfully followed and documented, and it adheres to the standards of the scientific community (Creswell & Creswell, 2018).

To ensure reliability, the Nature Relatedness tool was administered consistently to all study participants through Microsoft Forms. Additionally, this particular tool was chosen because a Chronbach alpha test conducted by Nisbet et al. (2009) demonstrated the Chronbach's alpha for the full Nature Relatedness scale was .87, and .84, .66, and .80 for the Nature Relatedness factors of NR-Self, NR-Perspective, and NR-Experience, demonstrating good internal consistency. The temporal stability of the Nature Relatedness tool was also demonstrated, with test-retest correlations over a 6-to-8-week period being .85 for the overall Nature Relatedness measure, .81 for NR-Self, .65 for NR-Perspective, and .85 for NR-Experience (Nisbet et al., 2009). These findings support that this tool is valid.

Summary and Conclusion

In this primarily qualitative study, strongly informed by ethnography with a small mixed methods component, I collected qualitative data through ethnographic interviews and quantitative data through Nisbet et al.'s (2009) Nature Relatedness survey to investigate how a culture of nature connection and the use of nature connection practices impacts learners' cultural

and ecological indigeneity and their practice as educators. In addition, I used autoethnographic data about my own experiences learning nature connection to provide further context for understanding the environmental adult education program and nature connection practices about which participants were interviewed. This chapter outlined the study's participant selection, methods of qualitative and quantitative data collection and analysis, and strategies for verifying the data. Acknowledging there is an ethical dimension to all research, I have provided an outline of my position as a researcher in an attempt to mitigate potential biases in this study and have made transparent the IRB-approved consent process used with all participants. The following chapters will address the study's findings and the implications of these findings.

Chapter 4

Discussion of Research Findings

*“My relationship with nature is my relationship to life. I **am** nature.” – Madeleen*

“Remember that you are a part of nature and nature is within you already. And you are inseparable with nature. ... Nature connection is deep and intimate, the remembrance of the deep intimate connection, remembrance of the oneness, basically. Remembrance that we are not separable from them, that we are nature ourselves.” – Alicia

Introduction

The purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their practice as educators. Using the lenses of transformative learning theory, Plotkin’s “Soulcentric” model of psychological development, and rewilding, I analyzed ethnographic interviews with seven educators and nature connection learners in order to pursue the following research questions:

1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?
2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?
3. Where does an eccocentric worldview appear in these processes?

In this study, qualitative data was collected through ethnographic interviews with participants and the autoethnographic reflections of the author. While this is primarily a qualitative basic interpretive study informed by ethnography, data was also collected using a quantitative tool,

Nisbet et al.'s (2009) Nature Relatedness survey to measure the presence and quality of nature connection among participants.

The findings in this chapter will begin to paint a picture of how participants learned to connect to nature, and, through doing so, have developed an ecocentric worldview that has influenced their cultural and ecological indigeneity and their practice as educators. Their stories illustrate the characteristics of an ecocentric worldview, the foundational experiences that contributed to the development of this perspective, the ways this perspective has impacted their connection to place and their teaching practices, and the transformative elements of their nature connection journeys. This chapter begins with an introduction to the participants, followed by a detailed review of the quantitative and qualitative findings that emerged from their surveys and interviews. The quantitative findings demonstrated the presence of nature relatedness and an ecocentric worldview among participants, however, qualitative data collection identified and further clarified elements of that ecocentric worldview that the Nature Relatedness scale did not. The themes of these findings will be illustrated with descriptive quotes from participants as well as my own reflections on the themes. The purpose of including this autoethnographic element is to provide additional data for analysis as well as examine the extent to which transformative learning has taken place in my personal process of learning nature connection. The chapter will end with a summary of the findings, and in Chapter Five I will discuss these themes in light of the study's theoretical frameworks and consider the implications for theory, practice, and research.

Introduction to the Participants

The participants in this study are an international group of adult nature connection learners who participated in the U.K. Art of Mentoring program in 2015 and 2017. They

represent women and men (cisgender and gender fluid) from Belgium, England, Italy, the Netherlands, Norway, Japan, and New Zealand who identify as educators in either a formal or informal context and who identify nature connection as having impacted that practice (see Table 1). Demographic data was collected from participants based on what they felt comfortable sharing and thought relevant to their identity. Their ages range from 35 to 62, and all attended university. Their professions include working in early childhood and elementary education, forest therapy guide training, and other freelance work in outdoor or nature-based programming and endeavors. These characteristics do little to capture the individuality of the participants, but their words in the following sections will do greater justice to their unique perspectives and experiences as nature connection learners and educators. Some participants chose to use their real names in this study, while others chose a pseudonym to maintain privacy (see Table 1).

Table 1

Participant Demographics

<i>Participants</i>	Demographics	Educator Role
<i>Matt</i>	35-year-old, Male, white, British	Freelance youth and community worker specializing in outdoor instructing and activity: instructing for the Duke of Edinburgh Award; locally running outdoor programs for schools and youth centers.
<i>Vixenz</i>	Female, 62 years, European/pākehā (a white New Zealander as opposed to a Maori person), BA Psych honors. Self-employed Nature guide and mentor	I train and mentor Nature and Forest Therapy Guides as part of a global team.
<i>Petra</i>	Biologist, mother, European	High school teacher and mother
<i>Chiara</i>	For the study and because I know how science works, I am not sure this defines my identity. 43, woman, Italian, European (whatever that means) light skinned, PhD, self employed	Starting a nature-based school and support for the community, massage therapist

<i>Madeleen</i>	woman, 38, Dutch, living in city, theatre director and teacher, herbalist, constellator (systemic coach), nature coach	writer, creator of products that connect people to nature, coaching - mostly constellation work (becoming aware of and embodying the interrelatedness between everything.) Writing emphasizes the nature of consciousness and our relationship with the earth.
<i>Alicia</i>	Japanese, female, 40s	I teach meditation both indoors and outdoors.
<i>Tonton</i>	permaculturist; genderfluid male; kindergarten assistant; 8-shields student; live in a cohabit on a CSA farm	kindergarten, work with 3-5-year-olds in a school-garden and in a forest playground we built. Also pull CSA members and others around me into nature connection whenever I can ("Hey, come over here - look at that ...")

Quantitative Findings

While this is primarily a qualitative basic interpretive study informed by ethnography, I also used Nisbet et al.'s (2009) Nature Relatedness (NR) Scale to collect quantitative data on the presence and quality of nature connection among participants. The Nature Relatedness Scale was distributed via Qualtrics to all participants prior to their semi-structured interviews. This survey was used as a self-assessment tool that was discussed as part of the semi-structured interview with the participants. The tool was also used to establish the presence of nature-relatedness among participants and to assess participants' worldview and resulting environmentally responsible action in the world.

Nature Relatedness and the NR Scale

Nisbet et al. (2009) developed the Nature Relatedness 21-question survey using a Likert-type scale to assess the affective, cognitive and physical relationship individuals have with the natural world and to determine empirically if nature connected people (those who score highly in nature relatedness) are in fact more likely to engage in environmentally responsible behavior (ERB) (see Appendix B). The survey is discussed in more detail in Chapter Three. Nisbet et al.

found that those individuals high in nature relatedness reported more environmental concern and endorsement of pro-environmental attitudes, and more self-reported environmental behavior. In addition, high levels of NR predicted an ecological perspective in participants, as well as strong views about the seriousness of ecological problems and human treatment of the environment. Because transformative learning is concerned with the change in worldview and its impact on action (Ettling, 2012; Mezirow, 2006; Mezirow & Associates, 2000; Mezirow et al., 2009; O'Sullivan, 1999; 2012; O'Sullivan et al., 2002; Taylor, 1994) this tool was especially appropriate for this study. Nisbet et al. (2009) also found that Nature Relatedness correlated with agreeableness, conscientiousness, openness, and humanitarianism as those concepts are defined in social science research. These are personal qualities that could enhance a more open worldview achieved through transformative learning. The NR Scale was also found to be a better predictor of self-reported environmental behaviors than other similar tools.

Descriptive Analysis of Data

No normative scores exist for the tool, so meaning is interpreted according to the possible range of scores; the higher the score the more of that attribute the person has endorsed. The number of participants in this primarily qualitative study is a very small group ($n = 7$) to assess using a quantitative tool, so generalization is not possible. However, the tool does provide interval data on three sub-scales and a combined total scale, so basic descriptive statistics can be used to describe the group. The NR-Self subscale measures the internalized identification with nature, reflecting feelings and thoughts about one's personal connection to nature. The NR-Perspective subscale measures one's external, nature-related worldview, and the sense of agency concerning individual actions' impact on all living things. The NR-Experience subscale measures an individual's physical familiarity with the natural world and their level of comfort

with and desire to be out in nature. Finally, the Total NR score measures an individual's overall Nature Relatedness, which, Nisbet et al. (2009) explain,

encompasses one's appreciation for and understanding of our interconnectedness with all other living things on the earth. It is distinct from environmentalism in that it includes much more than activism. It is not simply a love of nature or enjoyment of only the superficially pleasing facets of nature, such as sunsets and snowflakes. It is also an understanding of the importance of all aspects of nature, even those that are not aesthetically appealing to humans (e.g., spiders and snakes) (p. 718).

There are no outliers in the data, so the mean can be used as the measure of central tendency. For the subscales and the total scale all scores lie well within one standard deviation of the mean, and variance scores are also quite low. This demonstrates that there is a great deal of similarity among these participants. This is observable from their scores (see Table 2).

Table 2

Descriptive Analysis of Data

<i>Participants</i>	NR-Self	NR-Perspective	NR-Experience	NR Score
<i>Matt</i>	4.875	3.714	4.5	4.275
<i>Vixenz</i>	4.875	4.428	4.333	4.57
<i>Petra</i>	5	4.428	4.5	4.666
<i>Chiara</i>	5	4.14	4.66	4.428
<i>Madeleen</i>	4.75	4.28	4.16	4.42
<i>Alicia</i>	5	4.14	4.333	4.714
<i>Tonton</i>	4.875	3.42	4.83	4.38

Note: Scale is scored from 1 – 5, with 1 being the lowest and 5 being the highest.

NR Scale Findings

Analysis of the Nisbet et al.'s (2009) NR Scale produced three primary findings. First, the NR-Self subscale produced the highest score of all subscales for all participants, with participants scoring between 4.75 and 5 (the highest score possible) (see Table 3). The NR-Self subscale is closely related to the presence of an ecocentric worldview, a perspective that views the non-human world as animated or ensouled, sees intrinsic value in the greater-than-human world, and understands all beings as connected through dynamic webs of interrelationship. High scores in this category demonstrate that participants are not only highly nature-related, but they also possess ecocentric worldviews.

Table 3

Statistical Analysis of Data

	N	Mean		Std. Deviation	Variance	Skewness	Kurtosis
		Statistic	Std. Error				
NRSELF	7	4.9107	.03571	.09449	.009	-.595	-.350
NRPERS	7	4.0789	.14312	.37867	.143	-1.032	-.001
NREXPER	7	4.4729	.08490	.22463	.050	.323	-.284
NRTOTAL	7	4.4936	.06054	.16017	.026	.200	-1.365

Secondly, the NR-Experience subscale produced the next highest score and had a little more dispersion around the mean. This subscale was the only normally distributed variable demonstrating the only bell curve of the four scores. Participants' stories provided a more detailed picture of the wide range of experiences they had with nature.

The NR-Perspective subscale produced the lowest mean score with the most dispersion, suggesting a split in the group on this subscale, but not enough to call it bimodal. Again, participants' stories provided a clearer picture of this data, suggesting that this split is related to

some participants' skepticism around conventional environmental conservation approaches. Discussions with several participants about their experience taking the survey indicated they had the most difficulty answering this subscale when the questions were framed as definitive while they saw reality as more ambiguous. This was especially the case in the presence of scientific knowledge and understanding. For instance, several participants were ambivalent when it came to the survey item "Some species are just meant to die out or become extinct" because, as they acknowledged, extinction is part of the evolutionary process that occurred before human intervention and continues outside of human intervention. They struggled with what they thought was the intended meaning of this survey item (that humanity needs to recognize its responsibility in accelerating the extinction of some species) while remaining true to their scientific perspective that extinction is a necessary part of natural processes.

The NR Scale proved a useful tool in demonstrating the presence of nature relatedness and an ecocentric worldview among participants, however, as we will see in the following section, qualitative data collection identified and further clarified elements of that ecocentric worldview that the scale did not.

Qualitative Findings

The NR Scale measured an internalized identification with nature, one's external, nature-related worldview, a personal sense of agency concerning one's impact on all living things, and a comfort and familiarity with being in nature. However, the scale does not address how participants experienced or made sense of those qualities or how participants were able to cultivate them. Additionally, the scale does not address how nature connection and an ecocentric worldview impact the process of growing connection to place or influence educators' teaching practices, nor does it consider the transformative elements of that process.

Qualitative findings revealed three interrelated themes regarding the process of learning to connect to nature and growing an ecocentric world view. The first theme demonstrates two primary characteristics of the participants' ecocentric worldview: viewing the world as animated or ensouled and seeing the world as an interrelated complex system. A second theme is the process of developing a connection to nature and an ecocentric worldview, which consisted of foundational experiences, the incorporation of diverse frameworks, a deepening of perspective through a crisis, and cultivating a greater commitment to connecting to a specific place. Finally, the third theme identifies four elements of the transformative process of learning an ecocentric worldview: gradual change, integrating and orienting communal events, spirituality, new pedagogical approaches and perspectives. Information on these aspects of nature relatedness and ecocentric worldview was revealed through ethnographic interviews and will be discussed below. My own autoethnographic reflections are also included to provide additional data for analysis as well as examine the extent to which transformative learning has taken place in my personal process of learning nature connection. An overall data display of the qualitative findings is presented here as a guide for the reader (see Table 4).

Table 4

Outline of Qualitative Findings

Themes	Description of Findings
1. Characteristics of Ecocentric Worldview	• Viewing world as animated or ensouled • Viewing world as interrelated complex system
2. Process of Developing Ecocentric Worldview	• Foundational experiences • Incorporation of diverse frameworks • Deepening of perspective through a crisis • Growing connection to place
3. Transforming Through an Ecocentric Worldview	• Gradual change • Integrating and orienting communal events • Spirituality • New pedagogical approaches and perspectives

To better understand what made participants' nature related or ecocentric worldview unique from other perspectives and to clarify the process of developing such a perspective, participants were asked to recount their nature connection journey, beginning with a time before they thought consciously about connecting to nature as a practice or philosophy. Participants were also asked about how they understood and practiced nature connection at this point in their lives. Analysis of their accounts revealed data that further clarified the characteristics of an ecocentric worldview, the foundational experiences that led to the development of that worldview, and the impact this perspective had on their connection to the places where they lived.

Table 5

Participant Descriptions of Ecocentric Worldview

Participants	NR Score	Ecocentric Worldview
<i>Matt</i>	4.275	"I'm much more a part of the wider universe than I realize and, what does that mean, and what ways are there to explore that, and how does that allow me to just grow and develop as a person, knowing that we're not separate individuals."
<i>Vixenz</i>	4.57	"For me it's about restoring right relationships. ... Mostly based around gratitude and being of service to. ... And I think that's what we all have to do. And I think, that's when things will start to shift and change, because we'll be healing ourselves, and when you're healing yourself that just goes outwards."
<i>Petra</i>	4.666	"It's not a competition because we are all equal and we're all beautiful, and we're all wonderful, and we all have gifts. ... I think if you're connected to nature you just don't stand out, you blend in, and you give love to people. You know, you send out love and light to people. As you do to nature, as you do to plants, as you do to animals. ... I think that's more or less it. It's like, 'We're all in this together.'"
<i>Chiara</i>	4.428	"For me it's a practice in terms of having in the back of your mind the awareness, which is one of these things that you're not aware anymore, actually. That when you go and collect your [plants] – not even speaking the gratitude, maybe, but you have it – and when you go and collect some wild edibles, you won't collect them all. ... But also thinking "is it really something I need? Or is it just I can do without?" ... And thinking a bit broader than my own interest. ... Cultivating the 'more-than-me.'"

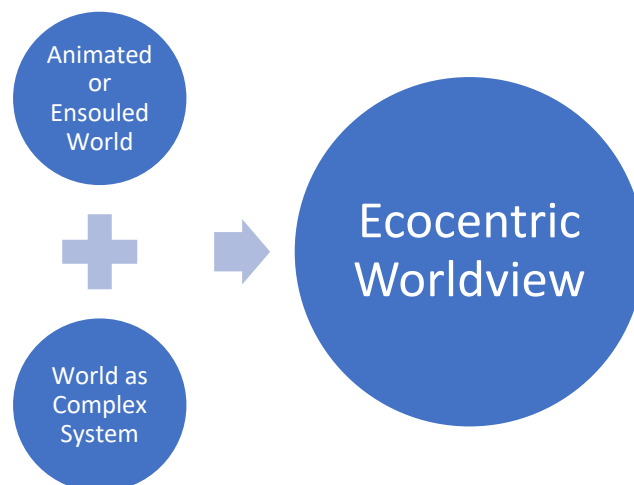
<i>Madeleen</i>	4.42	“So maybe it’s more relationship to life... I feel now that’s what nature connectedness for me really is – is not to feel connected to the thing, but to the being.”
<i>Alicia</i>	4.714	“To remember that you are a part of nature and nature is within you already. And you are inseparable with nature. ...Remembrance of the oneness, basically. Remembrance that we are not separable from them, that we are nature ourselves.”
<i>Tonton</i>	4.38	““We are the land. Outsiders are often disconnected, therefore destructive. The land needs us to be connected so we prepare and protect and care.’ ...It’s much easier for me to muddy the water somewhere that is not my home. But if I know that I am going to be drinking that water, then I wouldn’t muddy it.”

Theme 1: Characteristics of Ecocentric Worldview

As noted above, participants all demonstrated high overall Nature Relatedness scores as well as especially high NR-Self subscale scores, indicating that they held ecocentric worldviews. Narrative expressions of ecocentric worldview for each participant illustrate the similarity as well as diversity of this worldview (see Table 5). Analysis of the ethnographic interviews identified two primary characteristics of participants’ ecocentric worldview: 1) a view of the entire world as animated or ensouled; and 2) a view of the world as an interrelated complex system (see Figure 2).

Figure 2

Ecocentric Worldview Comprised of Animistic and Complex Systems Views



An Animated or Ensouled World

An animistic view of the world emerged from participant accounts most overtly as they described the more-than-human world as “alive” or “having a soul,” acknowledging that this is often not how we are encouraged to see the world in contemporary Western society. As Madeleen explains,

The ways of society right now, that they look at... It's not animated, is it? Things, things like nature can be décor... it's a décor you walk through that's put there for you, and that's that. And also, I'm looking at myself like that. ... [But] I am not my body that's functioning. I have a consciousness inside of me! I am alive! I'm living inside this form! I'm not a thing. That's the same for anything, I feel. I feel now that's what nature connectedness for me really is – is not to feel connected to the thing, but to the being.

This animistic view of the world was grounded in the assumption that all beings have value, even those that may seem inconvenient to humanity. For example, Vixenz explained that she recognized the negative impact invasive species were having on her local environment, but she could not support the approach local conservationists were taking to rehabilitate nature through pest management:

We want to see the bush regenerate, we want to see more food for birds, we want to see more birds coming back. And both sides would definitely agree to that – we want to have clean oceans, we want to have fish out there, we need to manage stuff. But let's do it in a way that honors and respects and cares for, rather than “Let's get rid of the bastards.” ... Let's do this in a gentle way or a way that honors and respects.

Animism was also implied in discussions of the need for reciprocity with and gratitude for nature, as can be seen in Petra's description of her relationship with her garden:

Just seeing all the plants and everything around me as beings with their own awareness and their own soul, I think that's a big part of that. And when I take something, when I harvest a tomato or something I will say 'thank you' to the plant. But I make sure nobody hears me because they will think I'm crazy! Yeah, those things. I think just taking care of the little bit of nature I have around me, is, for me feels like... it's what I can do, you know?

Madeleen sums up this perspective succinctly, explaining, "It's a belonging story. So, we're connected... not only are we all consciousness, but we're also connected in taking care of each other." Animism and reciprocity proved to be of universal importance among participants and was often associated with cultivating plants through farming and gardening, but also applied to animals, including other humans and one's own body.

World as Interrelated Complex System

Equally important to participants' ecocentric worldview was an understanding of the world as an interrelated complex system. Lange (2012) and Orr (2004) identify a complex systems view as being crucial to learning an ecological consciousness. Such a system allows for the existence of paradox, requires an acceptance of the unknown, while recognizing the interrelationship to all things means that every individual being is part of a larger whole (Gunderson & Holling, 2002; Walker & Salt, 2006).

Chiara: I don't know how nature works, but it's not under our control. ...I can't control or even be aware of the impact of my action, I can just think in the context I have the ability to foresee or imagine the impact. But the wave goes further than I can imagine. If we believe or not in the butterfly effect, yeah, well, are we not to swing our wings because there is a tornado somewhere else? ...Also, embracing the not-knowing, the not-

having-an-answer. And the fact that, yeah, I'm just part of something I don't totally understand. So I'm letting it be and hoping that there is a better intelligence that is better than me. ...I'm cultivating the "more-than-me" ...and thinking a bit broader than my own interest.

Chiara highlights the tension between acknowledging that nature as an interrelated system is outside of humanity's control and comprehension, while at the same time, individuals have a responsibility for their actions and their impact on the greater whole. For most participants, these systems could be best appreciated and engaged with on the local level,

Matt: I find connection works more on a local level. ... I want to refer to Martin Shaw. He says, "I don't love the world. ...The world is just too big. ...What I do love is the Dart, the river Dart in Dartmoor, I love the woods, near my house. My connection is to those specific places that I know and love." ...It's kind of a difference between breadth and depth of our connection. And I think that we can extend our ideas about the planet and connecting to the planet in a very broad sense, but I think the real depth has to come in the local way and that connection to the physical, tangible places that we know and can go to.

At the local level, an individual can most immediately recognize the impact of their actions on their surroundings, and he has the opportunity to form deep relationships with the beings that also live in that place, recognizing them as not simply "décor," as Madeleen describes. Forming connections at the local level facilitates an appreciation for the value of other specific locations and the tangible actions required to care for them.

In several cases, having a complex system view of the world expanded beyond recognizing the interrelationship between different parts of a system. This view allowed

participants to see the value of different agents (Barad, 2007; Lange, 2018; O’Neil, 2018) in the system, even other humans who seemed antagonistic to their or their community’s interests,

Chiara: We always talk about biodiversity in terms of how many species do we have of this or of that. But I think in a culture it’s super important to have a big biodiversity, and a biodiversity that is super challenging as well. ... So in that sense the human biodiversity and how the diversity is helping also the community realizing and making steps... in a way it’s a gift.

The concept of human biodiversity seemed to be used by participants as a way of reconnecting humanity back to nature and natural processes, instead of viewing these as separate but interacting entities. As they resituated humanity within nature, they were able to make sense of the more confusing or contradictory elements of both, or at the very least accept that they exist as a necessary part of the system.

Integration of Themes

The themes of nature-as-animated and nature-as-complex system were integrated by participants to form a sense of being a part of nature themselves and a sense of personal responsibility as a member of that larger system. Chiara explained, “I am nature. ...And I’m connected with myself. ...If someone would be very connected with themselves – nature connection is natural. Because I am nature, if I understand and feel myself I cannot avoid to feel things outside.” Similarly, Vixenz’s recognition of her place in a wider web of relationships was the motivation for her attempts to “live in right relationship”:

We can’t stop this cycle of progress that we’ve been on. But what we can do... is re-establish our own right connection. And I’ve used words like “reverence for” “respect for,” “being in partnership with” you know “in reciprocity with”, “living in reciprocity

with”... And I know I can’t do it 100% because I’m living in a house and I use gas, and you know, I’m still using resources in that way, but if I can do it from a place of connection and gratitude and humility, and a sense of being in relationship with, then I feel like I’ve done my bit. That’s kind of what I’m here to do, to reestablish my own personal sense of living in right relationship. And that, I think, is mostly based around gratitude and being of service to. I’m seeing that more and more as I get older. And I think that’s what we all have to do. And I think, that’s when things will start to shift and change, because we’ll be healing ourselves, and when you’re healing yourself that just goes outwards. And if we all start coming from that place, then that’s where the impact is going to happen. ... I feel like that is where I can have the maximum impact. Not only helping myself but helping others open that door and look through it.

Chiara’s and Vixenz’s descriptions demonstrate a non-dichotomous view of the human-nature relationship and a deep identification with nature. In their research creating the Nature Relatedness tool, Nisbet et al. (2009) identified that there is a relationship between participants’ Nature Relatedness (NR) scores and environmentally responsible behavior – the higher a person’s NR score, the more likely they were to practice environmentally responsible behavior. The findings of this study provide further illustration, through participant narratives, of the relationship between self-identification with nature and environmentally responsible behavior. Participant narratives reveal how these elements of an ecocentric worldview interact to produce more than just a sentiment, but an actionable perspective.

Autoethnographic Reflection

It is difficult to pinpoint when any change occurred in my worldview because it has been gradual. If I think about the development of my ecocentric worldview in the context of

transformative learning, I cannot say definitively that there was a time when I saw the world one way, and then experienced a perspective transformation into an ecological worldview. Yet, I have noticed that as I have become more aware of how my presence and actions interact with the existence of other beings my understanding of my responsibility and needs have changed, as well. I have found that I can hold an overarching philosophy or position that makes sense to me, like “We must take care of the earth in order to take care of ourselves – we are nature” but it is a different thing to apply that philosophy to mundanities of the day-to-day – the sentiment loses meaning because it is not specific. Intentionally connecting with nature in my everyday life through nature awareness has been an opportunity to incorporate specificity into that philosophy and apply it in ordinary moments. My intentional connection to nature has given those moments meaning because otherwise I might not be aware that in them I am making a choice or having an impact on the world around me. Could this new awareness be transformation, or is it simply the development of an already existing worldview?

An example of one of these instances occurred in the fall after I had returned from my first Art of Mentoring camp. I was mulching the garden with the cheapest bags of mulch I could find at Home Depot. Mixed in with the black mulch I started to find black bits of plastic – plastic screwheads and plastic washers – and each bag I opened I found more. In the past I do not think I would have noticed the plastic or been too concerned about it being there. I might have just thought it was odd or been annoyed that it was something that I had to pick out. But at that moment I became horrified, truly horrified and very angry when I realized the deeply pervasive presence of plastic in my life. So pervasive that as I tried to add supposedly-organic matter to my garden it was inevitable that I would also be adding plastic. And then I realized that the bags holding the mulch were plastic, and the padding on my gloves was plastic, my gardening tools

were part plastic – it was everywhere. I was suddenly inescapably aware of how much plastic is present in the world, that we are daily creating more, and that it will never go away. It will just keep showing up in places where we once thought it didn't belong – like mulch – and then we will get used to it. I do not believe this realization was only the result of finding plastic in my mulch. That plastic was given meaning by my growing awareness, through nature connection, of the other beings in the world around me, and how they impact me and I impact them. My growing awareness of the complexity of soil – not simply “dirt,” but a composition of many living organisms and minerals – or just how many animals live around my garden and eat there, gave the plastic much greater meaning than “oh, here's some trash I need to throw away.”

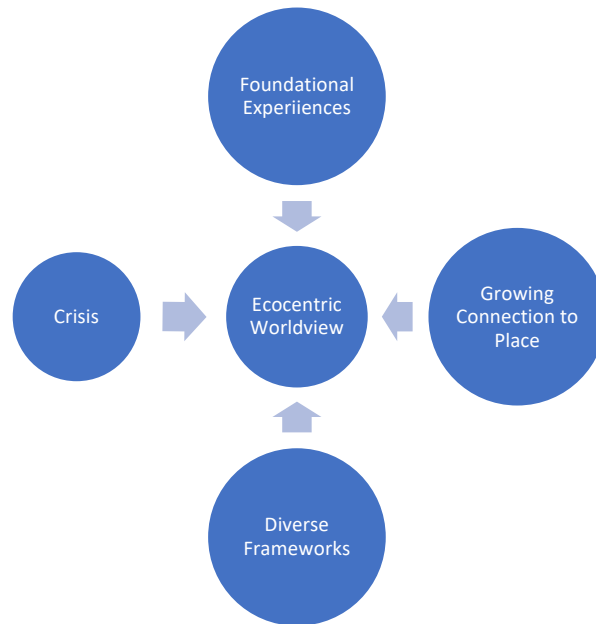
In that moment, I experienced a small crisis, a brief disorienting dilemma (Baumgartner, 2012; Mezirow 1991, 2006; Mezirow & Associates, 2000) that presented two views of the plastic in the mulch: one view saw the plastic as a momentary inconvenience, isolated from any broader significance; the other, new perspective forced me to see this supposedly mundane act as something that had much deeper implications. My connection to and awareness of nature made the ethos of “caring for the earth” a concrete thing. “Care for the earth” as a worldview became “become aware and limit your use of plastic” as a microview. Intentionally connecting with the nature around my home made an already existing worldview less abstract and more actionable.

When I consider what being connected to nature means to me, I realize that I understand nature connection as living with an awareness of my node in the greater system that links all beings. If I hold that awareness, then my actions always have a consequence and are always a choice, and I can choose if I want to reinforce the whole or act against it. The analogy of atomic energy comes to mind: all things are made up of energy – even what we think of as inanimate objects, like rocks – and we are all colliding atoms and energy in an endless game of pinball. But

we do have some control over our immediate sphere of collision and that control has meaning, at least to our human brains. Intentionally living with an awareness and concern for my role in the system is a way that I make meaning of this cosmic pinball game and make decisions about my actions. And nature connection is intentionally cultivating a relationship with those atoms and energies around me as equally valuable entities to myself, humbling my human ego, which also guides my choices about my actions and helps me make meaning. Nature connection practices like paying attention to the information provided by my senses – physical sensations as well as intuitive – or giving gratitude for the first buds of a strawberry plant I’ve been nurturing or learning about the bird and tree species I see on my daily walk, are moments of awareness that continually provide an opportunity to confront the disorientation I experienced when finding plastic in the mulch and reaffirm an awareness of and appreciation for the web of relationships that I am inextricably bound within.

Theme 2: Process of Developing Ecocentric Worldview

Participant stories about the development of their connectedness to nature revealed five common experiences that were foundational to that process: mentorship by a family member, experiential encounters, academic study, farming or gardening, a nature connected community. Participants also used a variety of different knowledge frameworks to make sense of their relationship to nature. These frameworks were sometimes closely related to nature and the environment, such as permaculture or herbalism, but they also could be as seemingly far from nature as the philosophy of the free software movement. Finally, while some participants described a gradual and growing trajectory of connecting to nature and developing environmental concern, others mentioned undergoing a form of crisis that caused them to reassess their relationship to themselves and the world around them (see Figure 3).

Figure 3*Elements of the Process of Developing an Ecocentric Worldview****Foundational Experiences***

All participants traced their first feelings of connection with nature back to childhood, with several maintaining that this connection has always been there for them, as Tonton describes: “When does it really start? ... I have memories from before I was five-years-old. ... What I’m trying to get at is that it’s always been there. It’s never not been.” Matt’s story highlighted how interacting with nature was so integral to his childhood that it served as the catalyst for other foundational experiences, such as play, joy, and exploration:

Nature is kind of the backdrop for how I felt free and I how I explored, and ... how my joy came out in the world playing as a child, really, I suppose. So there’s a lot positive associations, and nature always there, in that I would always be outside climbing trees or exploring the parts of the park through the undergrowth, and these kinds of things. ... I consider that part of my nature connection journey even then, like, really early.

Descriptions of early childhood experiences with nature often highlighted the ease, comfort, and curiosity of that relationship, elements that receded as they grew older and developed other interests. As participants' accounts of their nature connection journey progressed through their adolescent and adult lives, they described moments of awakening to a consciousness of connection to nature. These stories revealed five common themes: mentorship by a family member, experiential encounters, academic study, farming or gardening, mentoring, and being a part of a nature-connected community.

Mentorship by a Family Member. Mentorship in nature connection by a family member was often subtle, but memorable, such as berry picking or tending home gardens with their parents, and family camping trips. At other times, mentorship was more explicit, as Alicia describes,

My grandmother was carrying the [tradition] of this nature-based spirituality. Shintoism – like “nature is god.” I kept hearing that. In front of my house was a Shinto shrine where I was deeply associated with. My mother was a nature conservationist. She was a part of a nature conservation league, like a nonprofit member, preaching about nature conservation. So yeah, I definitely grew up in that environment.

Despite being more direct, participants did not suggest that more explicit mentorship in nature connection was more significant than their subtler experiences. In fact, explicit mentorship sometimes slipped past their awareness, perhaps taken for granted at the time, but only later emerged as being a guiding force.

Experiential Encounters. Embodied, experiential encounters with the natural world were crucial to forming and deepening a relationship with nature. Sometimes these experiences

were unexpected, as when Alicia describes going on a river hike as part of an environmental camp:

In the mountains every summer, there is this like one-week intensive. And, I think he was like graduate student who actually was more hands on, who took us climbing up the river. ...I was grabbing the log and the water was flowing and I was walking in the water, and just, just using the whole body as something awakened in me. Like, "This is what I wanted. This is what I was missing.

At other times, they were accumulative experiences of engaging with landscapes that deepened in significance over time:

Matt: Being out walking and hiking, and just being able to just get out there and kind of be in relation to it through those types of activities. I really like to go rock climbing a lot, camping and that kind of thing, spending time out there was a big nature connection practice for me, and still is. Then that developed into interests in conservation and learning about how nature works and connecting with the systems and the interactions and the relationships there and learning how we can live in a better relationship with land management and conservation.

Vixenz: Every time I hiked I would get my soul nurturing when I'd go down on the beach here. Through all the stress and the trauma of my marriage that was really dysfunctional and quite abusive, mentally abusive. That was where I went and got my solace, was in the beach and by ocean. ...And what got me through that time there was going for walks in the bush at the bottom of the road with my dog – I had a dog, so I had to go every day – and just walking through that bush through the forest there, doing all my processing, my mental processing, my healing, my inner healing.

Matt's and Vixenz's stories demonstrate a repeated physical engagement with places that gave them pleasure or relief, which over time led to a greater appreciation of what that place meant to them and what responsibility they had to that place. As Chiara describes, embodied engagement with a place is a form of thinking that is beyond thinking done by the mind,

For me, integrating is when I go out and I do my job and I do with the hands, and I embody things and then I have the answer settling in me, by having my brain focus on something else and letting the process be in the background.

By physically engaging with a natural landscape, participants described an appreciation of place that extended beyond abstract concepts to become a visceral connection.

Academic Study. Yet, participants' stories did not discount the role intellect plays in forming connection. For most of the participants, the academic study of environmental science (or computer science, in Tonton's case), was a source of curiosity and awe concerning nature and a motivation to respect and conserve it:

Petra: I started biology... and just learning how beautiful everything is, and how wonderful everything is. Every day was just like "Oh wow! Oh wow!" For all those years it was just "oh wow!" but still it was always with the mind.

For Petra, the study of biology allowed her to appreciate even more the wonders of nature.

Rather than sterilizing the beauty of natural phenomena, her studies illuminated nature's intricacies and awe-inspiring logics, which brought about a deepened respect and reverence for them. Ultimately, her studies led to a career as an environmental educator, teaching other teachers and advocating for conservation. Similarly, Matt identifies academic study of environmental sciences as one of the bases for his current passion for conservation:

Learning about how nature works and connecting with the systems and the interactions and the relationships there and learning how we can live in a better relationship with land management and conservation – that sort of developed a little bit later on in my life, I suppose at university and after when I started working.

Academic study of environmental sciences, land management, and conservation are also an important complement to a focused connection to local place, which may not include an awareness of that place's relationship to a larger system. Her academic study of forestry allowed Chiara to better appreciate the many scales that make up a ecological system and the interactions between those scales:

I learned how a fish breathes and how a bird flies as well as how to plan a forest that I will never see... Because I cut the tree now and the result I will see in a 150 years, and probably I will not be there. So, both time and space scale would be soil chemistry in the detail and landslide and fire management on a huge scale. Both of them were part of the study, and that's something I... I loved it. Literally. ...Zooming in and zooming out.

An academic appreciation of the whole ecological system makes explicit those relationships that are more difficult to experience first-hand, but which are crucial to be mindful of when engaging in conservation or more humble pro-environmental behavior. Even the seemingly unrelated study of computer science, as in Tonton's case, contributed to a deeper understanding of nature as a living and dynamic system:

Tonton: I was studying game programming at the university. ...I worked with a guy who ... taught me about free software and the ethics around free software. And I think that was the first real eye-opener for ethics or morals being such an important thing. ... people

were talking a lot about resilience ... and so I started looking into these things and the result is always something closer to nature.

Farming or Gardening. As they progressed further on their nature connection journeys, almost all of the participants mentioned the importance of gardening and farming in connecting with their home place. For Petra, this took place at her home and provided food and herbs for her and her family. She explains, “Connecting is food. Maybe that’s weird, but I think that is my way into being connected with nature the most, is the food that I eat and the food that I grow in my backyard.” As Petra describes, her relationship to food and where it comes from is central to her sense of connection. At a young age she stopped eating meat, not wanting to eat animals that she saw living around her on her family’s farm. As she learned more about organic farming and herbalism she came to understand more deeply the relationship between herself, the plants that provided her with food and medicine, and the broader ecology in which they all lived together. Other participants tended the land in collaboration with others,

Alicia: I’m part of this permaculture community, a local community. I need this hands-on work where I can touch nature physically, so I go there and work, biweekly or so, if not more frequent. ... I put myself in the communities to make me reminded of this nature connection, ...to keep cultivating it.

Alicia describes how working with permaculture has allowed her to respect nature’s wild processes, not trying to control them, as in traditional agriculture, but recognizing that these processes exist for a reason and that any change in them effects the way the whole works together. Highlighting that this is not just an intellectual understanding, but one learned and reinforced through experience, she feels a need to work on the farm regularly to maintain her connection to nature in general, and that land in particular.

Nature-Connected Community. In her description of the permaculture community she belongs to, Alicia also mentions the importance of working together with other people and seeing humans and nature all working beautifully together. Connecting with other people was a final theme that emerged from participants' stories of developing nature connection. Many admitted that they had not always appreciated the relationship between people connection and nature connection, however, as Petra describes, having others around you who share similar perspectives and interests is crucial:

I think nature connection is very difficult to do alone. If you live in a society, like, I am here and you are there, nature is just a by-product, ... not a priority, then it's really difficult to be the weird one that cares for nature. So, if you have that community around you where everybody feels like that, it's very easy to feel that way and go with the flow.

Petra highlights the difficulty of holding and deepening an ecocentric worldview when it is not supported or may even be actively discouraged by one's community. Conversely, being surrounded by others who share similar values and beliefs can be a catalyst in developing one's own perspective, as Madeleen describes:

Going to the Art of Mentoring has been a huge help in giving an actual place where these things are recognized. You have a different holding space, right? That gives your nervous system a different feedback loop. To be in a culture that recognizes, allows and supports the natural you, makes you feel safe and met. As a result my system relaxes and naturally authentic connection qualities activate. This happened as natural response, an inherent design. Within no time I felt connected to strangers as family. The same with nature, after the camp I

remember double taking a photo of a big rock in a café because I felt our eyes met. Then I knew something big had happened. My relationship to nature, at the depth of it, got to a pivoting point there.

Madeleen describes how her capacity for connection increases as she settles into a “holding space” that makes room for it, while simultaneously she receives “feedback” from her environment that allows her to further her natural tendency to feeling connected. Nature connected communities also reinforce connection through customs and practices, a realization that Tonton gleaned from his work in early childhood education:

Having traditions – because that connects us to our family, to both the place and to the people and to everything. And that creates stability, it creates a sense of connection and being a part of ... I think it all works down to that. Like, roots, both to the land, but also to the people. Maybe roots is a nice term for connection and relationship, because roots grow.

As Tonton identifies, practices that are imbued with shared meaning, such as traditions, are a powerful tool for learning and teaching nature connection. Coming full circle, participants’ experiences of family members mentoring them in nature connection often included traditions, such as keeping a Shinto shrine or taking an annual camping trip, that helped to elevate those experiences to something more meaningful. Indeed, all five of these themes often worked in concert with one another in the stories participants told of their nature connection journey, so that holding one as more significant than another would be mistaken.

Diverse Frameworks

While participants did share common experiences in their development of nature connection, they came to make meaning of nature connection and found ways to express it through a variety of different frameworks. Not surprisingly, several participants mentioned their experiences studying shamanism herbalism and flower essences, forest therapy, and ecotherapy, all systems of knowledge that rely on an awareness and respect of nature to bring about healing. For Vixenz, learning about the subtle energy medicine of flower essences provided a context for understanding her connection with nature:

My journey with the flower essences opened a whole lot of self-understanding to me because it was like giving me a road map for working consciously with plant medicine, not just taking it as a ... 'here's some drops, take these and you'll feel better.' It was about consciously engaging [with plants] and learning more. It sparked my curiosity so I went and learned a whole lot more about how things are connected... why we do the things we do and... and saw that in myself.

Nonviolent communication, body-work, and constellation work were other healing frameworks participants mentioned playing a role in their development of their nature connection. While these knowledge systems may not immediately appear to be related to cultivating a relationship with nature, Madeleen demonstrates how constellation work has been integral to her own nature awareness:

Doing constellation work and travelling through these energies – that's why I felt more connected to my ancestry. Also, to my ancestral land. And it has more meaning to me now. ...I can feel it when I walk across the shore, I can mostly feel my ancestors – mostly my, we say *foremutter*s, like my *voormoeders*, the mothers that came before me – I can

feel them walking with me. It's very touching. So that's become very tangible. So I can feel the land more, also because I did a practice that is not really related, or we think not related to nature, but it's really based on the practice of embodiment and interrelatedness. Madeleen's study of constellation work provided a very different access point to understanding interrelatedness and connection than Vixenz's work with flower essences, yet both of these frameworks proved useful in deepening their respective relationships with nature.

Of all of the frameworks mentioned, the most commonly referred to were flower essences and herbalism, permaculture, and mainstream environmentalism and conservation. The permaculture ethos of land management through regenerative agriculture, rewilding and resilience – working with the land rather than against it – inflected Alicia's and Tonton's understanding of the value of a nature connected community. Alicia explains, "It works along with the principle of nature, the permaculture doesn't go against, so we follow what nature wants to be, right? So we are working together, bonded as human beings, but we are also merging into nature." Using a corollary of permaculture's regenerative agriculture, Tonton, frames a nature connected community as one working towards a regenerative human culture:

I think that was the thing that really set me off into the permaculture part, because I had already heard about permaculture from my mother, and I understood that that is one of the best ways we know of to be self-reliant, where you can actually make do with what you have, if you have other people around you who do the same thing.

Tonton views a regenerative human culture as essential to connecting more people to nature and making systemic change. Perhaps most surprisingly, Tonton demonstrated that even the principles of the free software movement could provide an avenue for understanding nature and interrelatedness:

The free software bit, that was really important for my path forward. And actually, through free software people were talking a lot about resilience and I stumbled upon anarchism as a real thing ... and so I started looking into these things and the result is always something closer to nature. ... I think the big click was the free software thing. Because in the end, it's all the same thing. It really boils down to the ability of every person to be free. ... I think that really the only real thing we can be free about is how we live, how we choose to be a part of the puzzle around us.

The presence of all of these frameworks in participants' stories suggests that nature connection and the development of an ecocentric worldview is not an isolated endeavor or limited to one path, but can be approached from a multitude of directions, as seemingly disparate as the free software movement and shamanism.

Deepening Through Crisis

Participants described myriad deepening experiences of nature connection, but four participants mentioned a significant crisis that made them fundamentally question the way they understood themselves or the world around them. This crisis was not identified by participants as a transformation to an ecocentric worldview, but rather a deepening that allowed these individuals to live out that worldview differently. For Petra, the crisis consisted of an ethical conflict that led to reexamination of her career teaching environmental education and conservation,

I worked with a lot of volunteers, specialists in all fields of nature, but specialists here, they would talk about so many interesting things, but then their behavior was so different, and for me seeing that, like behind the screen, all of this, was like "oh my god, this isn't the way, this isn't right. ... And I was very frustrated. So I knew this wasn't the way to

reach people, you know, it's just by mind, not by heart. And I didn't know how to do that.

Witnessing the hypocrisy of environmental specialists who were supposed to be educating others in proenvironmental behavior caused Petra to doubt the validity of her work as an environmental educator. This was even more distressing because she was still committed to the mission of environmental conservation, but she didn't know another way to go about it. After leaving that position, Petra describes a period of depression, but she nevertheless remained committed to searching for another, more effective way to teach people to connect and respect nature. This search ultimately led her to herbalism, wilderness awareness schools, and the Art of Mentoring program: "It was so... life changing, in a way. It's really opened my eyes. ...I thought, this is the way to... make people care about nature with their hearts, not with their minds, you know?" Madeleen's experience of crisis took the form of an acute need to reconnect with herself and live differently. Insights into her sense of disconnection built gradually until addressing them felt a matter of "life or death,"

I felt like something is not working for me, but it is working when I'm in nature. ... Then I really thought "I need to examine, explore all my relations." This felt life or death for me. This was before my burnout even, but I felt like I have to reexamine everything and not automatically adapt anything from outside or how it's perceived through the lens of society, because it's not necessarily working for me. And the biggest thing, it seemed that it was not in alignment with nature. ...And also thinking, 'I don't know' - this came simultaneously – 'I don't know my neighbors, like the weeds. I have a lifelong relationship but I don't even know the name. Isn't that strange?' It just didn't feel right

somehow. But also, my body ‘Where’s my liver? What does my pancreas do all day?’

It’s me, it’s my body and I don’t know. That’s not right.

For Madeleen, reexamination of her relationship to her self, her body, and her environment led to an intention to realign with nature through the study of herbalism. Describing the process of her own deepening crisis, Vixenz says

Since I’ve been on this conscious journey that started with the flower essences, I’ve been able to step outside myself and be that observer looking from the outside and piecing things together and getting that self-understanding through being able to do that. As well as also being, you know, in perhaps on that roller coaster ride, maybe not such a good place somewhere, and knowing that there’s a process and a way out, and also having some self-help tools through the nature connection particularly, that really helped me. So I feel I’ve got a really good solid handle on that now. I know what to do if I start getting out of kilter, I’ve just got to go find a tree or go for walk.

Ultimately, the crises participants experienced facilitated a reinterpretation of the self, and self in relation to the greater world. Participant stories did not suggest that this process led to a new ecocentric perspective. Rather, the crises became opportunities to deepen a latent interest in connecting to nature.

Autoethnographic Reflection

As I reflect on my own winding path towards nature connection, I identify many of the foundational experiences mentioned by participants. I have always had a deep connection with food, and loved picking berries with my grandparents, picking unripe apples from the apple trees in their yard, picking strawberries with my mother and brother and making strawberry jam. And I also loved having adventures in the woods, or the park, or just using my imagination to play

under the large tree that was in the playground of my preschool. These were fully embodied experiences of being enthralled with nature that led me to wanting to understand and be a part of nature. There are countless memories that I could try to recall and stitch together to try to make a picture, but the sum of them probably wouldn't say anything about why I would be interested in consciously cultivating a relationship with the natural world later in life, except that I have always, as far back as I can remember, had a feeling that there is something magical about the natural world and that I want to be a part of it.

The word *magical* can evoke literary fantasy and faeries and escapism, but that's not exactly what I mean. Rather, those elements are all a reflection of the sense that the natural world is a doorway to a realm of deeper meaning and, perhaps, transcendence – a realm that anyone has access to if they are able to be present and open to the natural world around them. I didn't always have a language for this experience, but I knew when I encountered it. While I did not end up studying environmental science, like many of my participants, my interest in and pursuit of these experiences is what led me to study religion and culture, and eventually led to my master's research on pilgrimage performance and identity at Ireland's Croagh Patrick pilgrimage. My road to that research topic began with an embodied experience of deep connection with the mountain when I first encountered it on a trip to Ireland with my mother in 2004. I loved that mountain upon sight and knew I needed to climb its trail pilgrimage. And after having done that, I then knew I needed to return to it and understand how a place could have so much meaning to me and apparently many, many other people over millennia. I knew that this connection had to do with history, culture, spirituality and religion, and sense of place, but years after completing my study I still felt that there was something I hadn't yet captured about my experience of

connection to this place. I had an increasing awareness that I needed to feel that kind of connection more in my daily life, not just at special times or in special places.

And so, before I was introduced to nature connection as a concept and as an organizing principle for culture and community, I had pieces of it in my life: like my participants, I had an interest in being closer to the production of my own food by buying from a local CSA and making my own food as much as possible; an interest in environmental issues and structuring a more sustainable life; creating a spiritual practice that incorporated nature; an interest in creating resilient local communities, particularly through my work in arts and culture. I still didn't have a language for what that connection or experience was, but I knew that more familiar concepts like spirituality, environmentalism, sustainability, and community did not quite capture it.

I did not attend my first Art of Mentoring program with the intention of solving this mystery – I was mostly just curious about it and saw it as a chance to go on a trip to England with my mother and brother. But over the course of a week living in a temporary society that intentionally cultivated all of these elements that had been important to me I began to see how they were all connected – all of these things that I held so dear and didn't know what to do with. All of these things were being addressed through the organizing principle of nature connection, and I realized “this is it. This is what I was looking for.” I had found them in pieces throughout my life but I had not seen their interrelatedness. When I saw them all together it seemed very familiar, but at the same time was a totally new framework, a framework that made perfect sense when seen as a whole: Our relationship to the world around us – natural and otherwise - is a foundation for how we live and make meaning. Once having this realization, the next step was to consider how to make that relationship as fulfilling as possible, for the individual and the whole. That process would require me to carefully consider my relationship to the place where I live.

Growing Connection to Place

Feeling connected to a particular place or ecology has been identified as an important element in supporting ongoing proenvironmental behavior and an ecocentric worldview (Beery & Wolf-Watz, 2014; Schultz, 2001, 2002; Vaske & Kobrin, 2001), so it is important to understand how that connection is formed and experienced. In addition to questions about their experiences developing connectedness to nature, participants were asked “How has nature connection or being involved in a nature connection community affected your personal feeling of connection to the land where you live?” Their responses illustrated multiple ways of understanding their relationship to the land they inhabited, but a common thread was a deep desire to cultivate a sense of belonging to that land and feel part of a community.

Articulating Indigeneities. Participants had a variety of ways of thinking of their relationship to the land they inhabit, or what Plotkin (2013) refers to as terra, ecological, and cultural indigeneities. For all the participants, terra indigeneity, or a sense of belonging to nature or the earth, appeared in their stories of nature experiences that ranged from the local to the far-flung. These experiences could happen anywhere that one attended to their natural, or perhaps even unnatural environment. Stories that addressed a sense of indigeneity tied to a specific ecological place and culture revealed the diversity of ways participants understood how they belonged to place or culture. For Alicia, her relationship to ecological and cultural indigeneity was characterized by a deep sense of loss of her ties to an ancestral land,

I don't have this identity attached to land. It's actually my suffering as well, actually. ...because I am so envious about people who have such a strong sense of peace and stability on land in Japan, in countryside especially. Because they grew up there and they may have left but they come back. Yeah? So they are on ancestor's land and they feel so

happy because they've come back, and I don't have that. ... because I don't have this identity from the beginning, I'm almost feeling like I'm a nomad, you know? Because I don't have this initial initiation, or, I don't know, a blueprint? Or the birthmark of this memory that I belong here. So anywhere I go can be that place, but I still can feel like "Where's my home? Where's my home?", you know? And it continues, and had I had that land, of course, I would probably, definitely consider like I would go back to this land, because this is the place. But the lack of that sense always made me float around. I feel like searching for a home, you know. ... it's kind of ungrounding, not to have this identity.

Like many people today, Alicia was raised in a city and her family consider themselves city people after living in an urban environment for several generations. While she acknowledges the opportunities her disconnection from an ancestral allows – belonging to no place in particular, she could belong anywhere – she suggests that such belonging is qualitatively different from the belonging experienced by people who have lived in one place for multiple generations.

Yet even those participants who had a multi-generational connection to the place where they lived could not take ecological or cultural indigeneity for granted. Petra, for instance, explains that despite growing up on a farm with an awareness of her ancestral ties to the region, she feels the need to cultivate a further sense of belonging:

I can say my family and my ancestors for so many generations have all come from this area, and we didn't move a lot, so a lot of people here know our family or are part of our family. But I never felt like I belonged here. I always felt like a stranger. And being consciously aware, being conscious with your nature connection – if I do that consciously – I see that I also am trying to find a place here, that I belong here, that this is my home.

Yeah, I think it's very important, finding roots. But for me it's a process that is still ongoing. It's not completed yet.

In Petra's search for "roots," it is not enough to know that there is a historical connection between herself, her family, and the land. A true sense of belonging requires ongoing and intentional work to intentionally connect with that place. She does this most directly through the garden she grows and the land she tends. Like Petra, Madeleen's ancestors had lived in the same region for many generations. But unlike Petra's experience, knowledge of her family's historical association with the Lowlands of Holland was an access point for Madeleen to cultivate a deeper sense of ecological and cultural identity:

So for example my mother's line ...there has been an intense relationship with the sea, ... because they lived for generations and generations on this peninsula land, very near the sea, having to do with all these things, including floodings – has changed my relationship with, the meaning I give my relationship with water and the sea. The theme of feeling carried or flooded feels active here. The harbor city where I live and was born is called Rotterdam, surroundings of my father's ancestors. A dammed river named Rotte. In fact the theme of my birth country, Lowlands being surrounded by dikes. My father's ancestors and I have mostly lived beneath sea level and I feel that in my bones now. How do I address whatever 'high water' or 'creating land to live on' mean to me? I closely relate to this land as I can feel it speaking to me, as a personal and ancestral myth.

Despite living in a city and a region that has been altered for centuries by human intervention, Madeleen has been able to cultivate a sense of belonging the place – the land and the water – through connecting to her family history in that landscape.

Other participants' experiences suggested that ecological indigeneity did not need to be tied to their personal ancestry, but instead could be founded on a broader sense of belonging to land that resonates with them:

Vixenz: When I first arrived in New Zealand, I just felt this deep sense of connection to the land. It was like, 'I've been here before' connection. And particularly when I came to this island where I live now, it was just like every cell in my body recognized it as home. And it still does. ... So when you talk about indigeneity there's a part of me that's always recognized Maori in a way that is so familiar and their worldview and their way of doing things. ... that part of my life that felt disconnected has been healed through my being here [in New Zealand] and through my connecting with Maori and healing that part of my indigenous self has given me a sense of indigeneity when I go back to the UK now.

Despite never having been to New Zealand before, Vixenz was struck by a tangible sense of connection to that place which she deepened through respectful study of ecologically and culturally indigenous practices. Interestingly, she describes a process of cultivating indigeneity that is at once grounded in a specific place and culture, but is then transferable, allowing her to connect more deeply with the land in which she was raised. The diverse experiences of participants illustrated that there was not a single process of developing a sense of ecological and cultural indigeneity, but that they all made meaning of their present relationship to their home through a combination of understanding ancestral history and an intentional engagement with the land to cultivate a sense of belonging.

Cultivating Belonging. While participants did not articulate any particular theory of belonging to place, such as rewilding or reindigenization, their responses were consistent with Plotkin's (2013) model of indigeneity and his 2008 description of the developmental process of

finding one's ecological niche. Having established a sense of terra indigeneity, as demonstrated by their high NR scores, participants were now working on developing ecological and cultural indigeneities, which they often articulated as cultivating a sense of belonging to a place and a community. Belonging was not a quality that could be inherited, but it could be cultivated, as Tonton describes, "I think that's really important, to have roots. ... Like, roots, both to the land, but also to the people. Maybe roots is a nice term for connection and relationship, because roots grow." For Madeleen, intentionally connecting to the nature of the place where she lived was pivotal in her journey to belong:

It's the pull to belong. I felt in this search I really wanted to belong. Feeling my place not indifferent, interchangeable, unpersonal, but with deep intimacy and meaning. This renewal of orientation...[Nature connection], it's changed everything. From my relationship to the place where I live, my [garden] allotment, and to the broader, to the biggest zoom-out perspective that you can possibly have.

Madeleen describes becoming acquainted with the plants of her garden allotment, as well as the common weeds she encounters every day in the city, and slowly building an awareness of the myriad beings with whom she cohabitates and who make up her world. Gradually this awareness extended to an understanding of the ways she is connected with world around her, and that she, too, belongs to her own place in a web of interconnection.

Recognizing the loss of ecological and cultural indigeneity in the community where he lives, Matt saw building "connection to place" as a means of rebuilding important cultural and ecological "links" that have been lost:

For me, the concept of indigenous feels so distant. In England, ... there's definitely a dampening down of connection to nature because we've lost those cultural links... So,

it's a difficult one for me personally to feel like I can understand in some way. But I think that, talking about a slightly different concept, which is connection to place. ... I suppose, recognizing the value in being in a local place and staying there for a period of time and having a history in one's life of being in a physical location where you can get to know the trees and cultivate this kind of familiarity with the natural space, and trees really being a key part of that process. But to just the land in general and how the land changes over time.

Matt describes a process of building connection to place that requires time and careful attention, but Chiara points out that connection that leads to belonging requires reciprocity, as well:

What I definitely feel is that the land is nourishing us and that we nourish the land. And it's really a reciprocal tending that we do to each other, land and us. ... So there is this part that makes us being in conversation continuously with the land, and *that*, I think, is even more than having a place that is ancestral or something like this.

Participant stories illustrate that the process of building ecological indigeneity and a sense of belonging to place is a process that requires time, intentional awareness, and the development of reciprocal relationships.

Autoethnographic Reflection. At the start of this study, I grappled with the idea of indigeneity and whether it was an experience that was possible for anyone other than those who have been rooted to a place all their life, and possibly for many generations. Like Alicia, I felt the loss of an ancestral land that I could never know or claim. Because I have lived my entire life moving from place to place, feeling a sense of belonging to a particular place has been something that I have deeply wanted while maintaining a skepticism that it was possible. Yet,

like Vixenz, I had also experienced the surprisingly fast formation of connection with places upon first meeting them.

One such occurrence was when I was traveling with my mother in Ireland and I visited the holy mountain Croagh Patrick. We were driving south along the west coast of Ireland with reservations to stay in Galway that night, several hours away. I had read briefly about Croagh Patrick in a guidebook, and something intrigued me enough to insist that the site should be on our itinerary. But the grey skies were ominous that day, and as we approached the mountain, its summit shrouded in low rainclouds, it became clear that it was not a day to hike. I was devastated, and surprised myself with the depth of my feeling, considering I had no real relationship to this mountain, or so I thought. I simply knew that I needed to climb that mountain and be in that place. My mother, surprised at my insistence, agreed to forgo our day in Galway and return the next day to try the mountain again. I was relieved and grateful when the sky was clear the following morning as we drove the hours back from Galway to Croagh Patrick. As we made the steep and arduous ascent, that mountain and its surrounding landscape struck something in me that felt at once familiar and otherworldly, beginning a relationship with that specific place, and with the British Isles which has continued to this day. I have returned four times to Croagh Patrick over the intervening years to study the history and culture of the pilgrimage and landscape, and this study has deepened my relationship to the place and my own family's history of relationship to that part of the world. But the initial call to connect with Croagh Patrick was not rooted in an intellectual understanding of the mountain or any ancestral ties to the region – it was first felt as a resonating connection with place.

Like many, if not most humans today, I am the product of generations of migrating peoples. At the start of this study, I kept returning to the ecological question: how long must a

species inhabit a region before it can be considered indigenous to that region? As I began the interviewing process, the experiences and insights that were shared with me made me aware of the assumptions shaping my questions and led me to reshape them throughout the process (Cranton, 2006; Mezirow, 1991; Moyer, Sinclair, & Diduck, 2014). I came to wonder whether the more relevant question was how long before a species considers *itself* indigenous or native to a place? Then, more specifically, how long does it take for a species' pattern of living to be thoroughly shaped by the ecology of that specific place so that it lives in reciprocity with its ecological environment? Finally, I came to realize that I had held an assumption that time was central to cultivating connection and ecological indigeneity. Through my conversations with participants, I found I was engaging in my own transformative learning process as my assumptions were challenged and my thinking about my own ecological indigeneity began to change.

Another assumption that I confronted was that physical proximity was foundational for the emergence of a nature-connected culture or community. Despite my lived experience of being a part of a dispersed and virtual community of nature-connected people, I had imagined that my participants must be involved in communities of like-minded people where they lived and that these were even more valuable. I was surprised to learn that this was not always the case, and that online or dispersed communities played a significant part in many participants' nature connection social network and development. This research has only begun to touch on what constitutes a nature connected culture, how it facilitates learning nature connection, and the process of such a culture's emergence. To better understand the cultural elements of this phenomenon it will be necessary to use ethnographic approaches not possible for this study, such as ethnographic research of immersive nature connection programs like Art of Mentoring or

Anake, community-based permaculture farms, or communities of parents whose children attend forest kindergartens. But attention should also be paid to online communities who are engaging in nature connection practices, as well. As we have seen during the pandemic, online communities continue to grow in their importance and their familiarity as they provide greater access to like-minded people and greater exposure to fields of interest. These virtual communities and venues will likely play an increasingly large role in learning to become connected to one's unique ecological environment.

Indeed, it was in my own virtual nature-connected community that arose from my AOM experience in England that another element of transformative learning was helping me to deepen my own nature connection practice: discourse. In a conversation with Tonton, he reminded me of a quote, "We are the land. Outsiders are often disconnected, therefore destructive. The land needs us to be connected so we prepare and protect and care." He explained, "It's much easier for me to muddy the water somewhere that is not my home. But if I know that I am going to be drinking that water, then I wouldn't muddy it." After our conversation, I thought back to the beginning of the summer when I had been weeding in my garden and unknowingly ripped up a poison ivy plant that had taken up residence among some bushes. Over the following week the skin on my hands, arms, and legs reacted so extremely to the defensive oils of the plant that I needed a steroid to manage the pain. In the interminable days that followed, I was so angry at that plant that I was determined to get rid of all the overgrowth from the abandoned house next door so that I never had to endure such discomfort again. I bought Round up weed killer and readied myself for attack. The unused Round-up still sits in my garage today, eight months later. Despite my pain and anger, I found that I couldn't bring myself to introduce glyphosate on my land and into the community's groundwater. This controversial chemical found in Round-up has

been linked to human, wildlife, and ecosystem health risks, and while its common enough that it is likely that it has already been used on my property and throughout my town, I found I couldn't use it myself knowing its potential negative effects. This was my small attempt not to "muddy the water" and to "protect and care." My conversation with Tonton led me to the realization that such decisions say more about one's relationship to the land than the length of time they have lived there. This insight was a small step over the divide between seeing myself as an outsider and belonging to this place.

Theme 3: Transforming Through an Ecocentric Worldview

The aim of this study was not to map participants' experiences learning nature connection to a particular model of transformative learning nor was it to determine whether a transformation to an ecocentric perspective had taken place. Rather, the aim was to identify the transformative dimensions of learning to be more connected to nature and understand how these dimensions play a role in the development of an ecocentric worldview. This study identified findings that illuminate the transformative learning dimensions of learning nature connection. These have been divided into four major themes: developing an ecocentric worldview as a process; integrating and orienting through communal events; recognizing spirituality in learning an ecocentric view; and mentoring with nature connection.

For all of the participants, development of an ecocentric worldview was described as an ongoing process that has its roots in childhood and continues on to the present. Participant stories also revealed that communal events frequently served as important learning experiences that affected the trajectory of their development of nature connection. Rather than acting as disorienting dilemmas (Mezirow 1991, 2006; Mezirow & Associates, 2000), these experiences were described as orienting and integrating and allowed participants to enter more deeply into

the ecocentric perspective they were developing. Yet the goal of transformative learning is not only to foster a perspective change, but to then take action based on that perspective (Baumgartner, 2012; Cranton & Taylor, 2012; Mezirow 1991, 2006; Mezirow & Associates, 2000). Providing the necessary foundation for taking action in the world, spirituality emerged as integral to how participants understood their relationship to the world and themselves. Finally, participants' ongoing development of an ecocentric worldview was enacted through their pedagogical approaches and their understanding of their role as activists.

Developing an Ecocentric Worldview as a Process

As noted earlier, participants traced the beginning of the development of their connection to nature to their childhood, providing a foundation for an ecocentric worldview that continued to develop through experiences such as academic study, farming and gardening, personal crises, and exposure to other knowledge frameworks of interrelatedness. At this present point in their lives, the participants are all now highly nature related (as demonstrated by their scores using Nisbet et al.'s (2009) Nature Relatedness survey) and exhibit an ecocentric worldview. But this is not to say that once developed, an ecocentric worldview is fixed. Participants described the development of their connection to nature as gradual, evolving over time, and ongoing:

Petra: I think, my insights have changed a lot of times, I think. But in like a spectacular way that I remember? No. I think by little things, by... no, I can't pinpoint, no. But I do feel that it has changed.

While Petra's account of her nature connection journey does identify major moments of insight, such as personal crisis or attending an Art of Mentoring program, she emphasizes that there was no point when her perspective definitely shifted from one worldview to another. In fact, her account suggests that elements of an ecocentric worldview had been present from a young age,

taking shape over many years and accumulated experiences. Madeleen's account echoes this quiet, incremental development:

It took me quite some time. Yeah, just the realizations, like sitting in the train, looking outside, seeing a tree and having the first association is "holiday" and then I thought, "Something is really wrong if I see nature and I think 'holiday.'" ... So I can't really pinpoint like "that's when that happened" or "that's when that happened."

Others described growing a connection to nature and an ecocentric worldview as an accumulation of notable insights, but none more important than another in the shaping of their perspective:

Matt: I think there's been many moments like that. I don't think that there's one pivotal moment. I think that there have been many of those moments, and they've come at different points in my life, and the reason they've come about has been very much for that particular time in my life, so they're all quite different, I suppose. So, I wouldn't want to try and group them all together into one.

Participants' stories about their journeys toward nature connection illustrated that the process of making new meaning of past experiences was not only gradual but expected to continue well into the future. Additionally, none of the participants claimed to have reached a set perspective, nor that they had at last identified the "correct" perspective. For everyone, their understanding and appreciation of their connection to nature had room to grow.

Integrating and Orienting Through Communal Events

Participants in this study had already begun to develop an ecocentric view before attending the communal events that inspired integrating and orienting experiences. This

worldview stimulated their intention to pursue personal nature connection practices and helped them make meaning out of these practices and ultimately of their experiences of the communal events. When asked about pivotal moments along their paths developing nature connection, a major theme emerged around the crucial role communal events played as integrating and orienting experiences. While some participants also mentioned a crisis or disorienting experience that led them to understand their relationship to nature in a different way, these communal experiences were described as orienting and integrative:

Vixenz: It was like an alternative festival for kind of hippies I suppose! And people who wanted to live... alternative lifestyles. And it was my first experience of really doing anything like that, so that was back in 1986, I had only been in New Zealand a few months. I heard about it and I thought "I've got to go to this place." And I remember driving down into a valley, it was in this beautiful hidden valley by a river. And it was like going into another world, like there was something even spiritual. It was just like going into this liminality, and I felt it and I knew it and I experienced it, and that was when things really started changing and shifting for me. And that was I met [my flower essences teacher]. I think that was where I really got this sense of spiritual connection with land and nature and the magic, you know, that magic at a much deeper level than just going to a beautiful place and seeing a lot of wildlife and going 'Wow, this is a amazing.' It was deeper than that. And I remember that really clearly. And it's like, everything looked different, everything had another quality about it. It was richer. It was like 'I'm home', it was like entering a dream. Kind of like heaven, do you know what I mean? It was like heaven on earth, it was like this is utopia, this could be how we, this is how we're meant to live. With this richness, this other sense of awe and wonder and

magic in every moment and purpose and connection and unity, and all of those things, it was all present there. And it was my first actual taste of it. In nature. ... I guess before I had experienced all those different aspects, but not all together in one dream. It was like everything coming together. 'Yes, this is it.'

Vixenz rich description of her visit to an alternative festival highlights the shift in perspective that is taking place for her on multiple levels. Here she is able to see things differently and this change in perception allows her to envision a new way of life, yet one that feels familiar, like "home." But Vixenz clarifies that this experience is not a shift in perspective, but rather a clarification of perspective, when she emphasizes that she had experienced different elements individually, but this event allowed her to integrate various concepts and gain new meaning from them.

Other participants described similar experiences when attending Art of Mentoring nature connection programs. For Tonton, being a part of an intentional village for a week allowed him to shift his mode of being in the world to one that felt more effortlessly connected and integrated with his social and ecological environment:

In Falkland [at Art of Mentoring] I think it only took like forty minutes or something, like everything was there, it just clicks, you know? And suddenly you're sort of just present, and everything is just, most things are suddenly just working. ... Socially and culturally, I mean, everything is just there.

For Petra, living as part of a community that infused cultural practices like music, dance, and ritual with nature connection allowed her to understand the importance of connecting with people in her journey of developing a relationship with nature:

The community, the music is very important, I think so. And then the timelessness, and the structure that doesn't feel like structure. You know, like there was a hearth fire, there was a village to hold you, and I think that was very important to have, too. ... After the [Art of Mentoring], I just really had this insight that you can't do anything alone as people, as a person, it's so important to have the connection to other people, and that was something that I had no idea, never, that it was so important.

Madeleen's experiences attending week-long nature connection programs helped her to envision how her desire to live a more thriving life could be actualized by changes in her lifestyle:

Going to the Art of Mentoring [has] been a huge help in... getting a visceral sense of what life feels like thriving. It has informed my body and consciousness deeply that thriving life is actually possible. Not "just a child's dream". Feeling effortlessly light, happy, safe, open, in full connection with others and nature. And from that space feeling how my passion and love for life and all living beings lights up. That in turn sparks creativity and inspiration to contribute in my own unique way. Life feels right there, like how it's designed to be. I felt my inner child standing up and responding with "Why can't we stay here?! Why can't we just live here? It just makes no sense to go back!" Having this experience in a small society that acknowledges that feeling, and nourishes that creates inner strengthening to go back and transform life in other places to this thrive setting.

These communal events appeared to be so potent because they were an opportunity to see concepts in action and enact those concepts of nature connection within community:

Matt: The really simple concept of Art of Mentoring being around nature connection, community connection, individual connection with one's self. Those three elements all

working within the same kind of thing, as a concept. It was a really important moment for me to see that and see that spoken and see that taught and demonstrated. It was a unifying of a lot of different things that felt separate for me. And then it's like "Oh!" they all come together and then here we go. Things suddenly make a lot more sense. Or, at least, like the path and the journey forwards kind of makes a bit more sense, for me.

And as Chiara points out, communal events that take place outside of ordinary life allow time and space to reflect on one's life and develop new insights:

Going to [Anake, a year-long wilderness awareness school] helped putting pieces into place, into "Ok, everything now makes sense." I don't know how to explain better. And so it made more clear certain path I had in my life, where they were going and what I was doing there, and made clear that certain cycles were finished and I needed that cycle for that. And I had this experience because it was helpful for something else, and so on and so forth. So it made a sort of 'ahhh [sighs]' in the way of what am I doing, where am I going.

For participants, communal events offered opportunities to deepen their connection to nature and their ecocentric worldview through the exposure to new ideas and practices, but more significantly, these events provided a space where concepts could be integrated, suddenly "making sense" or "coming together." These experiences were a sense of coming "home" to alternative ways of being in the world that participants found more satisfying.

Recognizing Spirituality in Learning an Ecocentric Worldview

One element of ecocentric worldview that Nisbet et al.'s (2009) Nature Relatedness Scale did not address was the role of spirituality. Without prompting, all but one participant mentioned the importance of some spiritual element in their relationship to nature. Only one participant

mentioned any formal religion having influenced her connection with nature (Alicia was exposed to Shintoism by her grandmother and practices meditation as a part of her nature connection practice). For Petra and Madeleen, spirituality manifested as a sense of belonging to the grander scheme of things. Petra explains, “I think a bit of spirituality is a part of it. ... It’s like, “We’re all in this together” that kind of sense. I think that’s a big part of it.” Madeleen articulates a similar sentiment when she discusses the sacred aspect of nature:

Maybe I did address it, but it’s really... the word “sacredness” comes up as not being mentioned enough, I think. That relationship to life, so also to nature, is really sacred. I experience this as a deep intimacy. We’re sort of part of something that’s bigger than us. Something we can’t figure out. I think that is something that has been lost. This sense of mystery that’s really, really precious. ... For me, this topic is the realization that talking about it will only point at it, it won’t grasp it. That’s the sacredness. And also the hesitation that I felt, that it got boxed in, because it’s so big that it can’t be grasped, what we’re diving into. You can only point at it, really.

This sense of connection to something much greater was passionately articulated by Alicia as being central to recognizing our connection with nature,

I think it’s so important that people don’t only remember by mind, the name of plants or the behavior of plants by knowledge, but really deep, like to cultivate this deep feeling of this connection with nature. It doesn’t come through mind but it comes almost through one’s soul, you know? This yearning to be one with nature. Like if it is here [point to heart] it’s also about deep devotion, almost, devotion, like beyond respect, it’s like... I surrender to you. So the nature related religion is always about that, like “I surrender to you, mother earth... We serve you in the best way we can.” So kind of really humble and

really passionate. This yearning to be one with nature, or surrender to nature, I think it's so important in this modern age where nature is seen as a resource, and numbers, and figures, and categories... and not more like personal and ... yeah the possibility is almost philosophical or spiritual part of connection. ..., I feel that's the key to keeping the connection, so I wanted to say that.

Participants also associated spirituality with the sense of trust they had developed through connecting with nature. Chiara articulates this sense of trust as paradoxical, acknowledging that there is pain, destruction, and injustice in life, yet, on a higher level, all is well:

So I think it's a sort of circle and different parts, the self-awareness, the connection with nature, in different moments or in different states are helping you in coming back to this center place where basically everything is possible and all is ok. Internally all is ok. Even in the worst situation you could happen, you know you're going to die, but everything is ok. Or you're losing a dear friend, your kids, I don't know, think of the worst thing possible – yes, the world is going bad, yes, but it's ok. In a way, even when it's not ok, there is a sense of peace, a sense of something else.

As Madeleen points out, the role of spirituality is often neglected in discussions of conventional environmentalism and nature relatedness (Zylstra et al., 2014), but participant stories demonstrate that some form of spirituality has contributed to their perspective that the world is wholly animated and is an interrelated complex system (key elements of an ecocentric worldview). Additionally, participants' growing realization of the world as interconnected was often accompanied by an engagement in soul work (Dirkx, 1997, 2001, 2012), or learning to make sense of the “outward expressions of our inner selves” (Dirkx, 2012, p. 116). Chiara describes this process as a cycle:

So I think it's a sort of circle and different parts, the self-awareness, the connection with nature, in different moment or in different states are helping you in coming back to this center place where basically everything is possible and all is ok. Internally, all is ok.

For Vixenz, her work with flower essences was both spiritual in the way it illuminated interconnectedness, and instructive in the understanding it provided of how her inner experiences interrelated and interacted with the outside world:

My journey with the flower essences opened a whole lot of self-understanding to me. It sparked my curiosity, so I went and learned a whole lot more about how things are connected... why we do the things we do and... and saw that in myself. So it sort of took me on that inner journey of piecing things together, of what happened and why. How my decisions influenced what happened next, and that sort of stuff. So consciously I went on a journey with that. ... Since I've been on this conscious journey that started with the flower essences, I've been able to step outside myself and be that observer looking from the outside and piecing things together and getting that self-understanding through being able to do that.

And through a spiritual understanding of her interconnection with the world around her, Petra came to recognize own value in a new way:

I think self-acceptance is an important part of it, yeah. Just knowing that you are a part of everything, so whether you are, whatever you are, whatever you look like, whether you... It's good, it's fine, because you're part of it.

Participant stories highlight how spirituality, based on a trust in a grand cosmic scheme of interrelatedness, is not an optional component of an ecocentric worldview, but is in

fact foundational to the way participants understand themselves and the world around them. This spiritual understanding of the world has prompted them to engage in self-reflection that directly impacts the ways they choose to act within the world. Such soul work, Dirkx (2012) argues, is a prerequisite for the deep and lasting societal change that transformative learning aims for.

Enacting an Ecocentric Worldview. As educators and mentors, participants identified a number of ways that their deepening relationship with nature had impacted their teaching practices. The themes of space-holding, modeling, questioning, and self-awareness intertwined with one another throughout participant accounts. Most participants mentioned the importance of facilitating learner exploration through space-holding or creating an open environment to learn through exploration. Vixenz describes an increasing awareness of the need to make space for the past experiences learners bring with them and to focus less on directing people in their learning but instead, helping them to direct themselves:

It's related to this healing the inner child stuff and giving other people permission to be curious and to go and follow those childhood, inner urges or even adult inner urges. And about asking the right questions, and I'm learning how to do that, because part of me is still stuck in that old paradigm of wanting to feed information in or give people tools. And I'm learning still, all the time, I've got to try to take that hat off, but use that knowledge in a way that helps people go there themselves. And it's around asking the right questions, or listening carefully to the questions that they're asking and sending them on their own journey with that.

Echoing Vixenz, Tonton emphasizes the importance of facilitating learning through open questioning as a way to pique student curiosity and internal motivation to learn:

That's one of the things that I've learned through the nature connection journey, that if we facilitate, if we put things in place and make it easy, people soak up everything. But if I tell them "Oh, 2 plus 2 is 4" no one is going to pay attention, because that's not interesting. If people, I don't know, see a flower and ask what it is, it doesn't matter if I have an answer, that's their learning. ... No answers, only questions. And I think that's the only way to start the curiosity that we need for proper learning.

Modeling awe and wonder of the natural world was another valuable practice mentioned by participants:

Alicia: The wonder develops capacity, I guess naturally or organically. ... bringing awe goes to the approach to mentoring in my case as well. It's like, contagious... joy or wonder is contagious, like suddenly watching nature like "huh...[looks bored]" and then suddenly I bring this "Wow! Look at that!" and the kids are like "Yeah! That's amazing!" So the way I practice definitely is related to what I can give. Of course, I can only give what I deeply practice.

Not only does the modeled enthusiasm inspire similar enthusiasm in students, but it reactivates a sense of passion and curiosity on the part of the educator.

As participants modeled the exploratory learning they were trying to encourage, they also modeled a comfort with the uncertainty of that process. Madeleen explains the shift in her approach to teaching required her to think differently about the goal of her teaching and to appreciate that the most valuable learning may be different for each individual:

Just live how you live and ask questions, just really this approach that everybody will find out for themselves. Nobody needs to be saved or anything. They just need a holding space and this resonance body that isn't freaking out but is actually resonating... "you

have a regulated system in you, and you will figure it out, and I'm here to hold you in that." So it's more of a space-holding, I think, and a modeling rather than sort of a doing-teaching.

In order to hold space for learners and model effectively, it is necessary to have a keen awareness of oneself and the learning environment. Chiara learned to apply to mentoring the awareness skills she developed through attending to her natural environment:

The nature connection helped me, definitely, of being more in tune with what needs to be done and having the faith that I can pull out and sense what needs to be done...So you find those antennas and then those antennas can distinguish what is your need and what is the need of the group at that point. And then you tune into one or the other according to what you are doing.

She found that attention to one's environment is not only useful when tracking an animal or gauging the impact of how one tends one's land, but such attention is also applicable to responding to student needs and interests in the moment in order to facilitate effective learning.

Madeleen describes this process in more detail:

I feel what is happening in my body when somebody talks, or feel what's happening in a group, and not respond solely to the head things that are going, to the symptom level of it, responding also to what's underneath. Welcoming them, making sure they feel safe. And then directing the energies first to actually becoming present with what's here, what's now. Like for example the gratitude practice, but it could be something else, as well. Just to take us out of this head space and bring us in the present moment and into what's around us in relation to what's actually here. So that's one piece. ...It's actually a new education system for me. I'd notice in my teaching before, especially when I still taught

children, I struggled more, I couldn't integrate the base of it in myself, to not tell them but let them experience things for themselves as an alternative to my own tell and reply programming. That wasn't anchored or embodied yet.

Here the importance of educators engaging in soul work becomes clear, as Madeleen illustrates the need to integrate the qualities she wants to teach within herself before she can enact them in the learning setting.

Participants presented space holding, modeling, and questioning as preferable alternatives to "knowledge dumping" or advocating for a "right way" to understand a concept or experience. More important was assisting learners in making their own meaning. As an outdoor programs instructor, the ideal process of learning looked to Matt like opening up to other ways of seeing the world, as opposed to being directed to a particular view:

I don't think that I would say that I would want to lead anybody towards a particular type of consciousness, I would say that I would like to facilitate people in leading themselves to different form of consciousness. Because, it's not... what I'm not aiming to do is to kind of try and change or control the way people think, but it's about People wanting to or being open to changing the way they think. And doing that for themselves. It's important, it's kind of like awakening every person.

In contrast to the urgency and frustration of her work in environmental advocacy, Petra's teaching approach in her environmental science classroom took the form of patience and trust in her students' ability to come to their own conclusions:

Asking them the right questions so they will think for themselves and will come to the conclusions that they need to come to for themselves, is very important. If you get people to come to the conclusion, whatever it is that they have to come to, themselves, and feel it

for themselves, then it's much easier for them to act in the right way. ... So I think if you just give them something and then let them explore more from their heart out, like "I want to learn. I want to know." And so, this seed is planted and then it will find its own way to the light that it needs to go to. It's like "just come to your own conclusion and find your own way." And I think people are very creative, and if I see my students, they are so talented and there are so many different skills. They can come to a conclusion or an insight that I don't have, but that's so much better than the things that I know. ... It's just let everybody find out their own right way on their own, with their own skills and with their own background, and ... just let them find their own right way and then they create a new society.

Most participants acknowledged a tension between allowing learners the freedom to make meaning while at the same time achieving content-based goals outlined by a specific educational program. However, they still recognized the value of at least attempting to incorporate these practices into their roles as educators and were committed to finding a way to do so. In fact, these connected teaching practices were central to the way they understood their roles as activists.

Rewilding Activism as Mentors

An important aspect of all of the participants' educative practices was to affect positive change in the world and to inspire an ecological consciousness among learners. In this sense, they identified as activists. Yet, and perhaps surprisingly, the majority of participants did not see traditional activism, such as protesting, as useful or compatible with what they considered to be their role as an individual or an educator.

The concept of activism evoked strong feelings from all participants, but interpretations of the term varied from a general commitment to improve the world to participating in organized activist movements with official doctrines and methods. At first glance, this disparity in responses suggested that participants had widely different views about the value of activism in their work, but through discussion it became clear that they generally agreed that activism was central to their work as educators and was grounded in living out one's own beliefs. When first asked about the role of activism in her teaching, Chiara responded, "I don't think it's my part. I think I have a different role to do." However, she went on to explain:

I never really participated in any strong activism, but I've always been an activist in the sense of being ready to do extreme, or a bit of weird or extreme action or choices in my life, for not proving, but for the sake of what I believed in.

Similarly, Madeleen at first rejected the identity of activist, but then clarified that her role as a writer is how she lives out her activism:

I think everyone comes in as a consciousness with a different role, and mine is not to be an activist, in that sense. Maybe you could say that writing new myths that are aligned with the abundant integral design of life, of nature, is a form of activism. The stories we hold have a lot of power, they form belief systems. A lot of the current leading stories about talk about survival of the fittest, exclusion, unsafety, suppression and we can see what these building blocks create. ... For me, I come from a place that "all is well" ... If I come from a place of anger, or a place of stress and anxiety, that's playing in those energies. So for me it's always the most important thing, "Where am I coming from? And is that in line with what I want to create?"

Madeleen highlights activism's connotation of aggression and antagonism that several participants found counterproductive when working towards change. As Petra explains,

When I think of activism, it just feels like “you have to do this, you have to do that, you’re not allowed to do that...” That’s not the way that works, in my opinion. Let them discover for themselves and hope for the best! That’s maybe not the most active way, but... I don’t know, in my experience it’s the only thing that works for now, that I’ve noticed.

Rather than prescribing right actions or trying to convince her students to see the world as she does, Petra sees her activist role as one of providing informative experiences that allow learners to “come to their own conclusions.” Conclusions that may be quite different from those she expects, but which will have more meaning to learners as they are based on their own reasoning processes. Participants seemed to agree that the most effective way of promoting ecological consciousness through their teaching practice was to provide learners with opportunities to connect with themselves and the natural world around them, and to then allow them the space to make meaning about these experiences for themselves.

Consequently, the form of activism participants most identified with took place on a small scale, especially locally. As Tonton explains,

I actually don’t think activism is particularly useful. ...Nonviolent direct action is the only thing that really makes a change, is the only thing that has a possibility. ...It’s much better to build the world that we want to see. ...I see the work I do here at the farm and especially the work that I do with the permaculture, as much more important.

Just as Petra came to doubt the effectiveness of traditional environmental activism’s approach of preaching right behavior, which could lead to hypocrisy, Tonton argues that the only change we

can control is within our immediate sphere of action. By living and teaching according to one's principles, these educators offer a model for living according to an ecocentric worldview to others who are interested. But perhaps more importantly, as each individual node in the system puts energy into individual transformation, eventually the entire system will transform.

Autoethnographic Reflection

As an ultimate goal of transformative learning is to bring about a change in worldview that leads to action (Ettling, 2012; Mezirow, 2006; Mezirow & Associates, 2000; Mezirow et al., 2009; O'Sullivan, 1999; 2012; O'Sullivan et al., 2002; Taylor, 1994), it is only appropriate that I end with some reflection on how this research has impacted how I think about my own practice as an adult educator. For the past several years I have tried to find ways to incorporate nature connection into the community college courses that I teach in New York City with the goal of helping students become aware of the natural environment around them and their relationship with it. In this heavily urban environment, nature is easily overlooked, and for many of my students, New York is not the place they consider their home so their relationship to it is tenuous. It has therefore been a challenge to find ways to foster and examine a connection to place in the classroom and my experiments doing so were interesting but never quite hit the mark. My conversations with participants gave me new perspectives on not only what I was trying to do as an educator but how I might accomplish it. Madeleen's insight that nature connection may be more about a relationship to life, rather than an idea of nature – "not to feel connected to the thing, but to the being" – and Vixenz's perspective that connecting to nature is really about restoring right relationship, helped me to better articulate what it was that I was hoping to facilitate among my students.

While there are benefits to helping students to understand the socio-ecological history of the place they live and to be aware of the other species that inhabit that place with them, perhaps more important is an awareness of the place they hold in the web of beings and that their actions will always have an effect on the world around them, for good or ill, therefore it is necessary to take responsibility for them. This adjustment in my intention is subtle, but it has likewise guided me towards a subtler approach to teaching about connection that emphasizes relationship rather than ecology. When I first began to teach towards an ecological consciousness I created writing assignments that asked students to articulate their relationship to their natural environment. I quickly learned that many students had lived their entire lives in an urban environment and had trouble identifying the natural elements of the city and feeling a connection with them. While I flattered myself to think that I was introducing students to a new way of seeing their city, it seemed that for many their discomfort with nature presented too great a barrier to overcome in a single semester. For many, this ultimately led to frustration and disengagement from the class.

My courses now feature topics and issues that students can more easily see as impacting their lives, like addressing food deserts in urban neighborhoods through community gardens and ecological injustice within city limits. These topics also highlight their ability, and their responsibility to understand the issues their communities face and form their own reasoned opinions about them. My hope is that by having students consider these issues in the classroom they will be more aware of them in their personal lives, feel a sense of responsibility, and ultimately, a sense of agency to better their communities. I admit this is the learning I am most passionate about, but such learning is much more difficult to assess than essay construction and citation formatting. Learning to be connected to nature is lifelong learning, so I turn to the wisdom Chiara shared, and I will “trust in the time to do the work.”

Summary

The wisdom shared in each participant conversation far exceeds the scope of this study. Every return to their words yields more insight, as well as more questions. As Chiara notes, this topic requires that we “embrace a learning that is broader than just content or objective that I can see. And also trusting in the time to do the work. I mean, we’re having a conversation, but for you it will go on longer, and for me too, in different ways.” Findings gathered from the data in this study provided insight into the development and characteristics of participants’ ecocentric worldview, its impact on their relationships to place and their teaching practices, and the transformative elements of their nature connection journeys. The implications of these findings and possible future paths for this conversation will be discussed in the next and final chapter.

Chapter 5

Implications for Theory, Practice, and Research

“Something in me stands up and says, “This can’t be numbered.” ... It’s really this feeling of something that is so alive or sacred, that it’s again going to be taken and used and put into boxes and all the liveliness goes out of it so it can be used for something. So that is my instinctive reaction seeing words like “survey” or “questions” or “numbers”. – Madeleen

The purpose of this study is to investigate how a culture of nature connection and the use of nature connection practices impacts learners’ cultural and ecological indigeneity and their practice as educators. Using the lenses of transformative learning theory, Plotkin’s “Soulcentric” model of psychological development, and rewilding, I analyzed ethnographic interviews with seven educators and nature connection learners in order to pursue the following research questions:

1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?
2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?
3. Where does an eccocentric worldview appear in these processes?

In this study, qualitative data was collected through ethnographic interviews with participants. While this is primarily a qualitative basic interpretive study informed by ethnography, data was also collected using a quantitative tool, Nisbet et al.’s (2009) Nature Relatedness survey to measure the presence and pattern of nature connection among participants.

Data collected with the Nature Relatedness tool was analyzed using basic descriptive statistics. This analysis demonstrated that all participants were highly nature-related. Once participant interviews were collected they were analyzed, first, through a phase of open-coding (Merriam & Tisdell, 2016), followed by a phase of axial coding (Charmaz, 2014; Corbin &

Strauss, 2015) that developed categories and subcategories of recurring patterns within the data. Qualitative findings revealed three interrelated themes regarding the process of learning to connect to nature and growing an ecocentric world view. The first theme demonstrates two primary characteristics of the participants' ecocentric worldview: viewing the world as animated or ensouled and seeing the world as an interrelated complex system. A second theme is the process of developing a connection to nature and an ecocentric worldview, which consisted of foundational experiences, the incorporation of diverse frameworks, and often, a deepening of perspective through a crisis, resulting in a greater commitment to connecting to a specific place. Finally, the third theme identifies four elements of the transformative process of learning an ecocentric worldview: gradual change, integrating and orienting communal events, spirituality, new pedagogical approaches and perspectives.

This final chapter will consider these findings in light of the study's theoretical frameworks and consider what they reveal about the research questions. The next section will consider the implications of these findings for the fields of adult education and adult environmental education, as well as the broad fields of nature connection and socio-ecological sustainability. The third section will discuss the significance and limitations of this study, followed by a section addressing suggestions for future research. The chapter will close with a final reflection on my experience conducting this research and my time in the Adult Education doctoral program.

Findings in Relation to Research Questions

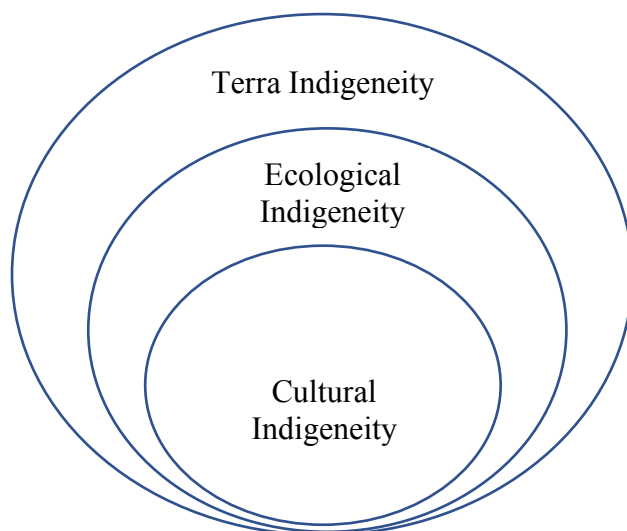
As stated above, three themes emerged among the findings, but these themes were not discreet and often intersected with one another. This section will reintegrate these themes to address this study's three research questions.

Q 1. How does learning nature connection practices within a culture of nature connection contribute to the cultivation of terra, place, and cultural indigeneity as it changes over time?

This study found that participants all valued and pursued a sense of belonging to the land they inhabited, and, for most, belonging was not dependent on ancestral ties to that land. This finding is consistent with Plotkin's (2013) model of indigeneity and human development – he suggests that it is first through the cultivation of terra indigeneity that an indigenous sense of place (ecological indigeneity) may develop, which in turn can be a foundation for cultural indigeneity. For participants in this study, their expressions of an ecocentric worldview are an indication of their possessing terra indigeneity. At its most basic, terra indigeneity is an awareness of one's interdependency within a wider web of life, a web that encompasses and values the more-than-human-world. This most fundamental form of indigeneity is the context for ecological and cultural indigeneities to develop (see Figure 4).

Figure 4

Cultural Indigeneity and Ecological Indigeneity Grow from Terra Indigeneity



One of the main findings of this study was that participants' processes of developing an ecocentric worldview involved the development of their connection to the land in which they lived. For most, cultivating land was a primary nature connection practice through which they sought to develop connection to a particular place – whether it be a garden at home, a rented allotment, or on a community farm – along with practices of familiarizing themselves with their immediate more-than-human neighbors. For Vixenz, it did not matter that she had been born and raised in England. Her connection to Aotearoa (New Zealand), her ecological indigeneity, is deeper than her personal history and is a relationship that she actively cultivates with this ritual. Petra's experience growing food for her family in her garden provided a greater sense of connection to the land than the knowledge that her family had lived in the region for generations, a sentiment echoed by Chiara when she described how the land was nourishing her as she nourished the land through tending it, which included cultivation and benign neglect.

Alicia's was the only story that identified the impact a lack of ancestral connection to land has had on her sense of ecological indigeneity. Despite the sense of loss she describes from not feeling she has a home, Alicia has still been able to form a connection to the land where she works on a permaculture farm. Working on the permaculture farm has also been a source of community for Alicia, suggesting movement towards the third sphere of indigeneity in Plotkin's (2013) model, cultural indigeneity. Plotkin does not define cultural indigeneity, but its dependent relationship to terra and ecological indigeneities implies that cultural indigeneity is a sense of belonging to a culture whose customs, beliefs and values are grounded in a unique ecological place and the natural systems that govern in and beyond that place. In this study I refer to such a culture as a nature connected community.

A sense of belonging was something that everyone in the study valued, and it was something they were in the process of developing within their ecological environment, as well as their local human world. Plotkin's (2013) model of indigeneity is a simple framework that has yet to be elaborated, so the relationship between each sphere of indigeneity and the process of developing into the next is untheorized. However, the experiences of participants in this study demonstrate that terra indigeneity (an ecocentric world view and nature relatedness) has facilitated the active pursuit of ecological indigeneity (deep connection to place). Cultural indigeneity, however, remains more of an aspiration than a reality. All of the participants identified being part of a nature connected community as something they valued and were pursuing. Matt, Vixenz, and Alicia spoke of the more developed community networks they were a part of, such as Alicia's permaculture community, Matt's colleagues in outdoor leadership and education and the community supported agriculture farm he belonged to, and Vixenz's elder circle in her island community. Chiara described her work in building a nature connected community in her village through her own educational programming as well as modeling community stewardship as she becomes involved in village politics. For Madeleen, Petra, and Tonton, a nature connected community was less cohesive and concrete, existing through more disparate, distant, and often online networks.

Q2. What are the transformative dimensions of the processes of nature connection practice, rewilding, and the emergence of a culture of nature connection, and how are they interrelated?

This study identified four major themes regarding the transformative dimensions of learning nature connection and developing an ecocentric worldview: developing an ecocentric worldview as a process; recognizing spirituality in learning an ecocentric view; integrating and

orienting through communal events; and mentoring with nature connection. In this section, these themes will be further elaborated on using this study's theoretical frameworks. As will be seen in this section, there was a preponderance of findings that addressed transformative learning, validating the choice of this theoretical framework for this study and indicating that there is a need for more research on this topic in the field.

Developing Ecocentric View as Ontological Process of Iterative Becoming

As has been argued by Orr (2004), O'Sullivan (2012), and Lange (2012; 2018), and others (Clover, 2003; Clover et al., 2000; O'Neil, 2018; Williams, 2013), socio-ecological sustainability will require transformative learning experiences that lead individuals to perceive their interconnectedness with nature and all living and nonliving beings. Participants in this study had already begun to develop an ecocentric view before attending the communal events that inspired integrating and orienting experiences that further developed that perspective. An already-present ecocentric worldview stimulated their intention to pursue personal nature connection practices and helped them make meaning of these practices as well as their experience of the communal event.

Participant stories traced the beginning of the development of their connection to nature to their childhood, providing a foundation for an ecocentric worldview that continued to develop through experiences such as academic study, farming and gardening, personal crises, and exposure to other knowledge frameworks of interrelatedness. At this present point in their lives, the participants are all now highly nature related (as demonstrated by their scores using Nisbet et al.'s (2009) Nature Relatedness survey) and exhibit an ecocentric worldview. But this is not to say that once developed, an ecocentric worldview is fixed. Participants described the

development of their connection to nature as a gradual process, evolving over time, and continuous.

Participant experiences point to a form of transformative learning that sustainability educator O'Neil (2018) refers to as an "ontological process of iterative becoming" (O'Neil, 2018, p. 372). In an attempt to move transformative sustainability education away from epistemological reductionism and toward ontological relationality, O'Neil advocates a view of transformative learning as "(re)membering and (be)coming where the '(re)'" and '(be)'" signify the 'livingness' and 'iterative enfolding' of learning" (O'Neil, 2018, p. 368). She argues that epistemological transformation is not enough to bring about an ecocentric worldview and ongoing environmentally responsible behavior. Instead, ontological transformation is necessary to foster lasting changes in perspective and actions, in which learners experience a change in how they think about the world they inhabit, their being in the world, and their relatedness. This transformation does not only consist of autonomous critical reflection but is grounded in "doings-in-action" (O'Neil, 2018, p. 379) – intra-actions between learners and the non-human world which possess "an active agentic force that collaborates with humans in the creation of social, affective, and cognitive learning experiences" (O'Neil, 2018, p. 383). Through these intra-actions, learners co-create themselves at an experiential level, an unconscious level, as well as the level of rational intellect. This learning is fundamentally a relational process resulting in a relational understanding of the world. Key to an ontological shift is the incorporation and reinterpretation of past experiences and meanings, a process Barad (2012) refers to as *spacetime mattering*, or "the ongoing rematerializings of relationalities not amongst preexisting bits of matter in a preexisting space and time, but in the ongoing reworkings of 'moments,' 'places' and 'things'—each being (re)threaded through the other" (Barad, 2012, p.162). Rather

than being discarded, past experiences, old forms of thought, and previous patterns of being are enfolded into new experiences to make new meaning.

Participants' stories about their journeys toward nature connection illustrate how they have come to make new meaning of past experiences to understand their relationship to nature over time (see Figure 3). Analysis revealed five common experiences that were foundational to that process: mentorship by a family member, experiential encounters, academic study, farming or gardening, a nature connected community. Furthermore, participants mentioned a variety of frameworks beyond nature connection that they combined to make sense of their relationship to nature, demonstrating a process of *spacetime mattering* as frameworks and experiences interacted to create meaning. Perhaps unsurprisingly, academic study of environmental sciences (or computer science, in Tonton's case) played a significant role in many of the participants' deepening of nature connection, as in Petra's case:

I started biology... and just learning how beautiful everything is, and how wonderful everything is. Every day was just like "Oh wow! Oh wow!" For all those years it was just "oh wow!" but still it was always with the mind.

Yet, as Petra learned from her work in environmental education, transformative sustainability education that focuses only on the mind is not effective:

You can teach people with their minds, ... but then their behavior was so different. ... So I knew this wasn't the way to reach people, you know, it's just by mind, not by heart. And I didn't know how to do that. ... Our whole society and schooling system just focuses on the mind and not on the heart, and I don't know if we are able to change that, but I am really happy to find, now that... even in small places like Art of Mentoring, Wilderness Awareness school."

Participant accounts bore this out, describing another set of deepening experiences that centered on self-inquiry, or what Dirkx (1997, 2000, 2001, 2008a, 2008b, 2012) refers to as soul work, precipitated by a personal crisis. These highly personal experiences provided an opportunity to reexamine one's relationship with oneself and the greater world. As Madeleen articulated it, "I felt like something is not working for me, but it is working when I'm in nature. ... Then I really thought 'I need to examine, explore all my relations.'" It is through a combination of intellectual and emotional deepening experiences that an ecocentric worldview begins to emerge.

Spirituality, Ecocentric Worldview, and Transformation

The findings of the current study show evidence that through nature connection participants have developed or are developing relationships to spirit, as demonstrated by their understanding of the world as interconnected and their trust in a grander scheme (see Figure 2). The increasing realization of the world as interconnected was accompanied by an engagement in what Dirkx (1997, 2000, 2008a, 2008b, 2012) refers to as *soul work*, allowing participants a better understanding of themselves. Chiara describes this as a cyclical process:

So I think it's a sort of circle and different parts, the self-awareness, the connection with nature, in different moment or in different states are helping you in coming back to this center place where basically everything is possible and all is ok. Internally, all is ok.

And Madeleen succinctly explains that "Nature just showed me my own nature."

In Plotkin's (2008) cosmology, spirit and soul are complementary concepts – soul calls us to our individual unique path in the world, our "ecological niche," while spirit invites us to an awareness of the transcendent oneness of all the universe. Cultivating a relationship to spirit is just as essential to personal development as attending to soul because they have a reciprocal relationship with one another

Imagine a web made up of a multitude of nodes (places where two or more strands intersect). Each node is a place in the web, like the soul is a place in the world. Spirit corresponds to the whole web (or the dynamic patterning of the web); it subsumes every node (soul) and the strands (relationships) that connect them. Like a node to a web, there's a part-whole relationship between soul and spirit. Imagined this way, it's easy to see that you can't have spirit without souls, and vice-versa" (Plotkin, 2008, p. 42).

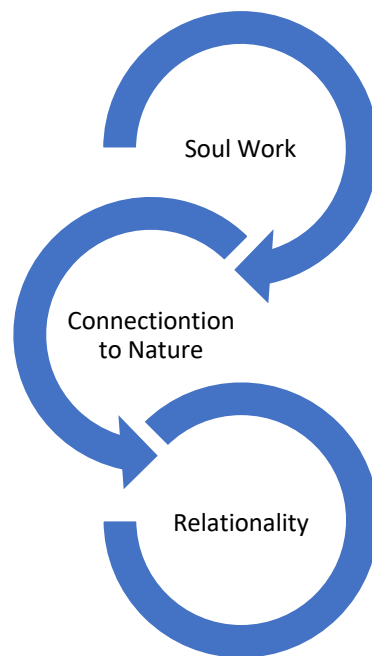
O'Sullivan (2012) argues that just such an approach to spirituality, one that understands ourselves and our relations with other humans and with the natural world as a "communion of subjects, not a collection of objects" (Swimme & Berry, 1992, p.243), is necessary to accomplish the structural shift in consciousness that is the goal of transformative sustainability education.

But how does one learn to have a relationship with soul and spirit, or come to see the world as a communion of subjects? Both Plotkin (2008, 2013) and Dirkx (1997, 2000, 2008a, 2008b, 2012) ground their understanding of human development in depth psychology, making Dirkx's writing on *soul work* an ideal transformative learning lens with which to understand Plotkin's model. A concept based on Jungian individuation, soul work is the establishment of a conscious relationship with one's unconscious. This is accomplished by recognizing and addressing the powerful influence of emotion on our interpretations of and interactions with the world. While this is internal work undergone by an individual, Dirkx (2012) points out that soul work has a reciprocal relationship with the collective because our unconscious lives both reflect and impact collective dynamics. This relationship is particularly relevant when we consider the impact of soul work on social action, as Kovan and Dirkx (2003) do in their study of environmental activists. They found that the activists' spiritual and emotional connections to themselves, nature, and humanity, ultimately formed the foundation for how they connected their

values with action and maintained commitment to those values in the face of adversity. These crucial connections came about, in part, through engaging in ongoing soul work in which “the dialogical process between the inner and the outer, between the unconscious and conscious dimensions of one’s being, results in a deepening sense of self and an overarching appreciation of how the self is at the same time an aspect of something greater” (Kovan & Dirkx, 2003, p. 110). Just as Plotkin suggests, an individual’s relationship with soul (connection to the self) and spirit (connection to the greater whole) develop reciprocally.

Figure 5

Spiral System of Reciprocal Soul Work, Nature Connection, and Relationality Development



This relationship could be illustrated as interconnected cycles of development forming a three-dimensional spiral (see Figure 5). As an individual engages in soul work, those insights and experiences of themselves impact their connection to nature, allowing them to understand nature and their relationship to the world around them in new ways. Reciprocally, as an individual develops their connection to nature, this experience allows for a deeper understanding of

themselves. This research suggests that another key element of this developmental system is relationality which interacts reciprocally with both soul work and nature connection but is not limited to either of those realms. As discussed in the previous section, ontological transformation into a relational perspective occurs when learners co-create themselves with the agential world around them at an experiential level, an unconscious level, as well as the level of rational intellect. This study has found that the development of a relational perspective happens through both the processes of soul work and nature connection, but it is not confined to them, nor does it result from them in a linear process. Rather, experiences and insights in each of these three realms or processes occur alongside one another, influencing one another. The reciprocal relationship between these three realms can then be seen as a spiral if the three realms are pictured as three stacked cycles and development in any one of the realms is illustrated as movement through a cycle (for instance, movement clockwise in the Soul Work cycle in Figure 5). Yet because the cycles are interrelated, as an individual moves through the cycle in one realm their movement in another related realm is also affected, creating a spiraling movement toward the development or expansion of an ecocentric worldview.

The Social in Transformative Learning

In addition to their nature connection practices and engagement in soul work, participant stories frequently identified communal events as catalysts for the integration of related, but, until then, separate, elements of their ecocentric perspectives. The communal events were a pivot point in the development of their worldviews and the way they lived out that worldview. From the beginning, transformative learning models have acknowledged the role of the social in the transformative learning process. For Mezirow (1991; Mezirow, J., and Associates, 2000), reflective discourse is key to the critical assessment of assumptions necessary for perspective

change. Taylor (2009) suggests that in order for dialogue to be a medium for critical reflection it must be relational and grounded in trust, and not simply rational or analytical. Lange (2012, 2015, 2018) goes further to articulate the importance of the social in transformative learning, arguing that “individuals often do not know their potential until a specific community brings it forth... This transformation is highly participative, spontaneously emerging in connection with others” (Lange, 2012, p. 205).

This study found that communal events around nature connection acted as integrating and orienting experiences. However, discourse did not appear to play a central role at these events. As participants in this study described their integrating and orienting experiences at communal events they emphasized that these events were effective because they were immersive and comprehensive. Discourse certainly played a part in the experience as participants met and spoke with other people, but especially crucial was the opportunity to see other people embodying a worldview through their actions together.

In their chapter analyzing the transformative elements of a residential adult learning community, Cohen and Piper (2000) offer some insights into how social context can support transformation, beyond dialogue. They identify four critical components of such communities that contribute to transformative learning. The first three components facilitated a sense of separation from everyday life that allowed participants to engage in new ways of being and thinking: the *setting* was an estate not associated with the formal learning environment or participants’ home environment, and often served as a metaphor for their learning journey; the program allowed for a *breakdown of participants’ regularly-held roles and identities*, allowing for hidden parts of their identities to emerge, usual hierarchies to dissolve, and curiosity and inquiry to be sparked; and, an illusion of infinite *time* for reflection and integration. In addition to

these elements, Cohen and Piper (2000) found that the structural paradoxes inherent in their curriculum also spurred participants' learning. While each day was clearly structured and scheduled, students were expected to design their plan of study individually. The tension between freedom and structure shifted students' perspectives and expectations around taking an active role in their own education. The authors also noted that the creation of a learning environment that serves as a safe holding space is essential for an effective learning community and is necessary if participants are to learn through open discourse. Sharing personal experiences with one another was found to be an important part of critical discourse as it allowed them to "begin reinvisioning [their] experiences through the multiple perspectives of [their] audience" (Cohen & Piper, 2000, p. 220).

All of these elements of a transformative learning community appeared in the accounts of participants as they described integrating and orienting communal events. The settings of these events were often removed from the context of their daily lives, and once at the events, hidden elements of their personalities were able to emerge. Participants mentioned an experience of "timelessness" at the events, a simultaneous compression and expansion of time that allowed for quiet reflection and continuity between learning experiences. Petra succinctly describes the importance of structural paradox, holding space, and feeling a part of a community in her integrating experience attending an Art of Mentoring camp:

The community, the music is very important, I think so. And then the timelessness, and the structure that doesn't feel like structure. You know, like there was a hearth fire, there was a village to hold you, and I think that was very important to have, too. ... After the [Art of Mentoring], I just really had this insight that you can't do anything alone as

people, as a person, it's so important to have the connection to other people, and that was something that I had no idea, never, that it was so important.

These findings serve as an important reminder that transformative learning does not occur in isolation but takes place within a social context and involves social interactions beyond critical discourse. Communal events have the potential to deepen and elaborate a developing perspective.

New Pedagogical Approaches and Perspectives

Environmental adult educator Griswold (2017) argues that if educators are going to bring about social change, they must help students learn to recognize that “[o]ur attitudes and worldviews toward the environment are bound up in our current system, which perpetuates the injustice we seek to end” (Griswold, 2017, p.12). But how do educators come to this realization themselves? This study found that participants’ ecocentric worldviews and nature connection practices have impacted their teaching practice and how they view their role as an educator. In Plotkin’s (2012) model of soulcentric human development, early adulthood is when we learn and develop our individual gifts so that we can use them to enhance our community. As we develop mastery of these gifts, we learn to fully embody our soul, or fully embrace our socio-ecological niche, in increasingly creative and generous ways. While elderhood is more associated with mentorship, specifically mentoring younger community members through earlier stages of development or the mastery of their gifts, adulthood is still a time of sharing those gifts with others to enhance the whole community. Plotkin describes an individual’s contributions at this time as sewing the “seeds of cultural renaissance” (Plotkin, 2012, p. 362), as this is when, grounded in soul and a mastery of their gift, an individual can best contribute to the renewal of culture to make it sustainable over time. Participants in this study described how, as they

developed their own nature connection practice, they felt a call to share with others their knowledge, awe, and respect for nature in order to enhance their community or the greater world.

In her study of transcultural learning and identity development among new immigrants in Canada, Lange (2015) found that mentoring others was an integral component in their transformative learning process. Newcomers did not recognize their own transformative learning until they began to mentor others, sparking an epistemological and ontological shift to a new identity as a perpetual learner in a “dance of transculturality where the sense of self in relation to culture becomes dynamic and creative and learning is reciprocal and mutual” (Lange, 2015, p. 17). As mentors of other newcomers, immigrants participated in mutual meaning-making dialogue with a focus on creating a holding a space where people’s higher selves could emerge. Their approach to mentoring is described as “a magnified sense of ‘beauty-hunting’” (Lange, 2015, p. 15) characterized by spontaneous forgiveness, flexibility, empathy, multiple perspective-taking, ego loss, affirmation of interdependency, holism, balance of opposing forces, mutual respect, and an acceptance of not knowing.

Similarly, as nature educators in this study developed their own connections to nature, they were drawn to assisting others in connecting with nature, with mentoring styles that echo the same elements of “beauty hunting” Lange (2015) found among immigrants’ transformative experiences. The findings of this study support Lange’s relational ontology of transformation that is grounded in ethics, the cultivation of the Self, and individuality within communality, and they illuminate the ways individual transformation impacts social transformation, an area of transformative learning theory that remains underdeveloped (Baumgartner, 2012; Cranton and Taylor, 2012; Taylor and Snyder, 2012).

Contributing to “cultural renaissance” (Plotkin, 2012) was important to all of the participants, yet most did not see traditional activism as a way to accomplish the work they wanted to do in the world. While this finding may be surprising at first, it begins to make more sense when considered in light of O’Sullivan’s (2012) three interrelated modes of transformative learning for ecological consciousness: survival education, critical resistance education, and visionary transformative education. Education for survival – coming to an awareness and acceptance of the ecological crisis – and education for critical resistance – becoming aware of the worldview behind the forces of modernism, imperialism, capitalism, and globalization that have brought about current levels of environmental degradation – are familiar educational approaches in environmental and sustainability education and are frequently addressed in traditional activism. Transformative education in these contexts is pursued through epistemological critique, with the goal being a new awareness of the epistemologies that shape one’s own perspective, leading to the transformation of worldview. However, the goal of the third mode of transformative education, education for visionary transformation, is what O’Neil (2018) and Lange (2012, 2015, 2018) refer to as an ontological transformation – the creation of a new planetary consciousness and cosmology that restores the relationship between human and human and human and nature. This mode of transformative learning was of the most interest to participants, and they did not necessarily see traditional activism as addressing it. Rather, they see creating new myths to guide the social imaginary, or working locally to establish nature-connected villages, as a more effective way to pursue this goal.

Q3. Where does an ecocentric worldview appear in these processes?

The findings of this study revealed that research questions one and three are closely related, however, the questions are addressed separately here because they were posed separately

at the outset of this research. The quantitative findings produced by Nisbet et al.'s (2009) Nature Relatedness Scale demonstrated the presence of nature relatedness among participants. This study argues that the construct of nature relatedness (NR) as proposed by Nisbet et al. (2009) and as operationalized in their tool is equivalent to an ecocentric worldview. The authors describe the NR tool as measuring the degree to which one connects to the natural world:

Nature relatedness is not unlike the deep ecology concept of an ecological self, the notion of a self-construal that includes the natural world. The concept of NR encompasses one's appreciation for and understanding of our interconnectedness with all other living things on the earth. It is distinct from environmentalism in that it includes much more than activism. It is not simply a love of nature or enjoyment of only the superficially pleasing facets of nature, such as sunsets and snowflakes. It is also an understanding of the importance of all aspects of nature, even those that are not aesthetically appealing to humans (e.g., spiders and snakes).

Just as the findings of this study demonstrated with an ecocentric worldview, the construct of NR is similarly based on an appreciation of interconnectedness (complex systems view) and an appreciation for other beings beyond their aesthetic value. This latter quality is not fully articulated by Nisbet et al. as an animistic view, but it is progressing towards one and away from an anthropocentric view of the world.

Using this construct, the authors developed the Nature Relatedness questionnaire and scale to assess the affective, cognitive and physical relationship individuals have with the natural world and to determine empirically if nature connected people (those who score highly in nature relatedness) are in fact more likely to engage in environmentally responsible behavior (ERB). In

their testing of the tool for its validity, they found that high levels of NR predicted an ecological perspective in participants, as well as strong views about the seriousness of ecological problems and human treatment of the environment (Nisbet et al., 2009). While these findings do not demonstrate that an ecocentric worldview, as defined by the findings of this study, is fully equivalent with NR, it is clear that there is significant overlap of the two constructs. If these two constructs are understood as separate, the findings of the study do, however, suggest that participants' ecocentric worldviews are strongly influential in their nature relatedness, resulting in their high NR scores.

Deepening and Expanding an Ecocentric Worldview as Transformation

As outlined in the findings, an ecocentric worldview was present throughout the participants' processes of developing a connection to nature and did not appear to emerge in a single transformative moment. The findings do not suggest that an ecocentric worldview is a precursor to connecting to nature. However, participants' stories of their foundational experiences in nature connection suggest that they have held or been exposed to elements of an ecocentric worldview from an early age. If this is the case, then this suggests that their development of an ecocentric worldview may not have consisted of a traditional perspective transformation, which Mezirow (2000) describes as "the process by which we transform our taken-for-granted frames of reference (meaning schemes, habits of mind, mindsets) to be more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action" (Mezirow, 2000, p. 8). It is possible that participants already possessed frames of reference that included these qualities, qualities that may have been taken for granted, but were none-the-less useful in the development of an ecocentric worldview.

This raises the question of whether participants' development of an ecocentric worldview was in fact transformative. The findings of this study, particularly those outlined in the section above, suggest that there were several transformative elements of participants' experiences learning nature connection and deepening their ecocentric worldview. If we include participants' experiences as transformative learning, the implication is that transformation does not only occur when one reassesses a perspective and rejects it for new feelings, attitudes and value judgements of a new meaning perspective that will "act as a filter for interpreting the meaning of experience" (Mezirow, 2000, p. 17). Rather, participant experiences suggest that transformative learning can also occur when one deepens or elaborates on a preexisting perspective through the revaluation of specific beliefs, feelings, attitudes, or value judgements that make up a perspective, what Mezirow refers to as a meaning scheme (Meizrow, 2000). Mezirow leaves open the possibility for this in his model of transformative learning, but it is an interpretation that is not fully articulated. In his critique of transformative learning theory, Kegan (2000) identifies the need for further clarification of the "form that transforms" (Kegan, 2000, p.35). He argues that in order for the theory to develop,

The *form* that is undergoing transformation needs to be better understood; if there is no form there is no transformation. [...] At the heart of a form is a way of knowing (what Mezirow calls a 'frame of reference'); thus genuinely transformational learning is always to some extent an epistemological change rather than merely a change in behavioral repertoire or an increase in the quantity or fund of knowledge (p. 48).

Using a constructive-developmental perspective, Kegan formulates transformative learning as a gradual process through which an individual's way of knowing progresses from "a place where we are 'had by it' (captive of it) to a place where we 'have it,' and can be in relationship to it, the

form of our knowing has become more complex, more expansive” (Kegan, 2000, p. 54). This interpretation of transformative learning does not require a rejection of one perspective for another, but acknowledges that transformation can take place as an individual becomes more aware of how they understand the world and develop new ideas about their ideas. This interpretation of transformative learning more accurately describes the process recounted by participants, who appear to be transforming the depth of their already-present ecocentric worldview.

Ecocentric Worldview and Terra, Place, and Cultural Indigeneities

While it is possible that participants have always held an ecocentric worldview, all of the participants indicated that some of their perspectives have changed over time. This suggests that, at the very least, nature connection is possible even as one’s ecocentric worldview is evolving. Rather than an ecocentric view leading linearly to a connection to nature and the development of terra, place, and cultural indigeneity, or vice versa, these three qualities appeared to co-evolve, each influencing and expanding the other reciprocally.

As was outlined in the findings, analysis of the ethnographic interviews identified two integrated characteristics that comprised participants’ ecocentric worldviews: 1) a view of the entire world as animated or ensouled; and 2) a view of the world as an interrelated complex system. Participant stories described experiences when a realization of the world as either ensouled or interrelated led to a greater sense of belonging to a particular place, as well as instances when the act of intentionally cultivating a sense of belonging to a specific place led to the realization of an ensouled world or their unique place in the complex system. Throughout their stories, an ecocentric worldview was simultaneously emerging through and influencing

participants' lived experiences with their environment, while also deepening their sense of terra indigeneity and, for some, expanding into place indigeneity.

Referring back to Plotkin's (2013) model of indigeneity (see Figure 4), terra indigeneity is the foundation for the development of place and cultural indigeneities. The findings of this study suggest that the development of an ecocentric worldview plays a role in the development of terra and place indigeneities, and therefore cultural indigeneity, as well. These findings provide additional support for the claim in transformational environmental education that an ecocentric worldview is crucial to forming relationships with place that are the foundation for pro-environmental behavior, as advocated by Orr (2004), Lange (2012), O'Sullivan (2012), Clover (1995, 2003), and others. However, the findings of this research go further to suggest that cultivating a sense of belonging to place through nature connection practices contributes to the development of an ecocentric worldview, as well.

Implications for Transformative Environmental Education

Analysis of the findings in relation to the theoretical frameworks of this study produced several implications for the theory and practice of transformative environmental adult education. These implications are ordered according to scale, beginning with the individual interior scale of ontological transformation and *soul work*, and then moving to the exterior and broader scale of cultural emergence and social transformation through teaching and activism.

Ontological Transformation in the Development of an Ecocentric Worldview

Within the field of adult education, growing interest in environmental and sustainability issues has generated several edited works dedicated to adult environmental education (Clover, 2004; Clover, Follen, & Hall, 2000; Dentith & Griswold, 2017; Hill & Clover, 2003). While these works foreground the importance of addressing environmental degradation and fostering an

ecological world view, they frequently emphasize the social impacts of environmental issues, such as the environmental sexism and racism produced by globalization. This literature tends to present nature and the environment primarily as a field of power contestation, giving less consideration to nature's inherent value as a living system comprised of other beings, and its value to human and global physical, cultural, and spiritual health. In contrast, this study conceives of nature as an entity with whom individuals are learning a new form of relationship. While the re-envisioning of this relationship may impact other perspectives the participants have, the primary transformation of concern is whether or not participants develop a more relational ontology. O'Neil (2018) argues that in order to foster transformative sustainability learning it is not enough to simply transmit knowledge about environmental science and sustainability, nor is it enough provide learners with action-oriented or experiential programs. What is necessary are social, affective, and cognitive learning experiences that inspire relationality. So, is the answer to inspiring relationality to simply combine scientific information about the interrelatedness of life through complex systems with action-oriented programing, linking with personal experience? Or is something else required? Spirituality may be a key to understanding the development of an ecocentric worldview.

Spirituality and Transformation

Adult environmental educator and education theorist, Pierre Walter (2009) created a typology of adult environmental education philosophies in order to broaden the approaches to theorizing adult environmental education, help adult educators locate themselves within the field of practice, and provoke more conversation in the field regarding philosophy and practice. Walter argues that in adult environmental education a humanistic education philosophy is "based on a belief in the wisdom of nature as integral to human spirituality, identity, and indeed,

existence” (Walter, 2009, p. 16) with the goal of increased self-awareness as a part of nature. Complete, holistic learning must therefore take into account a relationship with and understanding of nature that addresses the somatic and narrative (Clark, 2001), as well as spiritual (Tisdell, 2003) dimensions of learning. An example of this humanistic approach is adult environmental education that is influenced by indigenous knowledge systems teach in a way that is “deeply personal and holistic, stressing the intrinsic biophysical and spiritual connection of human beings to nature and tapping into its healing powers, generally within a supportive community and facilitators” (Walter, 2009, p. 17).

Combining the radical teaching philosophy elements of liberation and social critique with a humanist approach to environmental education, environmental educator Darlene Clover (1995) developed a framework for critical environmental adult education that incorporates the philosophies and methodologies of adult education, feminist pedagogy, popular education and indigenous ways of knowing. Recognizing that environmental education cannot change peoples’ relationship with the environment through intellectual frameworks alone, she suggests that it is also necessary to incorporate a perspective of nature as teacher and a sacred place that instructs through felt experience – an indigenous perspective. She argues that it is only by grounding critical environmental adult education in sacred or spiritual human/nature interaction is it possible to teach a respect for nature that will result in action.

Participant accounts demonstrate that their active cultivation of nature connection has not only facilitated an ecocentric worldview, but also a relational form of spirituality that O’Sullivan (1999, 2012) argues is essential for cultural transformation towards sustainability. Furthermore, participants demonstrate a deepening sense of self-knowing through *soul work*, which Dirkx (2012) identifies as a precursor for the deep and lasting societal change that transformative

learning aims for. While empirical studies of environmentalism and nature relatedness (Puig & Echarrri, 2018; Zylstra, et al., 2014) have tended to avoid addressing spirituality, transformative learning literature has embraced it as an integral aspect of the learning process (Dirkx, 1997; Davis, 2003), examining the impact of spirituality and culture in adult education practice (English & Tisdell, 2012; Tisdell, 2001, 2002, 2003; Tolliver & Tisdell, 2006), the spiritual dimension of learning (Charaniya, 2012; English, 2001; English & Gillen, 2000; Miller, 2002); and the potential of learning to facilitate spiritual development (English, 2001). This literature emphasizes spirituality's contribution to understanding the self, an understanding which then influences an individual's actions in the world. The findings of this study suggest that future transformative learning research should give more consideration to the role of spirituality in transforming our understanding of our *relations* to the wider world, a transformation O'Sullivan, (1999, 2012), Lange (2012, 2018) and O'Neill (2018) argue is necessary to achieve societal transformation towards socio-ecological sustainability.

Learning for Cultural Emergence

Because one of the goals of transformative environmental education is to affect social change, the present study raises questions about how reciprocal individual learning and group learning leads to the emergence of a new culture, specifically, a rewilded culture. The findings of this study suggest that one way the development of an ecocentric worldview has led participants to work towards social change is by teaching and mentoring others in nature connection and by approaching teaching and mentoring as what Lange refers to as "beauty-hunting" (Lange, 2015, p.15), emphasizing forgiveness, flexibility, empathy, multiple perspective-taking, ego loss, affirmation of interdependency, holism, balance of opposing forces, mutual respect, and an acceptance of not knowing. Future research might consider how this approach to teaching is

encouraged or discouraged by social context and what impact such an approach to teaching has on learners.

If transformative learning is a foundation for taking social action (Mezirow, 2006), it is also important for transformative learning research to consider what elements of culture or communal life contribute to individual transformative learning that ultimately lead to social transformation. In the present study, participant stories revealed that they sought to create change in the wider world, but many distanced themselves from traditional political activism, such as protest. Rather, they saw more opportunity for change when focusing on culture. Madeleen mentions creating new myths to guide the social imaginary, while Tonton highlights the importance of tradition in fostering connection to community and place, and Chiara describes how respecting local lore facilitates ecological stewardship of the land. Adult education literature has developed a robust discussion around the relationship of culture and education, but often this conversation has focused on including culture in the classroom or acknowledging the impact of culture on learning and knowledge (Cueva, 2010; Drayton, 2014; Guy, 1999; Semali & Kincheloe, 1999; Tolliver, 2015). This study highlights the potential for culture to emerge *through* transformative learning, and through that emergence to bring about the social change that is often stated as a goal of transformative learning (Brookfield, 2000, 2012; Brookfield and Holst, 2010; Daloz, 2000; Mezirow, 2006; O’Sullivan, 1999, 2012, O’Sullivan, et al., 2002). As Tonton explains, “It’s much better to build the world that we want to see. ... I think creating small villages, I think that’s the only real path forward.” Societal change cannot begin and end at the individual level – it must be manifested through relations and networks.

The Social in Transformative Learning

In her review of transformative learning theory from 1975 to the present, Baumgartner (2012) notes the need for more explicit discussion of the role of socialization in the transformative learning process. She argues that socialization is present throughout the entire transformative learning process as individuals talk and listen to one another, learn through observation, and as their actions are reinforced or discouraged by others. She calls for more inclusion of social learning theory in transformative learning's future theoretical development, to account for these forces in the learning process. Increasingly, transformative learning literature has considered the role of the social context in the transformative learning process with an emphasis on relationship and the dialogic process (Belenky & Stanton, 2000; Cranton, 2006; Kasl & Elias, 2000; Schapiro, et al., 2012; Taylor, 2009; Yorks & Kasl, 2002) but Taylor and Snyder (2012) suggest that this line of inquiry could be pursued further with future research examining the role of social responsibility and social accountability in transformation, with increased attention to affective and nonconscious learning.

If a goal of transformative learning is an evolution of consciousness that results in perspectives that are increasingly “more inclusive, differentiated, permeable, and integrated” (Mezirow, 1991, p. 155), then it is important to understand how the communal events such as those experienced by participants accomplished integration and orientation that deepened their ecocentric worldviews. By understanding what elements contribute to integration and orientation, and how to best actualize them, we as educators can create learning environments that support those processes and become aware of where they already exist in our communities.

The findings of this study point to the influence that being a part of a community with shared values and practices has on an individual's transformative learning towards an ecological

consciousness. Mentorship in nature connection by family members featured in many participants' accounts, suggesting that family or small group learning is a phenomenon that would benefit from future attention. Heeding Baumgartner's (2012) call, adult education might turn to research on the social elements of learning being conducted in other fields, such as the interdisciplinary anthropological and psychological research done by Rogoff (2012, 2014) and Paradise and Rogoff (2009) on the informal learning process of "Learning by Observing and Pitching In" which theorizes a process of learning in families and traditional communities. This model offers one conception of how children's learning occurs through socialization which the field of adult education might expand on to theorize how adults learn through a social context.

Teaching and Activism

While much of transformative learning literature emphasizes the role of critique in the process of transformation (Brookfield, 2000, 2005; Mezirow, 1990, 2000, 2012; Taylor, 1997, 2000; Taylor & Cranton, 2012; Taylor & Snyder, 2012), participants' descriptions of their teaching practices and their goals as educators were more aligned with O'Sullivan's (1999; 2012; O'Sullivan, et al., 2002; O'Sullivan & Taylor, 2004) visionary transformative education and O'Neil's (2018) "doings-in-action" which emphasize relationship between the learner and the non-human-world. Participants described experiential learning scenarios grounded in awe, exploration, curiosity, play, over-coming fear, and pushing perceived boundaries, rather than emphasizing epistemological critique. The findings of this study suggest the need to better understand how educators can foster learning through "doings-in-action" to teach towards epistemological and ontological transformation for ecological consciousness.

Participants' stories identified a number of ways that their deepening relationship with nature had impacted their teaching practices, from facilitating learner exploration through space-

holding, to teaching through modeling, from learning to rely on their internal and environmental awareness to inspiring curiosity and learner confidence through questioning. If society is looking to its educators to help teach an ecological consciousness, then it is essential that we understand what teaching methods are most useful in that learning process. Future research could examine the effectiveness of the teaching practices identified in this study, keeping in mind that transformation will likely be an ongoing, iterative process that will continue long after all but the longest longitudinal study.

The Concept of Indigenous Learning in Adult Environmental Education

For participants, a sense of belonging to nature as a whole and to a specific ecological place was not dependent on one's ancestral ties to land, and that these indigeneities progressed for participants in accordance with Plotkin's (2013) model of indigeneity – from terra indigeneity to ecological indigeneity. Participants' stories also suggest that ecological indigeneity is a precursor to cultural indigeneity, but the process of developing cultural indigeneity and what such an emergent culture looks like remains unclear. This has implications for rewilding efforts, as it suggests that a process of rewilding can occur in any place when an individual possesses an ecocentric worldview, or nature relatedness, and he or she actively cultivates a relationship with a specific ecological place. This also has implications for formulations of indigenous knowledge and ways of knowing in the field of adult education.

As argued in the chapter two, adult education and environmental education literature has primarily considered indigenous knowledge and ways of knowing in the context of politically defined Indigenous peoples such as Native American tribes of the U.S., First Nations peoples of Canada, African tribal cultures, and the Māori of Aotearoa (Bang, et al., 2014; Barnhardt & Kawagley, 2005; Bat et al., 2014; Calderon, 2014; De Angelis, 2018; Drayton, 2014; Drayton,

2014; Kapoor, 2003; Lekoko & Modise, 2011; Mauro & Carroll, 2014; Merriam et al., 2007; Scully, 2012; Van Damme & Neluvhalani, 2004; Whitehouse et al., 2014; Williams, 2018). This focus has been useful for addressing decolonization and knowledge appropriation in education, however, it limits our ability to discuss the way many people experience a relationship to the land they inhabit and the culture they participate in today. Little has been written in adult education addressing the “indigenous dynamics” (Semali & Kincheloe, 1999) of knowledge and knowing among cultures and peoples who have not been politically designated as “Indigenous.” Yet, all people are capable of a sense of belonging to the earth, or what Plotkin (2013) refers to as “terra indigeneity,” regardless of their national or ethnic identity. By conflating indigenous knowledge as a mode of knowledge or knowing with the specific knowledge systems of politically Indigenous peoples, the presence of, and interactions between, other modes of knowledge within Indigenous cultures, such as formal and nonformal learning, is obscured and the role of knowledge with indigenous dynamics in non-Indigenous cultures is ignored.

The existing literature in adult education addressing indigenous knowledge demonstrates a growing awareness of the role traditional, land-based knowledge plays in education and the learning process. This study suggests that non-Indigenous people can also engage in knowing and learning that is grounded in a specific place, is not considered official, academic knowledge, and does not fall within dominant ideological paradigms. In doing so, they are striving to create emergent cultures indigenous to place in the pursuit of socio-ecological sustainability. If transformative learning towards sustainability is a goal of adult environmental education, adult education literature will need to broaden its definition of indigenous knowledge and learning to consider it among all cultural groups or develop a new term for knowledge systems and learning processes that possesses “indigenous dynamics” (Semali & Kincheloe, 1999, p. 15) among people

who are not considered politically Indigenous. As the field does so, it will be important for studies to clearly define the indigenous knowledge system they are examining, explain how it differs from other forms of knowledge, and how it connects to a specific cultural system of belief, values and customs.

Significance and Limitations

Transformative learning theory has been readily embraced by the fields of sustainability and environmental education. While many of the studies in these fields use transformative learning theory to examine the experiences of adult learners, the majority focus on students in formal, higher education contexts, with comparatively little attention paid to the transformative learning experiences of environmental educators. Two notable exceptions to this trend are the autoethnographic studies conducted by Williams (2013) and O'Neill (2018) which examined how the researchers, as educators and individuals, developed a deepened sense of ecological relationship with the land they inhabited and how this reconfigured their ideas of relationality. These two studies begin to paint a picture of how becoming aware of one's place in a greater ecological system can be a transformative learning process and they point to the ways in which this type of learning can impact educators' identities, practice, and relationships with their students. These studies point to a topic that is ripe for further investigation that will look beyond the experiences of a single individual. The current study is significant because it contributes to this gap in the literature by examining the transformative learning experiences of nature connection among a group of adult learners who are also educators, collecting multiple, possibly divergent, perspectives on this process.

There is also more room in the literature for studies investigating transformative learning within nonformal adult environmental education contexts. Adult environmental educator Darlene

Clover (1995) argues that the rapid progression of environmental degradation will not permit us to wait for the next generation of students to mature into ecologically responsible adults. There is an urgent need for more community-based, adult-focused environmental education to help tip the scales towards sustainability. In the last ten years there have only been five studies that have examined transformative learning in nonformal adult environmental education contexts (Etmanski, 2018; Fitzwilliams-Heck, 2019; Moyer & Sinclair, 2016; Souza, Wals & Jacobi, 2019; Westoby & Lyons, 2017). The majority of adults do not pursue degrees in environmental science or sustainability, consequently, much of adult environmental and sustainability education needs to take place outside of the formal educational context if it is to reach adults. This research study addresses this gap in the literature by examining the transformative learning that occurs within a specific nonformal environmental and sustainability adult education program and its impact on the educators' practice.

This study is in no way a comprehensive analysis of the experience or process of developing nature connection and an ecocentric worldview. As mentioned in chapter one, this research relies on extracting and analyzing simple categories, such as "nature," from autobiographical accounts, leaving room for researcher bias as she interprets the significance of these categories for participants (Chawla, 2001). Participants may also have been primed for certain responses based on their assumed expectations of the researcher. Finally, because several countries of origin not all participants speak English as their first language, there is a possibility that meaning may have been lost or altered in translation.

This study is also restricted in its scope to the experience of a handful of individuals who have been actively pursuing nature connection for several years. Therefore, findings of this study do not directly address the experiences of individuals new to nature connection, which may be

different from those mentioned here. The participant sample was also limited in its representation of diversity. All but one of the participants were native Europeans, and five of the seven participants were women. Only one of the participants was over the age of fifty, and all of the participants had attended university. Therefore, there are many demographics that were not addressed in this study so its findings are not generalizable. However, as a predominantly qualitative study, the goal was not to generalize the experiences of a population, but rather to understand how the participants made meaning of their experiences of nature connection as they contributed to the development of their ecocentric worldview.

Additionally, even though participants in this study discussed their journeys of nature connection from their earliest memories, their understanding of their own experience was ultimately through the lens of their current frames of reference and perceptions. It will be important for future studies to examine the experiences of learners earlier in the process of developing nature connection to understand how that experience is similar or differs from the accounts here.

Finally, Madeleen reminds us that “This can’t be numbered.” The research endeavor, as much as it acknowledges the ineffable in its research subject, is ultimately governed by rational modes of knowing. This is not a failing, but it is a limitation. Learning nature connection, developing an ecocentric worldview, is a process of the heart as much as, or perhaps more than, a process of the mind. The crucial role of the heart echoed throughout participant stories and should be mentioned here once again. While the conventions of research require us to name, specify, verify, and prove, these actions fall short of capturing all aspects of this phenomenon’s reality. To begin to grasp fully the experience, one needs to have just that – the experience.

Suggestions for Future Research

The current study has examined the phenomenon of learning nature connection using the lens of transformative learning to better understand how nature connection has impacted these adult educators' perspectives and practice. Other theoretical lenses should be applied to this phenomenon in order to paint a more complete picture of the learning processes involved. Participants highlighted the crucial role that experiential and embodied experiences played in their learning, indicating that experiential and embodied learning theories would be useful frameworks for analysis. Additionally, because the findings of this study suggest the importance of community and culture in developing an ecocentric worldview, and because a primary goal of transformative adult environmental and sustainability education is societal change, this topic requires analysis using social learning theories and systems learning models to further examine how individual learning is related to societal learning and transformation.

In the original formulation of this research, the role of culture and community in learning nature connection were to be examined more closely through an ethnographic study of a week-long nature connection adult education program, however, this became impossible during the worldwide pandemic. Close examination of the unique culture that these immersive nature connection programs create, as well as the communities that form through and are linked by these programs should also be undertaken in future research studies using anthropological and folkloristic frameworks to complement adult education perspectives on culture.

While qualitative studies may provide more in-depth description of the experience of learning nature connection and the process of developing an ecocentric worldview, quantitative research methodologies could be applied to this subject to provide a broader picture of this phenomenon. Currently, no normative scores exist for the NR tool, so it is not possible to

compare individuals' scores to the general population. However, a quantitative study that gathered information on the NR scores of the general population would be illuminating and instructive, as it would allow a better understanding of how prevalent nature relatedness is and could provide important demographic data on those who exhibit it. This data could, in turn, be further explored through targeted qualitative studies.

The current study involved participants from around the world, presenting a certain diversity of perspectives. However, cultural differences may play some role in the development of an ecocentric worldview and terra, place, and cultural indigeneity, particularly where there has been a significant history of immigration, as in the United States. It is likely that the unique social context of the U.S. will impact how individuals understand their relationships to place, and the current research would benefit from considering that context more explicitly. With context in mind, the process of developing nature connection and an ecocentric worldview in urban settings is crucial to understand as an increasing number of people migrate into urban centers (United Nations, 2018). For instance, future research could look specifically at the nature relatedness of immigrants to an urban environment. One such study might administer the NR tool to a sample of this population and then interview a subsample of participants about how their current scores reflect their relationship to their new urban environment and whether they would have answered the survey tool differently if they were currently in their home environment.

Final Reflections

When I first began this doctoral program in 2013, I was an educator in a different sense than I am now. At the time, I was fresh out of a master's degree program in folklore and working in education through arts and culture public programs as a folklorist. Over the last eight years I have changed careers, moved to a new state, and have come to understand adult education and

learning in entirely new ways. I am not the person or the educator I was when I began the Adult Education doctoral program, and my study of adult education has been a significant part of my development into who I am today.

One thing that has remained constant is my interest in education serving community. As a folklorist, my research focused on the shared cultural practices of communities and the educational programming I engaged in aimed to highlight the cultural practices of diverse groups of people who made up Pennsylvanian communities. As a composition instructor, I believed that understanding the community one lived in and one's responsibility to that community – civics, essentially – was an equally important goal in a college education as career development. Through my years researching and working with culture I had also begun to focus on how people became connected to the landscapes that they inhabit and how their cultural practices demonstrated and reinforced that connection. My research on Croagh Patrick and my personal experiences demonstrated that human relationships to landscapes were powerful elements of community and identity, often involving spirituality. When I came to the adult education program, I knew I wanted to pursue a program of study that examined how individuals learned to develop these relationships to place and become environmental stewards of their communities.

My first year in the program was eye-opening as I was introduced to new content as well as new pedagogical practices that were more dynamic than the lecture- and seminar-based classes I had previously experienced in graduate school. Learning about teaching while simultaneously being a learner and a teacher was like the experience of putting on my first pair of glasses – not only could I now see elements of my environment more clearly, but there were so many other elements that I hadn't even been aware of! And now they were fully visible for my inspection. Studying adult learning theory and educational philosophies illuminated the

theoretical underpinnings of teaching, making me more aware of the diversity of teaching approaches and the impact they each had on educational practice. My predilection for social theory was thoroughly indulged as I studied social and historical issues of the field and discovered how broad and relevant adult education truly is. Through the first year of courses I began to reshape my understanding of education as a practitioner, recognizing that I made choices as an educator and that those choices impacted my students.

Yet, while I was developing my pedagogical practice, I was struggling to find where my research interests fit into the field. I was at a loss as to how to apply the theoretical frameworks I had learned about to the phenomena I wanted to study, and, perhaps even more crucial, I hadn't identified a community that fit my research. An ethnographer at heart, I knew that accessing the enthusiasm necessary to complete a dissertation would require that I work with a community and culture that I was intrigued by. A pivotal moment came in the summer following my first year when I took a statistics course and the professor asked each student why they were passionate about their research subject. Searching for a clear picture of what my research subject was and how it was grounded in adult education, I was forced to admit that I didn't have an answer. I learned three important lessons from that seemingly simple class exercise. First, I learned the pedagogical importance of reflection in learning. I may have learned a lot about statistics from that course, only to forget it later, but that brief moment of reflection brought me to an insight that had far-reaching and meaningful repercussions. And that was the second lesson: as an educator, you never know what or how the pedagogical choices you make will impact your students. This reflection was just a simple but thoughtful ice breaker that was meant to frame the intimidating topic of statistics as a means to a more attractive end. Yet for me, it led me to realize that without a clear research topic grounded in my discipline that I could be passionate about I

was not ready to continue with the doctoral program and complete a dissertation. This final lesson led to my decision to take an extended hiatus from the program.

In the intervening years I moved from Pennsylvania to New York and eventually left the arts and culture nonprofit world to teach composition at Bronx Community College. I also began my journey with nature connection and discovered a community of other nature connection learners. As I reflected in my introduction to this dissertation, my experience at my first Art of Mentoring camp was orienting – it led me to the realization that I wanted to continue with my doctoral degree and that I wanted to use the theories of adult education to better understand the learning that was taking place in this community. This was the source of another pedagogical lesson for me, one that I had learned theoretically in my coursework, but now knew on a deeper level: “all genuine education comes about through experience” (Dewey, 1938, p. 13). Ultimately, my personal experiences learning about nature connection were just some of many significant experiences that led to my eventual return to adult education and the completion of this study.

My time living and teaching in the intensely urban environment of the Bronx has also had a significant impact on my study of adult education and my research. Teaching at Bronx Community College has made real the theoretical issues of learning in a non-native language, the impacts of social and economic disparity on education, addressing non-Western perspectives on learning, the impact of globalization on education, and, especially vivid during the pandemic, the use and access of technology in education. Living and working in the Bronx has also brought a new dimension to my understanding of nature connection as I consider my students’ experiences as city-dwellers and immigrants, and how those experiences impact their relationships to their socio-ecological environments.

Adult environmental educator Pierre Walter (2009) notes that there is a distinct ethnic and class-based bias in the environmental education scholarship that results in an emphasis on wilderness environmental education programs and overshadows urban environmental education and the environmental issues disproportionately affecting marginalized communities. As I complete this research study and my time in the adult education doctoral program, I am looking ahead to what comes next in my nature connection and education journeys. There is much work to be done to bring about a global shift towards an ecological consciousness, and I have learned transformation on an individual level is necessary for transformation of the entire system. I believe my role to play is to bring an awareness of interconnectedness to my work with learners in an urban setting, creating opportunities for them to make connections with their surroundings and find their own “ecological niche” (Plotkin, 2008). I am grateful for the tools, skills, and insights my many mentors and teachers have gifted me with which will allow me to do this work.

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Appendix A

Interview Questions

- What were your thoughts after taking the survey and seeing the results?
- Beginning with your relationship with nature BEFORE your nature connection journey began, what is your story of developing connection with nature?
- Describe your personal nature connection practice. What do you do to connect to nature? How often? Do you have a routine or is it more spontaneous?
- As your nature connection journey advanced, did you experience tension between the way you once understood the world and the way you came to understand the world through nature connection?
- If we think about your nature connection journey as a personal developmental process, I'm curious to know how self-knowledge has played a part and whether nature connection has helped you find and use your gifts and talents.
- Similarly, on this nature connection journey, how has your understanding and practice of community and culture evolved?
- Describe the nature connection community that you feel a part of.
- What is the culture of nature connection in the place where you live?
- How has being involved in a nature connection community, like AoM or any other, affected your personal feeling of connection to nature and your nature connection practice?
- I'd like to understand how your nature connection practices influence how you teach and mentor. How has your teaching and mentoring evolved as your connection to nature evolved?

I would like to finish with some theoretical questions for you as an educator. I'd like you to tell me about your understanding and the meaning it holds for you of three different frameworks that appear in nature connection and cultural regeneration work. We'll address them one at a time.

1. 8 Shields model and Art of Mentoring - What is your understanding of these frameworks and what meaning have they held for you as an educator/mentor?
 2. Bill Plotkin's work on soul and his 3 types of indigeneity – terra, ecological, and cultural. What is your understanding of these and what meaning have they held for you as an educator/mentor?
 3. Finally, I'd like to address the broad framework of community activism. My question is what is your understanding of the evolution of AoM or any nature connection community as a community of activists and what meaning does it have for you as an educator/mentor?
- Is there anything you'd like to add that I have not asked about?

Appendix B

Nature Relatedness Scale

Instructions: For each of the following, please rate the extent to which you agree with each statement, using the scale from 1 to 5 as shown below. Please respond as you really feel, rather than how you think “most people” feel.

1 Disagree strongly	2 Disagree a little	3 Neither Agree or Disagree	4 Agree a little	5 Agree strongly
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1. I enjoy being outdoors, even in unpleasant weather.

2. Some species are just meant to die out or become extinct.

3. Humans have the right to use natural resources any way we want.

4. My ideal vacation spot would be a remote, wilderness area.

5. I always think about how my actions affect the environment.

6. I enjoy digging in the earth and getting dirt on my hands.

7. My connection to nature and the environment is a part of my spirituality.

8. I am very aware of environmental issues.

9. I take notice of wildlife wherever I am.

10. I don't often go out in nature. _____

11. Nothing I do will change problems in other places on the planet.

12. I am not separate from nature, but a part of nature.

13. The thought of being deep in the woods, away from civilization, is frightening.

14. My feelings about nature do not affect how I live my life.

15. Animals, birds and plants should have fewer rights than humans.

16. Even in the middle of the city, I notice nature around me.

17. My relationship to nature is an important part of who I am.

18. Conservation is unnecessary because nature is strong enough to recover from any human impact.

19. The state of non-human species is an indicator of the future for humans.

20. I think a lot about the suffering of animals.

21. I feel very connected to all living things and the earth.

Scoring Information

Reverse scored items: 2, 3, 10, 11, 13, 14, 15, 18; NR-self items: 5, 7, 8, 12, 14, 16, 17, 21; NR-perspective items: 2, 3, 11, 15, 18, 19, 20; NR-experience items: 1, 4, 6, 9, 10, 13

Overall NR score is calculated by averaging all 21 items (after reverse scoring appropriate items). Scores on the 3 NR dimensions are also calculated by averaging appropriate items after reverse scoring.

A short-form version of the NR scale (NR-6) consists of items: 4, 5, 7, 9, 17, 21. Items are averaged to create a score on the brief measure of NR. No items are reverse scored.

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VITA

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