Monsters or Good Guys: The Mediating Role of Emotions in Transforming a Young Child's Encounter with Nature

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Abstract

Nature-play inspires a sense of awe and wonder in young children, however, the uncertainty of elements in nature can also bring about fear and anxiety. Using sensory tours as a data collection method, this qualitative study explores the emotions of a four-year-old during his exploration of an imaginary "monster castle" in the forest, and the role an educator plays in supporting children's affective states. Negotiating emotions, both positive and negative, is important in strengthening a child's environmental identity. Just as children learn to regulate emotions in formal learning environments, their ability to regulate their emotions in nature instills a sense of comfort and trust, spatial autonomy and self-awareness, and environmental competency and self-confidence, which, in turn, influences their actions for the environment.

Résumé

Le jeu dans la nature est source d'émerveillement chez les jeunes enfants; toutefois, la nature peut aussi être source d'incertitude et donc causer de la peur et de l'anxiété. En utilisant GoPro Tours comme méthode de collecte de données, cette étude qualitative examine les émotions d'un enfant de quatre ans qui explore le « château d'un monstre imaginaire » dans la forêt, ainsi que le rôle joué par l'éducateur pour encadrer les états affectifs de l'enfant. Ce dernier a besoin d'apprendre à maîtriser ses émotions, tant positives que négatives, pour renforcer son identité environnementale. Bien que les enfants aient l'occasion d'apprendre à réguler leurs émotions dans les milieux d'apprentissage formels, le même exercice réalisé dans la nature leur instille aisance et confiance, leur enseigne l'autonomie spatiale et la conscience de soi, et leur permet d'acquérir de l'assurance ainsi qu'un sentiment de compétence environnementale, tous des attributs qui, en retour, influencent les actions qu'ils posent pour l'environnement.

Keywords: young children, emotions, environmental identity development, nature play, exploration

Introduction

Emotions fluctuate from moment to moment, from one extreme to another in the lives of young children. From happy and elated to frustrated and angry, from confident and motivated to frightened and withdrawn, affective states drive children's engagement with and are influenced by their environments

(Boyer, 2014). In nature, children's emotions are affected by environmental stimuli, that is, their interactions with living and non-living objects. Nature has long been recognized as a setting that stimulates children's curiosity and wonder (Carson, 1956; Wilson, 2012), however, less attention has been given to the negative emotions children experience in nature and how overcoming the tensions inherent in such states influences children's environmental identity development. Rather than overgeneralize nature as a place of pure happiness and joy, this qualitative study explores the various emotional states experienced by a child during his imaginary play in the forest and the role that an educator or caregiver plays in supporting a child's regulation of such experiences.

Background

Socio-Emotional Development in Young Children

Development in the socio-emotional domain occurs rapidly in young children (between birth and eight years old). During this critical period, children's ability to enact and perceive various emotions in themselves and others becomes more sophisticated and complex. From the expression of a few basic emotions (love, joy, anger, sadness, and fear) in infancy, by the first few years of life children express a wide range of emotions including frustration, worry, pride, and guilt (Boyer, 2014). Boyer (2014) characterized emotions as having similar properties as a reaction: "It often has an identifiable cause or stimulus; it is usually brief, spasmodic, intense experience of short duration; and the person is typically much aware of it" (p. 11). Emotions can be distinguished from a mood, whereas "a mood tends to be more subtle, longer lasting, less intense, more in the background, a frame of mind, casting a positive or negative light over experiences" (Boyer, 2014, p. 11). Both emotions and moods influence actions. Facial expressions and body language are important conveyers of a child's mood or emotional state (Boyer, 2014).

As their repertoire of emotions expands, young children begin to identify and recognize their own feelings and the feelings of others. They attach labels, or names, to identify basic emotions, pairing specific emotions with certain facial expressions or behaviours (e.g., "that girl feels sad because she is crying") (Boyer, 2014). Empathy also emerges during early childhood and is generally applied towards familiar people or objects. Empathy, or the ability to feel what someone else is feeling, promotes pro-social and helping behaviours as well as moral decision-making (McDevitt & Ormrod, 2013).

Chawla (1998) noted two definitions of empathy that inform how children relate with the natural environment. The first involves projecting one's own feelings towards an ecosystem perceived as having no intrinsic feelings. This is closely related to anthropomorphism, which involves attributing human qualities to nonhuman entities. By attributing human-like qualities to say a tree or

a beetle, children express "feelings of empathy for the object that permit it to be regarded as something worthy of moral consideration" (Gebhard, Nevers, & Billmann-Mahecha, 2003, p. 92).

A second type of empathy involves recognizing ecosystems as "living wholes with intrinsic intelligence, feelings, needs, or rights (Chawla, 1998, p. 12). Similarly, Hungerford and Volk (1990) referred to environmental sensitivity as "an empathetic perspective towards the environment" (p. 11). However, Chawla (1998) argued that "environmental sensitivity is not empathy, but instead a predisposition to take an interest in learning about the environment, feeling concern for it, and acting to conserve it on the basis of formative experiences" (p. 19). In other words, while empathetic feelings may inform environmental sensitivity, environmental sensitivity also involves knowledge about the environment, which, combined, promote environmental responsibility or action (Metzger & McEwen, 1999).

Another important socio-emotional skill gained during the early years is self-regulation, or the "process of directing and controlling one's personal actions and emotions" (McDevitt & Ormrod, 2013, p. 79). Emotional regulation refers specifically to the strategies children develop to manage their affective states (McDevitt & Ormrod, 2013). Children learn to regulate their actions and behaviours resulting from both positive and negative emotions. For example, when a young child feels angry, she may react by physically hitting another child. With guidance from adults, children eventually learn how to constructively express their anger verbally instead of physically (Cole, Armstrong, & Pemberton, 2010). Young children learn cultural norms and standards for emotional expression, including what behaviours and actions are acceptable and unacceptable within various settings, including home and school (Boyer, 2014; Morelli & Rothbaum, 2007). Little has been written about children's emotional regulation in nature. While some have discussed nature as a restorative setting for processing and regulating one's feelings (Kaplan, 1995; Korpela, Hartig, Kaiser, & Fuhrer, 2001), none have discussed how young children learn to regulate their emotions and behaviours in response to natural stimuli.

Emotions and Learning

Neuroscience has provided evidence that emotions are fundamental to learning (Hinton, Miyamoto, & Della-Chiesa, 2008). Accomplishment of a learning task is dependent on three brain networks—recognition, strategic, and affective—working together (Hinton et al., 2008). The recognition network "receives sensory information from the environment and transforms it into knowledge;" the strategic network is responsible for "planning and coordinating goal-oriented actions;" and the affective network is "involved in the emotional dimensions of learning such as interest, motivation and stress" (Hinton et al., 2008, p. 91). Fear and stress hinders the recognition and strategic network of the brain, which activates learning. Fear conditioning occurs when an aversive stimulus is paired

with a neutral context or stimulus, resulting in an expression of a fear response to an originally neutral context (Phillips & LeDoux, 1992). For example, a child encounters a snake (aversive stimulus) when playing in a ditch in his backyard (originally a neutral context). As a result of his fright, the child will no longer go into a ditch or trench when he plays outside. This in turn plays a detrimental role in his environmental exploration and if not addressed could negatively influence his environmental identity development. There are many situations in which fear conditioning can develop in natural learning environments.

Cognitive appraisal is a technique that can be used for regulating negative emotional reactions (Hinton et al., 2008). Through this process, a person would reevaluate the situation as safe and harmless and reaffirm his or her own abilities. Educators play an important role in reducing stress or fear in learning environments through supporting children in communicating their difficulties, establishing an environment where it is okay to make mistakes, and helping children develop strategies to cope with and overcome negative experiences (Hinton et al., 2008). For instance, in the example of a child's fear of ditches, the educator may invite the child to verbalize his fears, help him to identify the different types of snakes that inhabit the region, and teach him how to appropriately act when encountering a snake. Equipped with skills and strategies, the child can develop a sense of confidence to overcome his fears.

While negative emotions can be detrimental to learning, positive emotions can drive a person's motivation to engage in learning. Situations influence emotions and emotions direct actions; thus, situations associated with positive emotions are approachable and desirable (Boyer, 2015). A primary goal then is to encourage intrinsic motivation, or children's innate desire to explore and learn; educators can increase intrinsic motivation through fostering children's sense of self-efficacy, competency, and autonomy, and by relating learning to matters that are important to them (Hinton et al., 2008; McDevitt & Ormrod, 2013).

Emotions and Environmental Education

Environmental education research has shown that environmental emotions play a significant role in influencing environmental behaviour (Camri, Arnon, & Orion, 2015; Zeyer & Kelsey, 2013). These studies revealed that although students possessed knowledge about the environment, knowledge (objective or subjective understanding) is not enough to stimulate environmental behaviour; in turn, environment knowledge *must* be mediated through environmental emotions (Camri et al., 2015). Specifically, Zeyer and Kelsey (2013) found that although youth can readily recite the facts regarding the global state of the environment, their response to these concerns portrays a "pessimistic mood," "motive of guilt," and "lack of feeling of control" (p. 207). Subsequently, environmental education approaches must address the affective domain and recognize the role emotions play in creating environmental hope or environmental despair (Hicks, 2014; Kelsey & O'Brien, 2011).

Two decades ago, Sobel (1996) argued that environmental education approaches were placing too much emphasis on teaching about environmental problems, resulting in children developing a sense of helplessness or fear of nature. Global issues such as oil spills and now global climate change were being placed on children's shoulders much too early; instead, Sobel (1996) argued "that children [should] have the opportunity to bond with the natural world, to learn to love it and feel comfortable in it, before being asked to heal its wounds" (p. 13). In line with Sobel's (1996) argument, research on formative childhood experiences shows that an early connection to nature plays a significant role in shaping environmental values and behaviours (Chawla, 1998; Well & Lekies, 2006). Hence, connecting or reconnecting children to nature has become one of the primary goals of environmental education.

Research shows that providing children with early opportunities to play in nature has physical (Fjørtoft, 2001) as well as psychological and social benefits, including stimulating fantasy and imaginary activities, promoting discovery and exploration, encouraging risk-taking and the development of environmental competencies, and fostering a sense of autonomy (Chawla & Rivkin, 2014; Dowdell, Gray, & Malone, 2011; Green, 2011; 2013; 2015). Little research, however, has specifically focused on the emotional dimensions of young children's encounters with nature, although these can somewhat be inferred by the literature. It is widely recognized that having positive experiences in nature invokes all the senses, promotes a sense of wonder, instills aesthetic sensitivity, builds children's self-confidence and a healthy self-concept, and promotes nurturing and caring behaviours (Carson, 1956; Elliot, 2010; Louv, 2008; Wilson, 2012). Negative or lack of experiences in nature may result in depression and anxiety or fear and insecurity (Bixler, Carlisle, Hammitt, & Floyd, 1994; Louv, 2008). This study aims to advance understanding of the various emotional encounters children may experience in nature, along with the role that educators play, through closely examining a child's exploration of an imaginary monster castle in the forest.

Theoretical Framework

In this study, the Environmental Identity Development framework (Green, Kalvaitis, & Worster, 2016) was used to interpret a child's emotive state and related actions during his exploration of a forest. Environmental identity is an aspect of a person's self-identity, involving a "sense of connection to some part of the nonhuman natural environment" ; it is "based on history" and/or "emotional attachment" and influences one's perceptions and behaviours toward the natural world (Clayton, 2003, pp. 45-46). A person's environmental identity can range on a scale from low to high, with a stronger environmental identity being demonstrated by one's willingness to take action on behalf of the environment (Clayton, 2003).

Green et al.'s (2015) Environmental Identity Development model, illustrated in Figure 1, considers how a child's environmental identity progresses

through experiences *in*, *with*, and *for* nature (Lucas, 1979). Environmental identity development focuses not only on how nature affects the growth and development of young children, but also how children, as they grow and develop, shape and influence natural settings. In other words, children are active agents in the construction of their environmental identity. Familial, sociocultural, and geographical contexts also influence the way in which a child's environmental identity develops (Green et al., 2015).

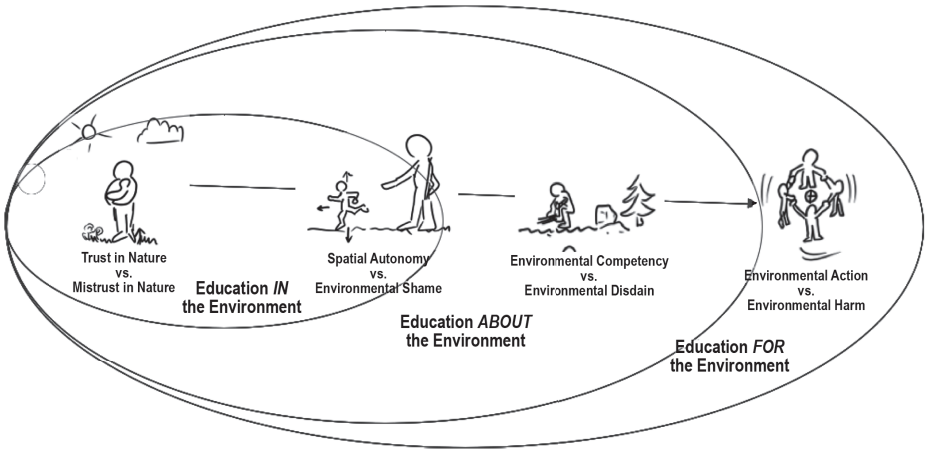

Figure 1. Model of Environmental Identity Development
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The Environmental Identity Development model reveals an interdependent system of ever-broadening circles that builds from one progression to the next. Establishment of *Trust in Nature*, feelings of assurance and comfort, versus *Mistrust in Nature*, feelings of anxiety and discomfort, is foundational to a child's progression of environmental identity development. Through frequent and positive encounters with nature, children gain a sense of trust and confidence, which propels them to venture out, independently or collectively, to achieve *Spatial Autonomy* through exploring and claiming their own places. Fantasy play and manipulation of natural objects enhances children's *Spatial Autonomy* and contributes to their sense of individuality, personal dignity, and self-esteem (Laufer & Wolfe, 1977; Proshansky & Fabian, 1987). Contrary to *Spatial Autonomy* are feelings of doubt or *Environmental Shame;* such negative emotions occur when a child is discouraged from independent exploration or repeated anxious encounters with nature cause a child to feel inadequate. *Spatial Autonomy* thus promotes children's acquisition of *Environmental Competency*, or feelings of pride or confidence gained through the development of skills and knowledge "to use the environment to carry out one's goals and to enrich one's

experience" (Hart, 1979, p. 225). Lack of opportunities to take initiative could lead to *Environmental Disdain*, or feelings of contempt or disinterest that separate children from the natural world. Combined together, strong feelings of *Trust in Nature, Spatial Autonomy,* and *Environmental Competency* promote *Environmental Action,* demonstrated through acts of care for the environment. In contrast, lack of progression in any one of the preceding environmental identity attributes may lead children to develop dispositions leading to *Environmental Harm,* that is, ignorance of or a disregard for the natural world. Environmental identity development is fluid, meaning that the various progressions are frequently revisited, refined, and/or reestablished with new encounters and experiences *in, with*, and *for* nature throughout one's life.

Negotiating emotions, both positive and negative, is important in strengthening one's environmental identity. Just as children learn to regulate their emotions in formal learning environments, children's ability to regulate their emotions in nature instills a sense of comfort and trust, spatial autonomy and self-awareness, and environmental competency and self-confidence, which, in turn, influences their actions and behaviours towards the environment. Caregivers and educators play a key role in promoting children's healthy environmental identity development; particularly in helping children regulate their emotional experiences in nature. Adults should attend to both children's physical (ensuring comfort and warmth) and psychological needs (providing care in times of distress) during nature encounters (Green et al., 2015).

Research Questions

To explore young children's emotional encounters in the natural world, this qualitative study examines a child's experience of his imaginary monster castle in the forest, addressing the following research questions: (a) What emotional states are experienced by a child during his exploration in the forest? (b) How do these various emotions influence a child's actions and interactions in nature? (c) How might the navigation of emotions and the resulting actions/interactions support a child's environmental identity development? and (d) How might educators support children in navigating their emotional experiences in nature?

Methods

Findings presented in this paper are derived from a larger participatory action research project aimed at exploring methods for engaging young children as active researchers. The research was inductive and exploratory, meaning that while there was some general structure to the overall project, the process evolved and emerged based on children's interests (Bogdan & Biklen, 2007). The study was set against the backdrop of children's open-ended exploration and play in a

subarctic boreal forest. The children, with their teachers and researchers, visited the same patch of forest 11 times for approximately an hour over an 8-week summer period. The teachers supported the children in exercising agency in choosing where they wanted to explore, what activities they wanted to engage in, and by permitting risk-taking activities (climbing trees, hanging on branches). However, they were always nearby to monitor and ensure children's safety while in the forest. Socio-culturally and geographically speaking, the children who participated in this study live in a place where nature can be extremely dangerous and unpredictable (extreme cold in the winter, dangerously smoky days in the summer, encounters with moose or other potentially precarious animals).[1] Subsequently, the children learn (with guidance from adults) the skills necessary to survive in these conditions. To varying degrees, these factors play a role in children's environmental identity development and how they interact with their environment.

This paper focuses on the emotional experiences of a four-year-old boy, Sergo, on his eighth visit to the forest during his exploration of an imaginary monster castle (tree). Sergo is an English Language Learner and spoke only Russian prior to attending the preschool six months earlier. Sergo has a very strong-willed personality and frequently initiated the play and imaginary activities among his peers. However, because he was still developing his English language skills, communication with his peers and teachers was a bit challenging.

Although several methods were implemented in the larger research project, the scene presented in this paper is drawn from a 17-minute transcribed sensory tour in which Sergo (wearing a small camera around his forehead) leads two of his peers and teacher to a "monster castle" (tree) in the forest. Sensory tours are a new data collection method conceived for this project to engage children in collecting video data of their own lived experiences in the forest (Green, 2016). A sensory tour tells the story from the perspective of a child, capturing what they see, hear, touch, and how they interact with others and their environment. The structure of the sensory tours was open-ended; children were simply invited to wear a small wearable camera during their free play and exploration in the forest. Overall, the children indicated that they enjoyed wearing the cameras. They are lightweight and noninvasive; once they were placed on the children's foreheads, they seemed to forget that they were wearing them. Tours lasted as long as the children were interested. If a child decided they no longer wanted to wear the camera, they simply found an adult and asked to have it removed.

As part of the larger project, children were invited to engage in data analysis and interpretation; they viewed the video footage and photographs of their forest activities and described their experiences during group discussions and bookmaking activities. Subsequently, Sergo recalled his monster castle while making a book page about his experience. He remembered the monster castle and accurately pointed out its location in a photograph that he chose for his book page (see Figure 2). The book page includes Sergo's quoted descriptions of his

experiences. This increases the trustworthiness of the findings, illustrating how Sergo interpreted the monster castle as significant to his lived forest experience.

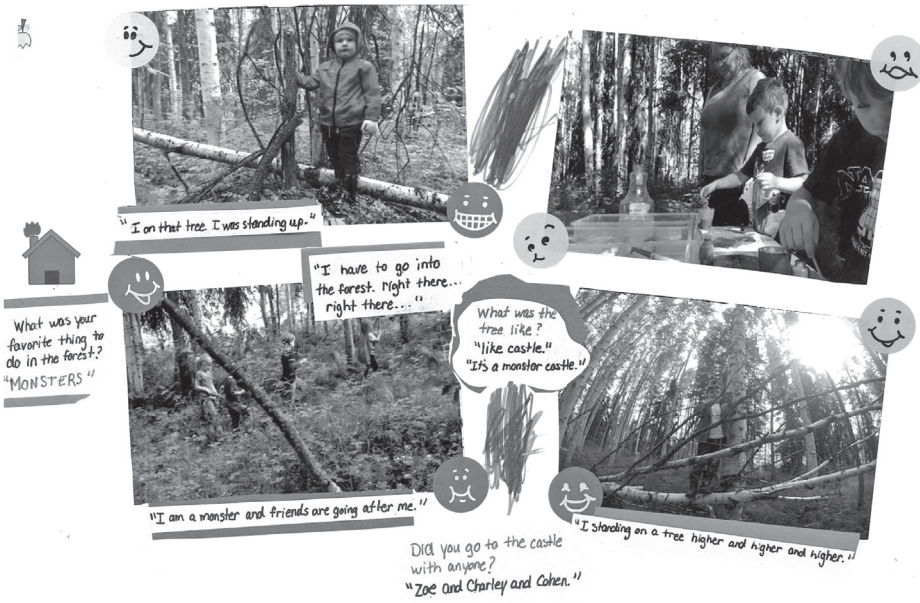

Figure 2. Sergo's book page of his forest experience

Findings

The scene begins when Sergo, along with Rebecca, Charles, and his teacher, search for a "castle" and "home" in the forest. Sergo leads the group to the "monster castle," a large fallen birch tree. Sergo balances the main stem of the tree, which rises four feet above the ground.

Feeling of Home

Sergo: *I like a castle…*
Teacher: *Does this look like a castle?* The teacher points to an area nearby.
Sergo: *It feels like home… Me go… I like home.* He points to trees further away.
Teacher: *Show me where…show me where it feels like a castle, it feels like home.*
Sergo: *Right there.* He points to the same area of trees.
Sergo: *No…making a home…*
Teacher: *Show me where.*

Sergo: *I don't know.*
Teacher: *Rebecca do you want to lead us? Show us where to go?* Rebecca does not respond.
Sergo: *Right there home.* Sergo points again to the same area of trees.
Teacher: *Okay lead us.* Sergo leads the group down a small trail.
Sergo: *Come on…I show you where monsters go, there's home*.
Sergo: *Right here!* He yells to the group.
Teacher: *What do you see?*
Sergo: *I see a wood, home. Right here is a home.* He points to a large fallen birch tree. He continues to move towards the tree, looking back to the group several times to make sure they are following.

Sergo verbally and non-verbally expresses his excitement and interest in his castle. "I like a castle. It feels like home…" The castle feels like a home to Sergo and although the teacher suggests an alternative location, Sergo indicates his desire for *Spatial Autonomy* by stating that he was "making a home." Sergo's persistent actions of leading the group towards the "castle" reveal his confidence and determination. As Proshansky and Fabian (1987) explain, gaining a sense of spatial autonomy supports children in developing their individuality and self-esteem. His teacher supports Sergo in his quest for *Spatial Autonomy* by allowing him to lead the group.

Figure 3. Sergo's Monster Castle

Environmental Competency in the Climb

Sergo moves towards the fallen tree, climbing up a smaller branch that extends over the trunk.
Sergo: *That's oh… oh.* Gaining his balance, Sergo pauses between two upright trees a few feet above the ground.
Teacher: *Is that the fort?*
Sergo: *Yeah, I find it. That's our home. I found our home.* He climbs up the large log. Charles looks at Sergo and smiles, indicating his desire to join him.
Charles: *Can I do that?*
Sergo: *No, this hold five people and this end hold two people.* Sergo hangs on the branches and loses his grip, falling to the ground.
Sergo: *Ahhh!* He lands on his feet and walks back to the lower part of the tree to climb back on.
Sergo: *This is scary. This branch is scary. I try right there.* He climbs back on and balances his way across the small branches.
Sergo: *Help me! Help me!* Charles climbs on the smaller branches that cross over the larger tree.
Sergo: *Uh-oh that's scary.* Sergo leans over climbing slowly up, holding the smaller branches for support.
Teacher: *You can do it!*
Charles: *Well, it is not scary for me.* Sergo makes his way to the top and holds the upright trees for balance.

Children gain *Environmental Competency* through using "the environment to carry out one's goals and to enrich one's experience" (Hart, 1979, p. 225) which, in turn, contributes to feelings of pride and confidence (Green et al., 2015; Hart, 1979). In this scene, Sergo expresses his confidence through establishing the castle rules and letting Charles know who and how many people can stand on the log. Sergo also demonstrates confidence in overcoming his fears. Although Sergo loses his footing and falls twice, he tries again. Charles' statement of "it is not scary for me" and his teacher's encouraging words, "you can do it" provide Sergo with motivation (Hinton et al., 2008). He ascends to the top of the tree, gaining a sense of *Environmental Competency*.

Imagining a Dinosaur and Monster Castle

Sergo moves the dead branches up and down, holding them to keep steady. He points to a limb.
Sergo: *This one here, Teacher, this here is monster. This here is monster. And it goes rahh!!! RAH!!!! RAH!!! RAH!!! RAH!!! RAH!!!* He moves two branches apart and back together, shaking them at each other.
Teacher: *Sergo, what did you make?*
Sergo: *This is dinosaur.* He points to one of the branches.

Teacher: *Dinosaur?*
Sergo: *Yeah.*
Teacher: *What part of the dinosaur is that?* Sergo points to the other stick.
Sergo: *This one is more like people and this one is going Rah! Rah!* He grooms the small limbs off the larger branch. He shows how the two sticks fight (the dinosaur and people). A "people" stick breaks off and falls to the ground.
Sergo: *Uh-oh. That's okay*. *Rah! Rah!* Sergo continues to shake the "monster" stick around.
Teacher: *What part of the…? Oh*…The teacher becomes distracted with the other children.
Sergo: *This is dinosaur. Right there, right there, and right there. This all dinosaur*. Sergo points to all the branches sticking out of the tree.
Teacher: *Dinosaur?*
Sergo: *Yeah.*
Sergo: *This is dinosaur castle. This is dinosaur castle*.

In early childhood, fantasy play and manipulation of natural objects contributes to children acquiring a sense of *Spatial Autonomy* (Green et al., 2015). Through his imagination, Sergo transforms the dead limbs into monsters and dinosaurs. Sergo attributes sounds to the limbs, "*RAH,"* making the monsters come alive. The teacher supports Sergo in exercising his imagination and individuality. His play with the limbs becomes more intense; he shakes the limbs back and forth and a limb breaks and falls. Sergo notices but does not become discouraged; he continues to enact the battle between the people and the monsters.

The Fall and Loss of Confidence

Sergo continues to shake around the various limbs.
Sergo: *Ahh!* He bends over, momentarily losing his balance but still maintaining his grip.
Sergo: *Me go there. That's me go there*. Sergo points to the ground and removes a bandage from his finger.
Sergo: *Here's that, here*…. He reaches towards the teacher, attempting to hand her his bandage. The teacher does not notice Sergo.
Sergo: *Ugh…I can't see.* He attempts to get down from the tree, slowly stepping down the high log and holding onto loose branches for stability.
Sergo: *Ahhh*… Sergo is struggling to get down. The teacher notices.
Teacher: *Just a minute…. Tell me about the dinosaurs. Sergo, get back up there.*
Sergo: *Me go down.* Sergo looks down. The branch that he is holding is not sturdy; it swings around and Sergo falls off the tree.

Sergo loses interest in the castle. His mood changes from curious and excited to disinterested and weary. He is ready to get down and attempts to

communicate this desire to his teacher. He tries to gain her attention by removing a bandage from his finger, but she does not notice. No longer confident in his abilities, Sergo states, "I can't see…" The teacher notices Sergo's desire to descend the tree and tries to convince him to remain in his castle. He is determined to get down, yet he struggles and lacks the confidence and skills to maneuver the unsteady branches. He falls.

Defeat

Sergo: *Ow…oww!* Sergo cries very loudly on the forest floor.
Sergo: *Ouch…my knee.* He continues to cry in pain. The teacher makes her way around the forest foliage to Sergo.
Teacher: *Look here, Sergo, you're okay. Come here, Sergo, jump up.* Sergo is still crying.
Teacher: *Sergo, look at me. Look at* me. *You're okay. Stand up.* Sergo is now sobbing.
Teacher: *Stand up.*
Sergo: *I can't stand up because of my ouchy.*
Teacher: *I can't reach you right now. You have to stand up.*
Sergo: *Oww…Owww… Oww!* Sergo slowly stands up.
Teacher: *Are you okay?*
Sergo: *No.*
Teacher: *I know that scared you - didn't it? I know… I know. It's okay. It took me a minute to reach you, but do you need a little hug?*
Sergo: *No.*

Sergo succumbs to his emotions of hurt and shame; he lays on the forest floor in defeat. With the fall, his poise changes starkly from the confident and assured demeanor that allowed him to successfully climb the tree. He weeps in anguish for several minutes as his teacher makes her way to him. Scared and insecure, Sergo hesitates to move, expressing his emotions loudly through tears and sobbing. The teacher reassures him, "you're okay" and tells him to "stand up." Sergo hesitates, but slowly stands when the teacher reaches his side. The teacher offers a hug for physical comfort. Sergo is disinterested.

The Re-Climb

Teacher: *Are you ready to go back?*
Sergo: *Yeah.*
Teacher: *Or do you want to climb back on there?*
Sergo: *Yeah…it's scary.*
Teacher: *It's scary, do you want me to hold your hand this time? Do you want to try again and I'll hold your hand?*
Sergo: *Yeah.*

Teacher: *Okay. Go right back over there. Go right back to the beginning and I will hold your hand this time.* Sergo goes to the low part of the tree to climb back on. He runs into a rosebush.
Sergo: *Oww… A sticker bush is scary*.
Teacher: *If you want to get up there you can. You don't have to but if you want to you can and I will hold your hand.* Sergo climbs back on the tree with his teacher holding his hand.
Teacher: *Careful steps, careful steps.* Sergo is whimpering as he slowly climbs up. He reaches the loose swinging branch that he previously held.
Teacher: *Be careful. Those are breakable.*
Sergo: *Why breakable?*
Teacher: *These are breakable, do you remember how easily they break? Sergo, do you want to finish telling me about the dinosaurs?*
Sergo: *No.*
Teacher: *No? Okay. Is this still a castle?*
Sergo: *No.*
Teacher: *No, what is it now?*
Sergo: *I don't know.*
Teacher: *You said it was a dinosaur home.*
Sergo: *No.*
Teacher: *What was it?*
Sergo: *It was me and Charles' and friends.*
Teacher: *You and Charles' what?*
Sergo: *Go with friends.*
Teacher: *Oh I see. But you got back up there when you fell. You can make it a house if you want, a fort if you want, a castle?*
Sergo: *It's me pull guys*.
Teacher: *I didn't understand you, honey.*
Sergo: *It's me pull guys.*
Teacher: *Hmmm… I can't tell for sure.*
Sergo: *It's me good guys. It's me good guys!*
Teacher: *Okay. Is it still monsters?*
Sergo: *No it's me….good….and guys*.
Teacher: *Oh, it's you and girls and guys.*
Sergo*: Guys, good and guys*.
Teacher: *Girl and guys.*
Sergo: *No. Good and a guys*.
Sergo: *It's me and a scary because it's me and it's tree and it's broken and it's me and it's scary and it's dead.*
Teacher: *It's tree and it's broken.*
Sergo: *Yeah and it's broken there and there and there and it's scary.*
Teacher: *Yeah. What happened when it broke?*
Sergo: *It's scary and…*

Teacher: *It's scary?*
Sergo: *Yeah.*
Teacher: *And what did your body do?*
Sergo: *I don't know.*
Teacher: *Well, did you fall?*
Sergo: *Yeah.*
Teacher: *What are you pretending this to be?* She points to the branch where Sergo is standing.
Sergo: *I don't know.*
Teacher: *Earlier you said it's a castle. Is it still a castle?*
Sergo: *No.*

The teacher invites Sergo to climb back up the tree. Sergo expresses his fear of the branches. Yet with the teacher's guidance, Sergo faces his fears and re-climbs the tree. He lacks the confidence and assurance that he previously had, which allowed him to ascend up the tree unassisted. In his particular state of mind, other aspects of the environment (i.e., a rosebush) also appear scary. The teacher holds his hand, not forcing but strongly encouraging him to climb back up his castle, "careful steps, careful steps." Sergo whimpers, revealing his anxiousness and insecurity. He returns to the loose branch where he fell and the teacher warns that the branches are "breakable." Sergo asks, "why breakable?" and the teacher reminds him that the limbs had broken previously. The teacher supports Sergo in building his *Environmental Competency* by teaching him the branches are not stable. His teacher invites Sergo to return to his monster castle. However, in his state of mistrust, Sergo is no longer interested in the monsters or dinosaurs; instead, he transforms the limbs into good guys. The tree is no longer his castle, a place where he feels confident and brave. With encouragement, Sergo recalls the scary experience of the fall and the elements of the tree that were unstable and uncertain (e.g., the broken branches). The re-climb allows Sergo to face his fears in nature.

Discussion

Emotions, Actions, and Interactions with Nature

Sergo experienced a variety of emotions during his forest exploration. His emotions not only shaped his experiences in nature, his experiences in nature influenced his emotions. While positive emotions prompted his exploration and imagination, negative emotions hindered his desire to creatively engage with nature. Although he was able to articulate his fear of the "sticker bushes" and "branches" and actively expressed his hurt after the fall, he did not explicitly state his positive feelings; rather, his body language and actions revealed his confidence and determination (Boyer, 2014).

Sergo's monster castle encounter provides an illustrative example of how children attribute human-like qualities to natural objects (Gebhard et al., 2003). He assigned monster-like sounds and actions to the limbs of the tree. The significance of the meaning that he attributed is validated in his recall of the monster castle in a subsequent bookmaking activity. When asked what he liked best about the forest, Sergo fondly remembered his experience with the monster castle, stating that he felt "happy" in demonstrating the personal connection he had forged with that particular environment (see Figure 2).

Informing a Child's Environmental Identity Development

In considering how Sergo's emotional encounters in the forest influenced his environmental identity development, Sergo's desire to search for a castle home depended on the sense of security and *Trust in Nature* he had previously established in that particular forest. After several visits to the forest, he had become familiar and comfortable with the landscape and its environmental features. Such feelings of security and assurance prompted his quest for *Spatial Autonomy*, which he found in discovering his monster castle. The castle was not just *a* castle, but it was *his* castle, *our* castle—a place he desired to share with his friends. Although he actively invited his friends to come to the castle, he did not specifically invite his teacher. This finding coincides with previous research that shows that young children seek spatial autonomy, or a special place, to discover who they are. Although children may actively show their places to adults, adults are rarely invited to enter into children's claimed spaces (Green, 2011, 2013, 2015). Additionally, Sergo's pride and determination also allowed him to build and refine his *Environmental Competency* (Green et al., 2015; Hart, 1979). Through his imagination Sergo invented his own world, transforming a birch tree into a castle home and limbs into monsters and dinosaurs. He also gained ecological awareness by learning that brittle and unstable branches are not always reliable for maintaining balance. Although the monster castle event does not demonstrate Sergo's engagement in *Environmental Action*, it does show how nature has begun to build Sergo's self-confidence and a healthy self-concept (Elliot, 2010; Louv, 2008). Furthermore, significant life experience research suggests that his personal connection with the forest may play a role in shaping his future environmental values and behaviours (Chawla, 1998).

Educational Implications

Finally, Sergo's monster castle experience was influenced by his teacher's encouragement and support. When Sergo communicated his desire to search for a castle, his teacher invited him to take the lead and encouraged his peers to tag along. The teacher also engaged in dialogue with Sergo and encouraged conversation between Sergo and his peers. This helped him articulate his thoughts and experiences of the monster castle. When Sergo was initially afraid of climbing

up the branches, Sergo's teacher cheered him on, stating, "You can do it!" Additionally, encouragement from his peer fostered Sergo's confidence to climb the tree.

The teacher also helped Sergo navigate elements of the environment that caused him hurt, fear, and anxiety. After his fall, Sergo found it difficult to deal with his physical pain and his wounded sense of pride. His teacher came along his side, helped him up, offered a hug, and encouraged him to get back on the tree. She held his hand and guided him as he climbed back up. Although Sergo never returned to his confident and assured self that allowed him to ascend the tree to battle monsters, he did face his fears and recognize the danger of the "breakable" branches. In this way, the teacher encouraged Sergo's emotional regulation by helping him engage in cognitive appraisal of the situation (Hinton et al., 2008). She prompted him to reevaluate the situation that caused him to fall (the breakable branches) and reaffirmed his confidence in his ability to balance up and down the log. Sergo was also encouraged to communicate his fears and learn strategies to overcome his negative experience.

Indeed, Sergo recalled his monster castle with eagerness and excitement rather than fear and hurt during a subsequent bookmaking activity a few weeks after the forest visit. This, in turn, indicates an internal negotiation of the negative emotions associated with his experience in nature. If the teacher would not have encouraged Sergo to face his fears, would his last impression of his monster castle been that of defeat and despair? Would Sergo have recalled his monster castle with pride and excitement? We can assume not, since research suggests that humans tend to avoid situations that are associated with negative emotions (Boyer, 2015; Hinton et al., 2008).

Conclusion

While nature is awe-inspiring and provokes a sense of wonder, the natural world also contains elements of uncertainty that may cause fear or anxiety. In promoting early experiences in nature, environmental educators should not only support children in discovering their own sense of place and developing a sense of agency in the environment, they should also support children in negotiating emotional tensions, or the negative emotions they may experience in facing environmental features that are "scary." Sergo's teacher exemplified the role environmental educators can play in supporting both positive and negative emotional encounters in nature. Because environmental emotions play such a significant role in mediating environmental behaviours (Camri et al., 2015; Zeyer & Kelsey, 2013), environmental educators should be keenly aware of the emotions that learners encounter in environmental and nature-based experiences. Emotional regulation and environmental competency are learned through shared experiences with others; peers and adults play an important role in helping children acquire the knowledge and skills applicable for particular

situations and environments. The literature reveals that young people may be attributing negative emotions to environmental situations (Hicks, 2014; Kelsey & O'Brien, 2011; Sobel, 1996). Thus, more attention needs to be given to understanding how environmental educators can best support learners in navigating negative emotions associated with environmental problem solving *and* within the context of nature-based/outdoor experiences. The Environmental Identity Development model provides a framework for considering the emotional dimensions of children's encounters in nature (Green et al., 2015). Indeed, negotiation of both positive and negative emotions can serve to strengthen children's environmental identity by instilling an inner sense of comfort and trust in nature, spatial autonomy and self-awareness, self-confidence, and competency in negotiating environmental features; these attributes will enhance one's personal connection, feelings, values, and beliefs towards nature which, in turn, plays a mediating role in determining one's actions and behaviours towards the environment.

Note

[1] In fact, the project was postponed for almost two weeks when record-breaking forest fires threatened the region and air quality restricted the children from going outside.

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References

Bixler, R. D., Carlisle, C.L., Hammitt, W. E., & Floyd, M. F. (1994). Observed fears and discomforts among urban students on field trips to wildland areas. *The Journal of Environmental Education, 26*(1), 24-33.

Bogdan, R. C., & Biklen, S. K. (2007). *Research for education: An introduction to theories and methods* (5th ed.). New York, NY: Pearson.

Boyer, G. H. (2014). How might emotions affect learning. In S. A. Christianson (Ed.), *The handbook of emotion and memory: Research and theory* (pp. 3-32). New York, NY: Psychology Press.

Camri, N., Arnon, S., & Orion, N. (2015). Transforming environmental knowledge into behavior: The mediating role of environmental emotions. *The Journal of Environmental Education, 46*(3), 183-201.

Carson, R. (1956). *The sense of wonder.* New York, NY: Harper & Row.

Chawla, L. (1998). Significant life experiences revisited: A review of research on sources of environmental sensitivity. *The Journal of Environmental Education, 29*(3), 11-21.

Chawla, L., & Rivkin, M. (2014). Early childhood education for sustainability in the United States. In J. Davis & S. Elliot (Eds.), *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 248-265). New York, NY: Routledge.

Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment* (pp. 45-65). Cambridge, MA: MIT Press.

Cole, P. M., Armstrong, L. M., & Pemberton, C. K. (2010). The role of language in the development of emotion regulation. In S. D. Calkins, & M. A. Bell (Eds.), *Child development at the intersection of emotion and cognition* (pp. 59-77). Washington, DC: American Psychological Association.

Dowdell, K., Gray, T., & Malone, K. (2011). Nature and its influence on children's outdoor play. *Australian Journal of Outdoor Education*, *15*(2), 24-35.

Elliot, S. (2014). Children in the natural world. In J. M. Davis (Ed.), *Young children in the environment: Early education for sustainability* (2nd ed.) (pp. 32-49). New York, NY: Cambridge University Press.

Fjørtoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Education Journal, 29*(2), 111-117.

Gebhard, U., Nevers, P., & Billmann-Mahecha, E. (2003). Moralizing trees: Anthropomorphism and identity in children's relationship to nature. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment* (pp. 91-112). Cambridge, MA: MIT Press.

Green, C. (2011). A place of my own: Exploring preschool children's special places in the home environment. *Children, Youth, and Environments, 21*(2), 118-144.

Green, C. (2013). A sense of autonomy in young children's special places. *International Journal of Early Childhood Environmental Education, 1*(1), 8-33.

Green, C. (2015). "Because we like to": Young children's experiences hiding in their home environment. *Early Childhood Education Journal, 43*(4), 327-336.

Green, C. (2016). Sensory tours as a method for engaging children as active researchers: Exploring the use of wearable cameras in early childhood research. *International Journal of Early Childhood, 48*(3), 277-294.

Green, C., Kalvaitis, D., & Worster, A. (2016). Recontextualizing psychosocial development in young children: A model of environmental identity development. *Environmental Education Research,* 22, 1025-1048.

Hart, R. (1979). *Children's experiences of place*. New York, NY: Irvington.

Hicks, D. (2014). A geography of hope. *Geography*, *99*(1), 5-12.

Hinton, C., Miyamota, K. & Della-Chiesa, B. (2008). Brain research, learning and emotions: Implication for education research, policy, and practice. *European Journal of Education, 43*(1), 87-103.

Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental

education. *The Journal of Environmental Education*, *21*(3), 8-21.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, *15*(3), 169-182.

Kelsey, E., & O'Brien, C. (2011). Sustainable happiness. *Green Teacher*, *93*, 3-7.

Korpela, K. M., Hartig, T., Kaiser, F. G., & Fuhrer, U. (2001). Restorative experience and self-regulation in favorite places. *Environment and Behavior*, *33*(4), 572-589.

Laufer, R., & Wolfe, M. (1977). Privacy as a concept and a social issue: A multi-dimensional developmental theory. *Journal of Social Sciences, 33*(3), 22-41.

Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder.* Chapel Hill, NC: Algonquin.

Lucas, A. M. (1979). *Environment and environmental education: Conceptual issues and curriculum implications.* Melbourne, AU: Australia International Press and Publications.

McDevitt, J. M. & Ormrod, T. O. (2013). *Child development and education* (5th ed.). Upper Saddle River, NJ: Pearson.

Metzger, T. & McEwen, D. (1999). Measurement of environmental sensitivity. *The Journal of Environmental Education, 30*(4), 38-39.

Morelli, G. A. & Rothbaum, F. (2007). Situating the child in context: Attachment relationships and self-regulation in different cultures. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 500-527). New York, NY: Guilford Press.

Phillips, R. G., & LeDoux, J. E. (1992). Differential contribution of amygdala and hippocampus to cued and contextual fear conditioning. *Behavioral Neuroscience*, *106*(2), 274-285.

Proshansky, H.M., & Fabian, A.K. (1987). The development of place identity in the child. In C.S. Weinstein & T. G. David (Eds.), *Spaces for children* (pp. 21-40). New York, NY: Plenum Press.

Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart of nature education*. Great Barrington, MA: Orion.

Well, N., & Lekies, K. (2006). Nature and the life course. *Children, Youth and Environments, 16*(1), 1-24.

Wilson, R. (2012). *Nature and young children: Encouraging creative play and learning in natural environments*. New York, NY: Routledge.

Zeyer, A., & Kelsey, E. (2013). Environmental education in a cultural context. In R.B. Stevenson, M. Brody, J. Dillon, & A. E. J. Wals (Eds.), *International handbook of research on environmental education* (pp. 206-212). New York, NY: Routledge.