

What is Nature?

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ABSTRACT

The concept of nature and how humans relate to nature provide the framework for this philosophical discussion on challenges facing the evolving field of early childhood environmental education. Post-humanistic thinking is proposed as an alternative to what is perpetuated through a more typical Western approach to education. This Western approach tends to reinforce and widen the human-nature separation. A common theme emerging from interdisciplinary thinking about the nature-human connection centers around kinship versus domination. This theme is presented as central to post-humanistic thinking. Suggestions are offered on how to apply post-humanism to pedagogy, especially at the early childhood level. Adopting a post-humanistic approach in working with children is considered to be critical to the very survival of the planet while also nurturing the holistic development of children. Post-humanism is also presented as a catalyst for ushering in a community of life that's inclusive of multispecies beings sharing one common world. Provocations for the future include addressing five areas of concern: (1) how nature is presented to children; (2) the meaning and practice of nature play; (3) the capabilities of children; (4) a pedagogy of discomfort; and (5) deeper dimensions of wonder. The essay concludes with a call to take up the challenge of thinking with nature and finding more entangled ways of being in the world.

Keywords: humanism, post-humanism, common worlds, kinship, pedagogy, early childhood education, environmental education

A concern addressed in this essay relates to a young child's statement – "I've never been to nature." This statement suggests that nature for this child is something "out there," something apart from humans. In today's world, it's not surprising to hear a child articulate what many of us experience on an almost daily basis. We, as humans, no longer live immersed in nature. We live in built environments with both physical and psychological walls separating us from the natural world. The environment in which we live most of the time was built by humans and is controlled by humans. It's an environment that was designed to efficiently meet our basic physical needs, to make us feel comfortable, and to entertain us. The natural environment, then, becomes a luxury or a place to go to for diversion rather than a system of which we are a part. Even human adults who say they consider themselves one with nature tend to define nature or natural environments as places separate from humans and as being the opposite of civilization (Vining et al., 2008). This definition of nature allows humans to view themselves as observers and explorers of the natural world, instead of being an integral part of it (Demoly & Santos, 2018).

Sadly, the Western education system tends to reinforce and widen the human-nature separation (Profice et al., 2016). While children are taught that nature is a system of living and non-living elements, their descriptions of nature often exclude humans. Some research indicates that children believe they can't find nature at school (Tillman et al., 2018). Forms of discourse and materials used at school tend to reinforce this mistaken idea of nature. The Cambridge English Dictionary, for example, defines nature as "all the animals, plants, rocks, etc. in the world and all the features, forces, and processes that happen or exist independently of people . . ." This definition of nature feeds into a form of humanistic thinking which is dominated by human interests or values. Humanistic thinking focuses on the human experience and the advancement of humanity. Some forms of humanism include the idea that humans can seek their own level of excellence and create their own future apart from the rest of nature (Simonsen, 2013).

The purpose of this essay is to present a different view of the human-nature relationship based on post-humanistic thinking and to offer suggestions on how to apply post-humanism to pedagogy, especially at the early childhood level. The essay is developed around the idea that a post-humanistic approach in working with children is critical to the very survival of the planet while also nurturing the holistic development of children. The essay is divided into three main sections: Post-humanism and Kinship, Implications for Pedagogy, and Provocations for the Future.

Post-Humanism and Kinship

The concept of post-humanism is complex, and different people define it in different ways. The discussion of post-humanism presented in this paper is based on the belief that to properly define humans' place in the universe we need to listen to multiple voices and consider different perspectives. This essay reflects some of these voices in making the case for post-humanist views in early childhood pedagogies. One common theme emerging from interdisciplinary thinking about the nature-human connection centers around kinship versus domination. This theme is central to post-humanistic thinking.

Donna Haraway's voice is one we might listen to for gaining a deeper understanding about kinship and the important role it can play in establishing a more just and sustainable future. Haraway's work is impressive -- some authors even refer to her as a prophet (Kuswa & Kuperman, 2018). Haraway's prediction of the future includes a time when human and nonhuman ecosystems will reflect a symbiotic mode of coexistence. She refers to this time as the "Chthulucene". Haraway specifically endorses the idea of kinship, which she describes as "affinity, not identity" (Haraway, 2016). Haraway's idea of kinship includes a blurring of the human and the nonhuman. She also calls attention to the interdependence of humans and animals. In *Staying with the Trouble: Making Kin in the Chthulucene*, Haraway urges us to be troubled by our human-centric thinking and how this contributes to the loss of many other creatures.

Humanism overlaps, in some ways, with speciesism, which is based on the belief that we, as humans, have greater moral worth than other species (Caviola et al., 2018). This misguided thinking reinforces the human-nature divide, which is now pervasive and serious enough to be considered a "cultural disease" (Kopnina, 2018). If there's a re-set button, it's time to press it now. As a culture, we need to self-correct. Hopefully, we still have time. Thinking deeply about post-humanism may help us through this process. Post-humanistic thinking is somewhat reflective of Mahatma Gandhi's statement, "The best way to find yourself is to lose yourself in the service of others." Post-humanism doesn't ask us to give up the idea that we, as humans, are exceptional. Post-humanism calls us to recognize and respect that all living things and their habitats are exceptional (Bekoff, 2014).

Post-humanism doesn't mean post-humanity nor does it mean a complete rejection of humanism (Wolfe, 2009). In fact, post-humanism may be a call to realizing the fullness of our humanity. While the self-help literature tends to focus on the individual aspects of fulfillment, we'd be wise to question what this means in terms of being fully human. An excessive contemplation of self (as individual self) may be at the expense of broader social issues. The path to realizing our fulfillment as human beings is through close connections with others and the larger world in which we live.

Recognizing the exceptionalism of all creatures can foster a re-enchantment with the natural world. Marc Bekoff (2014) refers to this re-enchantment as "rewilding our hearts," which he defines as "opening our hearts and minds to others . . . thinking of others and allowing their needs and perspectives to influence our own" (pp. 5-6). The "others" Bekoff refers to include both human and the other-than-human animals. While Bekoff defines rewilding as a mindset, he also links it to action. Rewilding is expressed in such initiatives as building wildlife bridges and underpasses so that animals can move freely and safely between fragmented areas. Such initiatives, he says, provide not only "corridors of coexistence and compassion for animals" but corridors in ourselves, as well -- corridors "that connect our heart and brain, our caring and awareness" (p. 12). Post-humanism, then, is more than cognition; it's also recognition reflected in the way we do things. For educators – especially educators working with young children – this requires adopting practices and using language that reflect a sense of kinship with all other beings on Planet Earth.

Post-humanism, as used in this essay, is consistent with Bekoff's definition of rewilding. It's also consistent with common worlds thinking and the work of the Common Worlds Research Collective (<http://commonworlds.net/>). Similar thinking is expressed in a newly-published document, "Home to Us All: How Connecting with Nature Helps Us Care for Ourselves and the Earth" (Charles et al., 2018). As the title "Home to Us All" suggests, all living creatures share a common home – that is, Earth.

The "Home to Us All" report was developed by the Children and Nature Network (www.childrenandnature.org) and Nature for All (<http://natureforall.global/>). This report was launched at the United Nations Conference on Biological Diversity in Sharm el Sheik, Egypt, in November, 2018. Findings from the full report are being carried forward for incorporation into international policy agreements. We can hope that this initiative will usher in a new way of thinking and a new way of relating to the natural world -- a world where both humans and the rest of nature can thrive. The focus of the "Home to Us All" report is on an inclusive "we," where all living creatures are recognized as co-residents and collaborators on Planet Earth.

Some of the recommendations for practice included in this report clearly emphasize the importance of providing opportunities for young children to experience the many facets of the natural world. A related *Nature for All Playbook* provides a concrete example. This example focuses on transforming puddles "into explosive bursts of water" by jumping in the puddles and feeling the water on your skin. Rather than withdrawing from water to prevent getting wet, you might take this one step further and use the mud around the puddle to do some finger painting on your skin. Jaye Johnson Thiel in a recent Commons World blog (June 17, 2019) shares her response to getting splashed by one child jumping from a swing into a puddle and having another child using mud to paint hearts on her arm. Jaye explains beautifully how she gave into "the baptism of the mud, the puddles, the joy found in the sacraments of the rain; reacquainting myself with the rhythms of an always present kinship to the earth" (<https://commonworlds.net/how-do-we-listen-to-the-always-present-kinship-between-children-and-the-earth-during-playground-relations/>). Many other examples of how to foster a sense of kinship with the rest of the natural world while working with young children can be found on the Common Worlds Research Collective website (see

<http://commonworlds.net/>) and the *Nature for All Playbook* (https://www.iucn.org/sites/dev/files/natureforallplaybookeng_0.pdf).

As reflected in the water and mud examples, the focus of the post-humanism and common worlds perspectives is more about discerning the human relationship with nature than defining or learning about nature. It's about experiencing kinship with nature all around us versus trying to connect with nature *out there*. A kinship perspective takes us beyond both science (Sideris, 2017) and stewardship (Taylor, 2017). A kinship perspective invites "thinking with" versus "thinking about" the world of nature and our relationship with it. Veronica Pacini-Ketchabaw (2013) calls attention to this way of thinking when she asks, "What if forest pedagogies are not so much about learning about forests, but thinking with forests?" (p. 358). We might ask this same question about nature in general – "What if nature-based pedagogies are not so much about learning about nature, but thinking with nature?" We think with nature when we pay attention to the nature-human relationships that are co-created in a natural environment. "Thinking with nature" focuses on relationships and connectedness versus control and domination. Once we view other living creatures as kin, we can no longer claim dominance over them or think of ourselves as separate from them.

The issue of dominance has been discussed in the literature as a concern in promoting children's engagement with the rest of nature. Sue Elliott and Tracy Young (2016), for example, suggest that romanticized images of children and nature –which frame some early childhood environmental education programs -- perpetuate a hierarchical and dualistic view of the human-nature relationship. This view, they say, places humans (children included) in a dominant relationship with the rest of the natural world. They call for an alternative view grounded in a partnership with nature. Other scholars, too, have called for a more relational approach to nature-based learning pedagogy (Cumming & Nash, 2015). Claire Warden (2015), for example, explains how learning with nature often takes the form of a symbiotic relationship – that is, a relationship that is intimate and interdependent.

The child who said she'd never been to nature is missing something essential in her understanding and appreciation of the natural world. She's also missing a sense of kinship with the more-than-human world. To her, nature is something "out there;" not something she experiences as kin. We may think of kinship with the natural world and post-humanism as something new; but it really isn't. Indigenous people from different parts of the world have long believed that all the elements of the Earth are kin and that living on the land means participating in (versus controlling) natural communities. "Indigenous people view both themselves and nature as part of an extended ecological family" (Salmon, 2000, p. 1327). They view themselves as being affected by and, in turn, affecting the life around them. This view is sometimes referred to as "kincentric ecology" (Salmon, 2000).

A related term, "ecocentrism," is sometimes used in reference to an ethical view of nature which recognizes nature and the elements of nature "as having intrinsic value and perspectives beyond the human" (Sitka-Sage et al., 2018, p. 21). The opposite of ecocentrism is anthropocentrism, which is based on "the view that all value and meaning inheres in one uniquely special species—humanity" (Sitka-Sage et al., 2018, p. 22). Rewilding education and unlearning anthropocentrism requires, among other things, a noticeable shift in the way we talk about nature. Consider, for example, a scenario where educators working with children in school gardens and a nearby residential farm referred to the children's experiences as "encounters with the wild." The educators also expressed delight in the way children were given the opportunity to learn about producing food and "taking care of nature." In this case, the take-away messages for children could include the "metaphysics of mastery." A related concern focuses on what the students are not taught through their gardening experience. "Students are not taught to

recognize that ‘weeds’ are wild plants that can potentially contribute to a more biodiverse whole They are not taught to see that the barren land requiring fertilizer to be productive . . . is a managed landscape shaped by humans for humans” (Sitka-Sage et al., 2018, p. 27). To this we might add that students are not taught to consider how a sense of kinship might deepen their experience with the more-than-human world.

An interest in knowing our human kin – past and present -- is fueling a fast-growing industry involving DNA sampling. Messages from this industry tell us that having information about our human kin will enrich our lives. For a fee, we can send in a DNA sample and in return get geographical detail connecting us to places and people that are a part of our human family tree. This, of course, can be quite interesting. Kincentric ecology encourages us to take this a step further and learn more about all our kin, including the more-than-human. We know from science that we share an evolutionary ancestry with the rest of the living world. What’s now textbook knowledge needs to become a lived experience.

Kinship, in some contexts, refers to a physical relationship, as in “a blood relationship.” But kinship can also be experienced as an emotional relationship. We sometimes refer to this as “having emotional ties.” It’s not unusual to see expressions of such emotional ties in children’s spontaneous interactions with elements of nature. Argent et al. (2017), for example, document ways in which a group of children extend thought and empathy to trees. The children refer to the trees as friends and engage in conversations with them. After discovering “baby trees” during their walk through a forest, the children stop to “sing familiar songs softly and whisper words of encouragement” (Argent et al., 2017, p. 9). They also wonder about the possibility of trees having a heart and express a deep sense of empathy as they see trees being removed for land development. Such expressions reflect a kinship between children and the trees – a kinship which we would do well to encourage and reinforce.

Yet, pedagogy in a Western tradition tends to focus on learning about trees and other elements of nature versus honoring and deepening the relationship. A growing number of scholars, however, are suggesting a different approach, a relational approach. Some such scholars – including Kimmerer (2013) and Cajete (2010, 2016) – speak, not only from their own professional expertise, but also from their Indigenous heritage which recognizes and honors different modes of awareness, including an awareness of kinship. Both Robin Wall Kimmerer, an enrolled member of the Citizen Potawatomi Nation, and Gregory Cajete, a Tewa Indian from the Santa Clara Pueblo in New Mexico, stress the importance of living in a harmonious and sustainable relationship to the land. Both scholars also recognize discrepancies between traditional Western and American Indian worldviews. As articulated by Cajete (2010), “Traditionally, American Indians view life through a different ‘cultural metaphor’ than that of mainstream America” (p. 1126). While many Native American scholars advocate for a deeper appreciation of the Native perspective, they also caution against the tendency to characterize differences between ‘Western science’ and Indigenous knowledge systems in terms of oversimplified binaries. What they call for, instead, is an integration of Indigenous observations and perspectives with the work of sustainability scientists (Johnson et al., 2016). The recognition of kinship between humans and the rest of the natural world is one area in which the Indigenous and sustainability sciences may find common ground.

Implications for Pedagogy

Making kinship a unifying theme of our work with young children and intentionally promoting children’s positive ecological identity are offered as ideas on how to translate post-humanistic thinking in early childhood education. Doing so, however, is a formidable task and comes with many challenges (Pacini-Ketchabaw et al., 2015). Changing the way we think is never easy; neither is changing the way we do

things. Such changes, however, are necessary if we are to adequately address humans' alienation from the rest of the natural world and other related social issues. In education, this means that learning goals and objectives need to focus on more than the acquisition of knowledge and skills. The development of attitudes, dispositions, and relationships also need to be emphasized. We know from environmental education research that knowledge alone is not a sufficient motivator for people to take action to benefit the more-than-human elements of nature (Klockner, 2013). A focus on relationality and a sense of kinship are also needed (Gibson et al., 2015; Zylstra et al., 2014). In addition to re-thinking our human position in relation to the more-than-human world, we'll also need to re-define many other constructs, including our notion of community with other people(s) and the rest of the natural world (Knippenberg et al., 2015). Applied to early childhood pedagogy, this means adopting kinship with the more-than-human world as one of our curricular goals and finding ways to promote this goal through our everyday language and activities.

Children – especially young children -- take their cues from adults and the social environment as to how to view the rest of the natural world and their relationship with it (Wilson, 2018). Even well-meaning adults can suggest that nature is an “it” to be studied and used -- or that it's a backdrop supporting human activity. This view does little to foster kinship. We know, too, that this approach is ineffective in inspiring people to take pro-environmental actions (Knippenberg et al., 2015).

A focus on kinship with the natural world takes us to another realm of relationship with nature. This realm isn't defined by knowledge or benefits. It's rooted in meaning and a meaning-oriented relationship. As adults, we can foster a sense of kinship in young children by what we do and say and through the social and physical environments we provide for them. Kinship is fostered when we treat non-human living things and their habitats with respect. Kinship is fostered when we speak of animals and plants as living creatures sharing a common home with all other creatures – both human and non-human. Kinship is also fostered when we express and encourage ecological perspective-taking – that is, taking the perspective of animals or plants or seeking to understand how they are being impacted by circumstances around them. While the impact of such “natural disasters” as violent storms, forest fires, and flooding can be devastating for humans, the impact on other species should also be considered. With young children, ecological perspective taking can be fostered by considering how stormy weather might impact nesting birds or how flooding might destroy some animal homes or separate them from their source of food.

Engaging children in pro-environmental actions can also promote kinship, especially if such actions are understood, not as “rules” to be followed, but as expressions of compassion and caring. The environments in which children live, play and learn – as long as they are welcoming to other creatures -- can also promote kinship. A well-maintained birdbath and butterfly garden, for example, are expressions of hospitality. What's important, however, in “welcoming other creatures” is to be mindful of the fact that it's not our (the human) world in which they (the non-humans) are being welcomed. It's a common world to be shared by all. The goal is peaceful coexistence. This means working from the understanding that “it's not all about us” (Bekoff, 2014, p. 45). It's about all living things being a part of a web of existence, where no part is more important than another (Caduto & Bruchac, 1997).

We would do well to identify and use forms of language that reinforce connections, coexistence, and kinship. Language not only expresses a way of thinking; it also introduces and reinforces a way of thinking. Thus, how we talk about nature influences the way children think about nature. One of our challenges as adults working with young children is identifying forms of language which promote “kinship with” versus “separateness from” the rest of the natural world. Something as simple as replacing the term “food scraps” or “food waste” with “food for the worms” can remind children of their connectedness to other

living creatures. How we refer to “rot” -- another term related to our compost bins – also warrants scrutiny. As Narda Nelson (2018) reminds us, popular depictions present rot “as an intensely abject figure” and as “something to avoid with young children” (p. 39). Buying into this popular depiction reinforces a sense of separateness from the rest of the natural world. Nelson encourages something different. She suggests that we amplify the existence of rot by exploring the process of decomposition with children and by helping them understand “that ‘a fruit past its prime’ is simply a fruit primed for other appetites” (Nelson, 2018, p. 43). It’s good to remind ourselves that certain words like “rotten food,” “nasty bugs,” and “angry clouds” do little to foster a sense of kinship with the natural world.

As long as we think of and talk about the human world and the world of nature as two separate entities that may occasionally come together, we’ll maintain a humanistic versus post-humanistic view of the world and our place in it. Perhaps recalling a time when there was no need for wildlife sanctuaries and envisioning this as a possibility for the future will remind us of what we mean by sharing a common world.

What’s needed for promoting kinship is a shift from teaching children that the natural world is an object of learning to engaging them in experiences which help them understand that both they and the more-than-human world stand in relationship with each other, sharing one common world (Nxumalo, 2018). Also needed is a shift from individualistic and developmental goals to collective and relational aspirations. While the recent academic literature offers some ideas on how to do this, much more work needs to be done.

The following examples of how some researchers and practitioners are applying common worlds pedagogy in their work with young children might be helpful in inspiring other applications. Narda Nelson (2018) introduced tracking “as a generative method for cultivating the arts of awareness and opening up our understandings of place relations” (p. iii). Her goal was to place young children near the action of where animals really dwell in their own habitats and to help the children think about their “shared inheritances and vulnerabilities with other creatures on this planet” (p. 3). She wanted the children to think deeply about what it means to share space with their non-human neighbors. She wanted to give the children the opportunity to learn with and from animals; not just about animals. She also used tracking as a form of inquiry to help children abandon the fantasy of human mastery or control over nature. The animals the children observed during their tracking expeditions were free to move about on their own volition. Compare this to a dog on a leash or in obedience training!

In another instance, Nelson (2019) used “caring for a dying rat” as a “provocation to rethink relational, everyday ethics” (p. 3). In this case, she involved children in a “care-full” experience with a creature that most people would prefer to do without. Her goal in this instance was to promote a “thicker notion of care” than what is usually done by simply observing birds at a bird feeder. The dying-rat encounter, while unanticipated, became somewhat of a pivotal moment in a multispecies inquiry with the children. It did not happen, however, in isolation. It occurred within the context of other experiences reflecting a common worlds pedagogy – a pedagogy that recognizes a connectedness to or kinship with all other creatures, including those considered uncomfortable.

Taylor and Pacini-Ketchabaw (2016) offer another example of common worlds pedagogy. This incident occurred in the grasslands of a university campus in Australia. Children attending an early learning center at the university encountered large mobs of kangaroos. The children wanted to get a close-up look of the kangaroos and, over time, gained increasing confidence in moving closer and closer to the mob. The kangaroos also became increasingly comfortable with the children’s presence. They gradually allowed the children who approached slowly and quietly to get quite close. The teachers could have interrupted what

some might consider “awkward multispecies encounters,” but they chose instead to allow “a relationship of deepening attachment” to grow. The teachers’ decision was based on the understanding that this experience could generate a new kind of environmental concern based on a relationship in which “humans are not the sole scriptwriters and actors” (p. 13). As the children got closer and spent more time near the kangaroos, they began to notice differences between themselves and the kangaroos in modes of attention and behaviors. The children noticed, for example, the kangaroos’ large upright ears and the way the ears can swivel. They noticed, too, the kangaroos’ enormous tails and how they use their tails to balance and jump. Through pretend play, the children tried to experience what it would be like to live in a kangaroo’s body. They found or made big tails, attached them and hopped around; and they put their hands on their heads to mimic the action of the swiveling ears. After observing the carcass of a dead kangaroo, some children even pretended to be dead and dying kangaroos. The way the children identified with the kangaroos suggests that close-up encounters with other species can promote a sense of connectedness and perhaps generate a new kind of ethics and environmental concern.

A third example relates to helping children see how weather conditions impact other species. In this example, the focus is on how snakes and other reptiles tend to be out in the open on a hot day seeking warmth from the sun and how rain may wash creatures out of their usual homes. Educators, in this case, used “snake responses” to the weather to nurture children’s modes of attention to more-than-human encounters and concerns (Rooney, 2018). Typical early childhood lessons on learning “about” the weather often focus on “just the weather” and how it affects humans. Related activities may include recording the temperature or noting the difference between a sunny and a cloudy day. Other typical lessons might focus on seasonal fun activities (such as raking leaves) and the type of clothes to wear (such as hats and gloves in cold weather). These lessons are human-centered and may even perpetuate the idea that humans and nature are separate entities. A post-humanist or kindred focus links weather-related experiences to encounters with place and inhabitants of place, including the more-than-human inhabitants, such as snakes.

These examples direct attention away from the child and the educators to the children’s inter-relations with the natural world (Argent et al., 2017). This approach contrasts with the positioning of nature as a separate entity or as a place to which children should be brought so that they might gain the benefits nature has to offer. Efforts to “reunite children with nature” can too easily perpetuate the human-nature divide. New forms of education can play a critical role in promoting modes of thinking which reflect a “more than human” perspective. Nxumalo (2017a) describes a scenario in which young children engage in dialogues with and about the liveliness of rocks. The children see the rocks as becoming entangled with moss and other “more-than-human life.” The children use such words as “eating,” “helping,” and “drinking rain” to describe rocks’ liveliness. In this case, the children’s way of thinking about the rocks and the moss erases the life/non-life dualism.

A recent study found that younger children and Indigenous children are more likely to perceive nature as full of life and emotion than older and non-Indigenous children (Profice, 2018). This study investigated how children from two dramatically different backgrounds perceive and value nature. One group – children from an Indigenous community in Brazil – lived in a rich biodiverse environment. The other group lived in highly urbanized neighborhoods in New York City. The children from Brazil tended to view natural beings and natural environments as “good” without any mention of usefulness to humans. The children from New York, on the other hand, tended to equate what is “good” about nature with the human benefits of natural resources. Perhaps if children had more opportunities to engage deeply with nature-rich environments, their perceptions of nature as a living, feeling presence could be sustained as they got older. This would be healthy for children and for the environment.

Nxumalo (2017b) suggests that post-humanist thinking – in addition to deepening children’s relationship with the “more-than-human world” – could also serve as a form of resistance to an extractive relationship with the land and other aspects of the natural world. It could potentially address difficult assumptions about colonial thinking, as well. Nxumalo recognizes the phenomenal growth of nature-based preschools and appreciates their focus on engaging children with nature, but suggests that their curricular approach fails to adequately address difficult issues relating to colonial thinking. Such thinking allows for Indigenous displacements and environmental degradation. Nxumalo proposes a curricular approach that builds on children’s everyday affective experiences with the more-than-human world. These experiences tend to be relational rather than divisive and can serve as a form of resistance to a human-centric and extractive relationship with the natural world. Clayton and her colleagues (2017) share similar thoughts. They note how thinking of nature as the physical environment without including humans and the way humans construct the world allows us to ignore the degree and impact of human control over other humans, non-human species, and ecosystems.

Provocations for the Future

The purpose of this final section of the paper is to summarize and expand on some of the ideas already introduced about how to translate some of the principles of post-humanism to our work with young children. These ideas include attention to (1) how nature is presented to children, (2) the meaning and practice of nature play, (3) the capabilities of children, (4) a pedagogy of discomfort, and (5) deeper dimensions of wonder. The complexity of the challenge suggests there are no easy answers.

One danger in fostering children’s engagement with nature is suggesting that nature is an objectified entity to be explored, studied, and used. Such a view of nature is a barrier to kinship. This view of the natural world places humans “outside and above an inferiorised and manipulable nature” (Plumwood, 2002, p. 4). This concern has prompted some scholars to recommend replacing the word “nature” with “place” (Beery & Wolf-Watz, 2014). They recognize that the connectedness to nature concept reflects a deep-seated Western concept of people and nature as a two-part relationship. Perhaps we need a new vocabulary to go along with our new thinking.

We might also consider serious reflection on the meaning and practice of nature play. While there are many reasons to promote children’s play in natural environments, it’s a mistake to assume that being in a natural environment is the same as being meaningfully engaged with nature. If nature is viewed as a backdrop to play or an object of play, it remains something apart from self or something to be manipulated and used (Elliott & Young, 2016). If we want nature engagement to be a transformative experience for children – and eventually for society – we may need to become more intentional about the way we foster and support nature play. Sue Elliott (2016) provides an example. The manipulation of plant parts (leaves, seeds, sticks, etc.) represents a typical feature of nature play. Intentional teaching involves working with the children to create an ethic of picking plants for play. This means engaging the children as vocal participants in a critical discussion about how we, as humans, should relate to plants. Simply allowing the children to pick as many plant parts as they like may lead to a denuded landscape where neither plants nor animals can thrive. Stripping plants of what will keep them healthy can also strip away a part of the child that he or she needs to be whole and healthy. Helping children decide which plants can be picked for play gives them an opportunity to think about the welfare of the plants and other living creatures depending on the plants. Such reflections can help children see themselves as co-habitators of the planet versus users or managers of natural resources. Engaging children in such discussions, however, requires teachers to critically reflect on their own worldviews and ecological identity. While a small number of

teacher preparation programs are emphasizing nature and place-based experiential learning, more such programs are needed. We can't stop with the greening of schoolyards; we need to green the hearts and minds of teachers and students, as well.

If we expect nature play to make a real difference in healing what is recognized as a major contributor to the environmental crisis (that is, the human disconnection from nature), then it must include a focus on something deeper than learning in, about and for the environment. This deeper form of nature play engages children in learning *from* and *with* nature, as well. Without this deeper focus, nature play may serve as nothing more than a "Band-Aid" in healing the human/nature separation (Elliott & Young, 2016). Children can do more than play in nature; they can develop an understanding that they are nature. At some point during their early years, children can also begin to understand the basic concepts of kinship and of Earth being home to us all.

Unfortunately, adults tend to underestimate the competencies and interests of children. This tends to be true for environmentally-related as well as other areas of concern. If education for sustainable development at the early childhood level is properly implemented, it may prove to be a driver of quality in our educational programs for young children, as it recognizes and respects the ability of children to think and act beyond their own self-interests (Engdahl, 2015).

Clayton and her colleagues (2017) call for a "transformation of experience" – not just a transformation of thinking. While they urge us to re-examine the way we think about nature and the "human experience of nature," they also call for a different way of doing things. One of their recommendations is to integrate nature experiences – even negative aspects of such experiences -- into people's daily lives. Bekoff's urging to rewild our hearts includes similar advice. Rewilding, he says, "means appreciating, respecting, and accepting other beings and landscapes for who or what they are, not for who or what we want them to be" (Bekoff, 2014, p. 13).

This may mean making a "pedagogy of discomfort" (Winks, 2018) a part of what we do. Not all encounters with natural elements and events are comfortable or consistent with the way we'd like the experiences to be. We should expect a certain "discomfort in the field" (Winks, 2018) and challenge ourselves to find ways of using such encounters to deepen children's understanding of and respect for the natural world as it is. Narda Nelson (2019) -- as discussed above -- found a way to do this with a dying rat. Fikile Nxumalo (2017a) describes a situation where early childhood educators found a way to do it with dead and dying bees. Teaching and learning about bees at this preschool was, at first, based on a pre-set science curriculum emphasizing the importance of bees for pollination. The focus changed, however, after the children discovered an increasing number of dead and dying bumble bees in their outdoor playspace. This discovery – and the way the teachers responded to the children's concern -- led to an attentive and caring way of viewing and relating to bees. The bees were no longer objects to be studied or feared. The children now related to the bees as living beings sharing a common space with them. Learning about bees shifted "from matters of fact towards matters of concern." The children practiced stillness and slow movement when they were close to bees still showing signs of life. Some children made "offerings" to the bees in the form of flowers and sugary water. They provided covering for the dying bees to keep them from blowing away. These caring responses indicated that the children had developed a relationship with the bees and could no longer be indifferent toward them.

There are many aspects of nature and the way it works which aren't easy for humans to embrace. Predator-prey relationships, the force of tornadoes, and the devastating effects of forest fires are just some examples. For young children, spider bites and bee stings tend to be sources of fear and discomfort.

These aspects of nature may make it difficult for us, as humans, to think-with and be-with some of the elements of nature in a caring way. But if we do as the children did with the bees – that is, shift our thinking away from how what’s happening impacts us to our relationality as one species among many – we will have come a long way in moving from humanistic to post-humanistic thinking.

Common worlds and post-humanist thinking call us to move beyond nature-based learning to nature-based living and nature-based being. Nature-based learning, if limited to acquiring knowledge about the natural world, can be passive and devoid of the challenges and joys inherent in maintaining a healthy relationship with the rest of nature. Nature-based living and nature-based being, on the other hand, are relationship oriented and involves considering how our decisions and actions impact other living things. Nature-based living also means allowing children to experience some of the uncomfortable aspects of nature. How to do this while ensuring their safety and well-being and considering how this might influence their feelings about other living things is one of the questions we need to explore.

Also to be explored are some of the deeper dimensions of wonder. Many of us, as we work with young children, look to the fostering of wonder as a focus of what we do. We look to wonder as a unifying context in children’s explorations, discoveries, imaginings, and ponderings related to the natural world. We want children to experience the natural world as a place of wonder. We want them to carry wonder in their hearts “as an unailing antidote against the . . . sterile preoccupation with things that are artificial” (Carson 1956, p. 43). We can foster young children’s sense of wonder in a number of ways, but perhaps the most effective way is to encourage a deep sense of kinship with nature. Wonder is important, but wonder without a sense of kinship isn’t enough.

An over-emphasis on scientific ways of knowing (isolating, abstracting, objectifying) can reinforce the concept that nature is something separate from humans and something to be manipulated and controlled. Viewing the natural world through the eyes of wonder calls for rich sensory experiences with the world of nature, but it also requires certain dispositions which differ from – or go beyond -- scientific knowing. Such dispositions include compassion, generosity, vulnerability, openness, empathy, and respect for otherness. Post-humanism doesn’t ask us to abandon science; it cautions against “consecrating science” (Sideris, 2017).

Post-humanism calls for a replacement of human-centered education with eco-centric education, human-centered thinking with eco-centric thinking. Post-humanism means exchanging “the sacred rights of humans for the rights of all beings on the planet” (Williams, 2001, p. 159). Perhaps recognizing, honoring, and promoting kinship with all other living beings can help us transition to this form of thinking and being in the world.

Diverse currents have contributed to the evolution of environmental education (EE) over the past thirty years. Sauve (2005) identified fifteen different currents which, as she says, have added to the richness of the field. Early childhood environmental education (ECEE) -- a more recent branch of the EE field – has also been shaped by different currents, primarily by the integration of early childhood education and environmental education. But are we there yet, or do we still have work to do in shaping a field that can make meaningful contributions to child development, conservation of the natural world, and the establishment of a more equitable and peaceful society? Can post-humanism and common worlds thinking lead us into the next stage in the evolution of the ECEE field? The post-humanist and common worlds perspectives urge us to venture into wider and – for some of us -- somewhat unknown territory. This is where the image of a samara may be helpful.

A samara is a winged seed that, when lifted by the wind, can travel many miles before falling to the ground and putting down roots. Some seeds fall close to their parent plant; others are carried by some force to a greater distance from where they were produced. There's an advantage to this process. If all the seeds stayed next to the parent plant, the resulting crowded condition would make it difficult for many of the seedlings to survive. Samaras have been described as seeds that are willing to risk flying above the canopy and into the open sky without knowing for sure where they will land (Haskell, 2012). We now need people who are willing to *think with* samaras -- people who aren't confined to traditional ways of doing things and who are willing to travel as far as the wind will carry them. Thinking with samaras opens up possibilities for new places, spaces, and becomings to emerge. There, we may thrive as humans, by ushering in a community of life that's inclusive of multispecies beings sharing one common world.

It is my hope that, as we continue moving forward in the field of early childhood environmental education, we'll think long and hard about what we really mean by nature and the concept of Earth as home to us all. Thinking with nature and recognizing other living beings as kin require different, more entangled ways of being in the world. Are we up to this challenge?

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