European Journal of Education Studies
ISSN: 2501 - 1111
ISSN-L: 2501 - 1111
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejes.v10i1.4618 Volume 10 | Issue 1 | 2023

ENVIRONMENTAL EDUCATION: INTERPRETATIONS AND PERCEPTIONS

Matthew Etherington[i]
School of Education,
Trinity Western University,
British Columbia, Canada

Abstract:
How can we address the challenges inherent in the role and relationship that humans have with nature? I say 'we' because I hold the view that it should take a 'village' to resolve the challenges related to nature and the environment. When all community members are heard, included, and supported, everyone has an opportunity to learn from the journeys of lived experiences. The second question is how we should relate to nature in the third and fourth decades of the twenty-first century. Should human beings leave nature entirely alone or should we involve ourselves in nature as never before. This article investigates these questions in juxtaposition with the idea of *nature as teacher*.

Keywords: environmental education, interpretations perceptions, worldviews

1. Nature as Teacher

The first action for human beings is to recognize that nature is a teacher. A teacher essentially imparts wisdom to others. A teacher does not necessarily have to be human; there are, in fact, many non-human teachers. For example, animals teach people empathy, shame, fear, commitment, and kindness. Nature reveals the diversity and interdependency of plants, terrain, and creatures to maintain balance, rhythm, and the cycles of life, and suggests there is a life spirit that interconnects them all.

Nature educates human beings with knowledge and wisdom, emphasizing a de-centring of self in order to understand the *other*. Nature helps us with humility as we take the focus off ourselves to surpass human pride and recognize the 'more-than-human world' of plants and animals.[ii] As a consequence, human beings expand their 'ecological epistemologies'[iii]— a vital way of knowing to better comprehend the world and our place in it.

[i] Correspondence: email matthew.etherington@twu.ca
[ii] Carvalho, Steil, Gonzaga, *Learning from a more-than-human perspective. Plants as teachers, 145,* 146, 147.
[iii] *Ibid*, 147.

Moreover, during times of uncertainty, pandemics, war, and tragedies, nature has been a consistent teacher. In times of crisis, people have looked to nature for guidance, wisdom, and hope and nature has delivered, offering joy, promise, and general wellbeing. One well known example is during a two-year period, from 6 July 1942 to 4 August 1944 when the Germans occupied the Netherlands. Anne Frank, a girl of 15, was confined to a hidden annex in Amsterdam. Anne and her family went into hiding for two years to avoid Nazi persecution. The group lived in constant fear of being discovered and could never go outside. Anne found solace and hope in a horse-chestnut tree as she looked through a window in the attic where she was hiding.[iv] Anne wrote about the tree in her diary three times, the last time on 13 May 1944.[v] For Anne, the horse-chestnut tree was a symbol of life and hope. The resilience of the tree held a certain confidence that life would go on, noticed or unnoticed.[vi] Trees can be a symbol of hope, as we meet trees in their context, they become our neighbours and mentors, and they provide company when we are alone.[vii]

One more illustration of how nature can offer hope is throughout the coronavirus tragedy of 2020 and 2021. The pandemic unveiled the condition of our human-nature relations. During the height of the virus, a larger than normal number of people travelled to forests for respite. This was particularly evident in England during February 2021 where forests experienced a 40 percent visitor increase.[viii] Also, in Vermont, in the United States, residents expanded their outdoor activities and camping in the outdoors, consequently outdoor equipment and product sales also surged.[ix] These examples uncover the importance of human-nature relationships during times of uncertainty, hopelessness, pandemics, and tragedy.

2. Children and Nature

The ways that children interact with the natural world are influenced by many factors, one being their place of residence. In western cultures, there has been a dominant humanist paradigm which encourages the child to behave only as an *individual*, shaping a socially exclusive consumerist worldview. Children inherit cultural beliefs about having the right to own, buy, rent, and sell nature, and the right to place boundaries around nature to keep their fellow human beings away.

The English philosopher and political theorist, John Locke, from whom these ideas transcend, established private property as being essential for liberty. Nature is a bundle

[iv] Choukas-Bradley, *Resilience: Connecting with Nature in a Time of Crisis*, 12
[v] "The chestnut tree", visit, https://www.annefrank.org/en/anne-frank/front-section/chestnut-tree/
[vi] Kaza, *Conservations with Trees*, 19.
[vii] *Ibid*., 38.
[viii] Office for National Statistics, *Census* 2021. https://www.ons.gov.uk/economy/environmentalaccounts/articles/howhaslockdownchangedourrelationshipwithnature/2021-04-26.
[ix] Morse, Gladkikh, Hackenburg, Gould, COVID-19 and human nature relationships: Vermonters' activities in nature and associated nonmaterial values during the pandemic, 16.

of rights, privately owned by individuals.[x] One outcome is that children become adults with a producer-consumer worldview. Accordingly, it is of no surprise that people have few regrets clear-cutting, mining, polluting, and even poisoning nature when it is personally advantageous. As a producer-consumer, Nature has no limits and is perceived only in terms of what it can offer us, which often leads to a lifestyle of overeating and overproduction. The global economy has given us more choices than ever before and with those choices fruits and vegetables are removed from their nature cycles and seasons, as we expect (demand) them to be around 365 days a year. Consequently, we are not in sync with nature.

Being out of sync with nature is discussed in the revolutionary book, *Last Child in the Woods.* The author, Richard Louv suggests that children today, and especially those living in urban environments, have very little communication with nature.[xi] One of the consequences is what he calls, nature-deficit which can result in some of the most disturbing childhood trends, which includes rises in obesity, attention disorders, and depression. Moreover, adults often relate their childhood nature experiences to their children in consumerist, overly sacred, romanticized, or dangerous narratives.

In relation to romanticized and dangerous perceptions of nature, Bourdeau understood the future challenges:

> "*Nature can be seen as beautiful and harmonious, but it also inspires fear in man (sic) who has had to fight it in order to survive. Now, nature is threatened by man who has become detached from it. Technology has endowed humans with the power of a major geological agency, which may act on a continental or even planetary scale (e.g., acid rain, photochemical smog, radioactive contamination, stratospheric ozone depletion, climate change).*"[xii]

Consequently, children grow to become adults who learn to regard nature as irrelevant, or associate nature with fear and catastrophe, or else sentimentalize it. Our appreciation and respect for nature decreases as we 'trap' nature in the flatness of our paper charts and google maps. We "visit" websites such as, TripAdvisor[xiii] to read reviews about parkland and forest experiences, determining if we too should pay a visit based on how many stars are given. Consequently, other than the neighbourhood park, children today have no meaningful relationship with nature. Children can experience animated nature games and social media notifications, but less common is the rich human-nature experiences that the outdoors can offer. Louv discussed these concerns way back in 2008, and since then, research continues to show an increasing drop in nature connectedness, especially for those aged 7 to 15-years-old.[xiv]

[x] *Ibid*., 28.
[xi] Louv, *Last Child in the Woods*, 145.
[xii] Bourdeau, *The man-nature relationship and environmental ethics*, 9.
[xiii] See, https://www.tripadvisor.ca/
[xiv] Richardson, et., al, "Measure of Nature Connectedness for Children and Adults: Validation, Performance, and Insights".

3. What is Nature?

What is nature, and what does *valuing* nature imply? These two questions are important given that some knowledge approaches are epistemologically limited. For example, science, as a way of knowing, is one important means for understanding nature, however it is epistemologically limited, and largely unfinished, and so philosophy, as another way of knowing, can make its contribution.[xv] Philosophical *knowing* is not about demonstrating 'rightness' because philosophy is non-judgmental. Instead, philosophy pursues wisdom, the fundamental nature of things, and truth, and so the philosophical enterprise is a manifestation of being a thoughtful inquiring person. In terms of nature, we need the *is* of science for knowing *about* nature, and the *ought* of philosophy for knowing how we *should* interact with nature.

'Nature' has several different meanings. For example, nature can refer to the essence of something as we muse over the *spirit* of a deer, a mountain, or a valley. Alternatively, nature can refer to a person's character, i.e., Jody has an aggressive nature. In addition, nature can be a physical force, i.e., firefighters were at the mercy of nature.

Nature can also embody the cosmos. Consider the thoughts of the English philosopher, John Stuart Mill,

> "*Nature*", Mill construed, is "*the sum of all phenomena, together with the causes which produce them; including not only all that happens, but all that is capable of happening; the unused capabilities of causes being as much a part of the idea of Nature as those which take effect*."[xvi]

In other words, the birds and animals, the land, the wind, insects, sky, oceans, rain, sun, and hurricanes are what most people mean when they speak of 'nature'. This correlates with many Indigenous people, that is, nature encompasses all water, earth, and air, however, nature refers not only to a geographic place but "*gestures to the ways that discourses within places inform and are informed by our vision, pedagogies, and teaching practices*."[xvii]

Comparing how nature is generally understood by Europeans and Indigenous peoples, two distinct worldviews are apparent. According to Kohak, author of *The Green Halo: A Bird's Eye View of Ecological Ethics* the original Indigenous Australians provide an analysis of nature that was different to Europeans. For Indigenous people, nature was not about *interpretation*, but rather *perception*. Indigenous people valued nature, not as raw materials, but laden with spirit, value and meaning.[xviii]

What nature *is* has epistemological significance, although *how* nature is *perceived* is also important for epistemological diversity.[xix] In the book *Braiding Sweetgrass*, Robin

[xv] Sokolowski, *Introduction to Phenomenology*, 201.
[xvi] Mill, *On nature*, 8.
[xvii] Styres, Haig-Brown, Blimkie, *Towards a Pedagogy of Land: The Urban Context*, 4.
[xviii] Kohak, *The Green Halo: A Bird's Eye View of Ecological Ethics*, 54.
[xix] *Ibid*., 57.

Kimmerer, considers an Indigenous epistemology of nature. Nature, Kimmerer suggests, is a gift and so nothing in nature, i.e., trees, berries etc., can be bought or sold—they are part of nature's gift economy, and a gift is always something that is offered freely. However, a gift also carries obligations for the receiver. Kimmerer uses wild strawberries as an example of nature and gift-giving. Nature provides wild strawberries as a gift, and when perceived in this way, an ongoing relationship begins, that is, "*the receiver now has a responsibility to the gift giver*."[xx] Similarly, Kohak cites anthropologists realizing the gift economy of hunter-gatherer people and their interactions with nature. They understand and receive the gifts of nature but do not manipulate or farm nature. They are in partnership with nature and live together in harmony. They understand that nature always transcends human beings because humans are continually dependent on nature.

For Indigenous people, trees, raccoons, porcupines are clearly part of nature, but nature is not necessarily something that is objective. To people of the European conceptual heritage, the scientific explanation of nature *is* objective, that is, nature as it "really" is.[xxi] At *Home on the Earth: Becoming Native to our Place*, David Barnhill[xxii] explains how relationship forms an understanding of nature. Our relationship to the earth is radical, that is, it lies at the root of our perception and our culture and any sense of a rich life and the right livelihood.

Largely understood as a property right, a Eurocentric worldview of nature contrasts with an Indigenous worldview of nature where nature is living and experienced as a gift from the Creator and humans are but one part of a greater harmonious being that they are obliged to respectfully participate. Nature cannot be owned, rather, nature is inherited and shared. Therefore, we must appreciate the epistemological limitations of science as the only way of knowing and be open to other ways of knowing that provide a collective intelligence for guidance for relating to and behaving with nature.

4. Interpretations and Perceptions of Nature

If consideration is given to what nature is, or is not, a deeper question is raised for discussion. The subject is how nature is *perceived* and *experienced*. One perception is that the interdependency of nature encourages human beings to recognize their identity in community and relationship.

Subsequently, there are potential limitations in distinguishing "nature" from so-called "unnatural" environments.[xxiii] If we make this divide, then nature becomes a place people "go" to and not something they are intrinsically part of— in a relationship with. By implying that nature is "over there", suggests our western worldview commitment to Cartesian dualism, where everything is separated and non-related. Cartesian dualism

[xx] Kimmerer, *Braiding Sweetgrass*, 26.
[xxi] *Ibid*, 54.
[xxii] Barnhill, cited in hooks, *belonging*, 61.
[xxiii] Fletcher, Connection with nature is an oxymoron: A political ecology of "nature-deficit disorder", 228.

perpetuates the conceptual and perceptual human/nature industrial divide.[xxiv] As a result, the very concept of 'nature', being "out there" "ironically, impedes a proper relationship with the earth and its lifeforms."[xxv] We rarely look to our ancestors to learn how they lived in harmony with the natural world, and its changing seasons. Nature, as our ancestors understood and experienced, was everywhere, and so it is not just where we live or go to, it is the very reason we are alive.

The more time we spend with nature increases our understanding that nature is so vast, and that we are so small. Nature is not our enemy, to be divided and conquered, rather our lives are dependent on nature. We can value, respect, and cherish nature as we might do with our friends and family or we can ignore, exploit, and even harm nature. [xxvi] We have that choice.

5. Worldview and Nature

The concept of worldview offers a foundational approach to exploring nature. For the purposes of better insight, a worldview approach to nature is explained by Sepie as an origin story:

> "*Worldview is … a total ordering system, extending from cosmology (charter myths or origin stories) as the first principle, which informs ontology, epistemology, axiology, and practices (including those practices we call culture, religion, and identity).*"[xxvii]

Worldview always begins with *cosmology* because cosmology appears through our beginning stories, i.e., how we came to be, and where we came from. Cosmology can adopt a theological, cultural, spiritual, or scientific origin narrative.

The second aspect of worldview is *ontology*. This entails classifying or grouping things in various ways which demonstrate their uniqueness. For example, the tree has a distinct colour, shape, and even a spatial relation such as being 'on-top-of.'

The third component of worldview is *epistemology* which requires revealing the source or type of knowledge we draw upon to make sense of nature. This can entail scientific, theological, or cultural knowledge.

The fourth component of worldview is *axiology* which involves the values that we consider important to defend. This could be honesty, respect, gratitude, purity, tenacity, and commitment.

The final aspect of worldview is *practice* which involves how one *ought* to behave. A worldview accepts but often rules out other types of knowledge, values, and behaviour. A worldview understanding can explain how our origin stories guide us to perceive and interact with the natural world.

[xxiv] Zylstra, et al, *Connectedness as a core conservation concern: An interdisciplinary review of theory and a call for practice,* 221.
[xxv] Morton, *Ecology without nature: Rethinking environmental aesthetics*, 2.
[xxvi] hooks, *belonging*, 115.
[xxvii] Sepie, "Tracing the Motherline," 8.

A worldview is the main methodology we use to investigate the world. A person adopts a worldview and presupposes philosophical, scientific, and metaphysical principles about themselves and nature.

6. Environmental Worldviews

Now we know what characteristics embody a worldview, there are four major environmental worldviews that people live by according to their espoused philosophy. While people may know *where* they lie on the spectrum of worldviews, as previously explained, people may not know where they lie on the spectrum of *environmental* worldviews.

Environmental worldviews are important to realize because as recent approaches in environmental and animal history indicate, "*analyzing education in purely social and cultural terms may be a shortcoming stemming from a persistent and dominant worldview that only addresses humankind*."[xxviii]

The four worldviews offered by Robert Elmore[xxix] explain how human beings relate to nature and behave on the earth. After reading the descriptions of each one, which of these most closely echoes your environmental worldview?

1) the anthropocentric or human-centered worldview,
2) the geocentric or earth-centered worldview,
3) the acentric (all equal) worldview,
4) theocentric (God-centered) worldview.

The *anthropocentric* or *human-centered* worldview. This assumes the interests of humans should take precedence *over* the interests of nonhumans. In other words, a focus primarily on the needs and wants of people. The advantage is that maintaining the environment for human material benefit is often the greatest motivation for nature protection.[xxx] One example of the *anthropocentric* worldview is discovered in the story of Gifford Pinchot who was a young forester who eventually became the first chief of the U.S. Forest Service.

Pinchot's *anthropocentric worldview* meant he experienced nature as a resource that ought to be sustainably shared among the most people possible.[xxxi] For example, Pinchot believed that someone could have 'multiple uses' of National Parks, allowing for hunting, fishing, grazing, forestry, watershed protection, and the preservation of wilderness values.[xxxii] Generally speaking, human interests would take priority over the concerns of nature. This sharing of nature, i.e., the commons, is sometimes referred to as the 'tragedy of the commons'. Elmore suggests that there is a "tragedy" of the commons when an

[xxviii] Caruso, Reh and Fuchs, *Education and nature*, 5.
[xxix] Elmore, *Our relationship with the ecosystem and its impact on sustainable agriculture*, 43
[xxx] Norton, *Environmental ethics and weak anthropocentrism,* 131–148.
[xxxi] Keel, "Frenemies."
[xxxii] Hoffman, and Sandelands, "Getting Right with Nature: Anthropocentrism, Ecocentrism and Theocentrism", 7.

anthropocentric sharing of nature becomes unsustainable.[xxxiii] William Forster Lloyd also dubbed this "*the tragedy of the commons*."[xxxiv] Consider any National Park which is open to all without limit. It is to be expected that people use the park any day and hour of the week. Visits and traffic to the park increases as people arrive in greater numbers. The Park has some free parking, however, this causes people to park there all day thereby stopping others who could also share in the park. The number of people increases and so pollution increases, wildlife decreases, and the destruction of plants and vegetation become more evident over time. Eventually, the park is closed to regenerate without the presence and disturbance of people. This is one example of what is called, 'the tragedy of the commons'. When nature is free to use for all, with minimal restrictions, it can and will be exploited.

The *geocentric* or *earth-centered* (biocentric) worldview is focused on individual species, the entire biosphere, or some level in between. The *earth-centered* worldview assumes that "*because humans and all forms of life are interconnected parts of the earth's life-support system, it is in our own self-interest not to act in ways that impair the overall system*."[xxxv]

The acentric (all equal) worldview imagines everything is one and part of the same essence with no major difference between species or things. All is one and everything is interconnected.

Finally, the theocentric (God-centered) worldview acknowledges a higher authority exists in conjunction with people and the ecosystem—specifically God as the creator of nature—who also created people in part as stewards of creation. Wilderness should be conserved because it possessed, if not embodied, spiritual value beyond what humans could comprehend.[xxxvi] John Muir who was a famous naturalist in American history is an example of someone who held to a *theocentric worldview.* He perceived nature as God and understood that nature is best preserved from the damaging touch of human beings.

Gifford Pinchot and John Muir revealed a *biocentric* and *theocentric* or *earth-centered* worldview. Pinchot and Muir both held to a *biocentric worldview* meaning that all life matters, not just human life, although they diverged in how their worldviews should be applied.[xxxvii] Muir and Pinchot represent two contrasting worldviews of nature and these environmental perspectives tend to resonate with most people at some level. We tend to be either a Pinchot (we should engage with nature but do it responsibly) or a Muir (leave nature completely alone). Which one are you?

There are also four environmental worldview applications of nature shown in Figure 1:

[xxxiii] Elmore, *Our relationship with the ecosystem and its impact on sustainable agriculture,* 43.
[xxxiv] Lloyd, *Two Lectures on the Checks to Population*, p.37
[xxxv] Environmental Worldviews, Ethics, and Sustainability, What are some major environmental worldviews? 665 (See https://docslib.org/doc/647731/environmental-worldviews-ethics-and-sustainability-25).
[xxxvi] Hoffman, and Sandelands, "Getting Right with Nature: Anthropocentrism, Ecocentrism and Theocentrism", 7.
[xxxvii] Anthonya, et al, *Surveying Environmental Perspectives among Faculty at an Institution of Christian Higher Education*, 138.

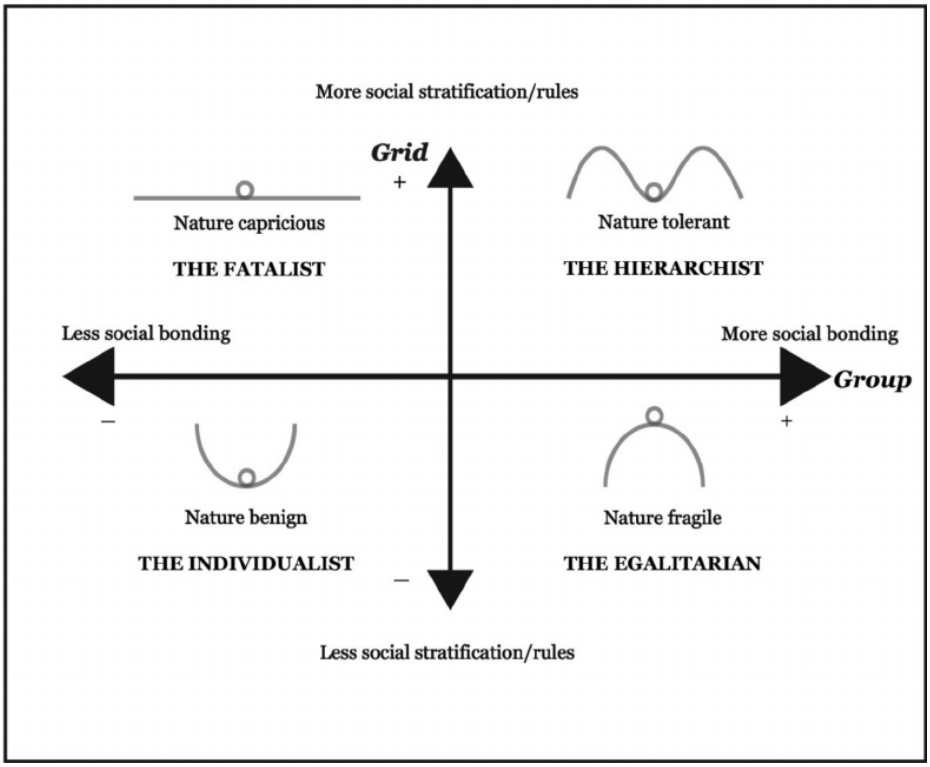

Figure 1: The Four Worldviews and Views of Nature Described in the Cultural Theory of Risk (Figure adapted from McNeeley and Lazrus 2014)[xxxviii]

The *individualist* worldview is of weak social bonds and minimal social structure, while the *fatalist* worldview perceives nature as capricious and fundamentally random and unpredictable. The *heirarchist* worldview believes nature is manageable and tolerant of some human-induced changes and will thus accommodate human action to a point, which is identified and planned for by scientific experts. The *egalitarian* worldview believes nature is fragile and in a precarious balance with humanity.[xxxix]

Human culture is born in the wild, we draw our food there. It is, as Henry Thoreau described,[xl] "the salvation of civilization" which means no climbing every mountain because it is there", that is, the wild should stay wild.[xli] Whichever worldview one finds most compelling, and the worldviews are important for understanding the beliefs and behaviors of people when in nature, what often unites environmental worldviews, and in particular, *earth centered* and *theocentric* worldview is the teaching responsibility of nature. We now turn to the teaching role of nature.

[xxxviii] McNeeley and Lazrus, "The Cultural Theory of Risk for Climate Change Adaptation", 506-519,
[xxxix] Thompson, Ellis, and Wildavsky.
[xl] Thoreau, *Reflects on Nature*, 117-121.
[xli] Jenkinson, *Come of Age: The Case for Elderhood in a Time of Trouble*, 172.

7. Nature as Teacher

Nature is our original teacher since human beings developed in the wild. In fact, nature continues to be "*perceived as an educative tool in itself. For instance, natural environments for learning have been reclaimed as being a counterbalance to the artificial environment of education. Here, green playgrounds, school gardens, the contemplation of forests and landscapes, and the use of purportedly "responsive" animals in education and therapy are some of the remedies*."[xlii]

The following six analogies illustrate the *teaching* role of nature.

Nature as teacher: *solitude*.

Nature is a teacher of solitude. It is a fact that nature can be a threat to one's existence providing an opportunity for contemplation. Think of the barren spaces of an empty desert or the feeling of looking over a cliff top. The solitude often invokes an undistracted communication between something that is greater than we are. People speak of being lost in a dark cloud on a mountain top, and the experience of losing their separate identity, being stripped of self, and becoming one with the cloud offering an awareness of the existence of existential greatness.[xliii] A few summers ago, I visited the town of Jasper Alberta in the Rocky Mountains of Canada, and spent a whole day hiking up one of the mountains. I still remember pausing on the mountain for a few minutes as a dark cloud of cold and mist slowly embraced my whole being. The feeling of isolation, together with the silence and the peace I experienced in those brief few minutes offered an existential reality that I knew was greater than me. The focus was no longer on me, or the time, my breathing, hunger, or thirst. It was a teaching moment of submission and humility which I never will forget.

Nature as teacher: *responsibility*.

Nature is a teacher of responsibility. We interact with nature in relationship, however, like any relationship, we frequently take advantage of what has been given. And so, like a child climbing a tree or building a tree house can disturb the tree, it may be that the greater good is to understand the obligations we now have to that tree. We are in a co-relationship with the tree, entangled with each other. The 'Tree of Life', the human-nonhuman connection. The lesson is that the tree and I are enmeshed with each other, and human beings have an obligation to cooperate with and learn from those with whom we are entangled.

This raises questions about our entanglement and mutual responsibilities to each other in these challenging ecological times.[xliv] For example, ants, as small as they are, move us away from our heroic individual human narrative of rescue and recovery. Ant encounters demonstrate the folly of treating the world only on a human stage and seeing ourselves as the only actors in it. Ants teach us that an individual is not really an individual at all, but is part of interacting ecologies of interdependent relationships,

[xlii] Caruso, Reh and Fuchs, *Education and nature*, 5.
[xliii] Lane, *Exploring the Desert Solace and of Mountain fierce Spirituality Landscapes*, 6.
[xliv] Styres, Haig-Brown and Blimkie, "Learning with insects: towards a common world pedagogy", 3.

consequently, the ideal of the autonomous individual is and should be revealed as a western cultural myth.[xlv] Like ants, we have to work together to achieve great things in life.

In fact, human lives are dependent on the lives of others, much smaller, often overlooked, and sometimes invisible creatures. In an interview with author Oliver Milman, the interviewer Davies records the following thoughts:

> *"Three-quarters of the world's flowering plants and about a third of the world's food crops depend on these important pollinators, such as bees, wasps, and flies, at some stage. Without these creatures, we would be without apples, cranberries, melons, almonds, broccoli, blueberries, cherries, spices, curries, and alphafa, just to name a few".* [xlvi]

This should cause us to question our entanglement, dependence, and mutual responsibilities to each other in these critical and exciting ecological times

Nature as teacher: *exploitation*.

The world is not just about us, and we are not its only learners, scriptwriters, actors, movers, makes, and shapers. Simply put, we are not as separate from the rest of the world as we would like to think. Although human beings are exceptional in both good and bad ways, that is, we exploit what we are given, and what is shared, and we always risk anthropocentric hubris. We either forget or ignore the choices we make and the lives we live, are also entangled with nature and the lives of other species.

We explore the wisdom teachings of nature and the consequences of not caring. One way to recognize how humans have depicted the exploitation of nature is to observe nature and human interaction as portrayed in the movie industry. The iconic movie monsters from the 1950s provide a sequence of consequences for humans exploiting the environment. For example, Murray and Heumann refer to the 1954 film *Godzilla* as Godzilla presents a cautionary symbol of the dangerous costs associated with mistreating the natural world— monstrous nature on the attack. Godzilla provides a space in which to explore the complexities of a monstrous nature that humanity both creates and embodies." Arrogance is seen in those who think they can control and subdue nature. [xlvii] In *Avatar* (2009), the forests are decimated, biodiversity is demolished, carbon is released into the atmosphere, and the Indigenous communities are slowly weakened and destroyed. The lesson for humans is that arrogance, pride, injustice, and exploitation are human attributes that must be countered by the virtues of humility, moderation, and wisdom.

[xlv] Bowers, *University reform in an era of global warming*, 127.

[xlvi] See interview with Oliver Milman by Dave Davies, "The world's insect population is in decline — and that's bad news for humans." https://www.wrkf.org/2022-02-24/the-worlds-insect-population-is-in-decline-and-thats-bad-news-for-humans

[xlvii] Murray, and Heumann, "Monstrous Nature: Environment and Horror on the Big Screen", xi.

Nature as teacher: *revenge*.

The notion of nature's revenge is another theme unveiled in the movie industry. For example, in the *Wizard of Oz (*1939), *The Lord of the Rings* and *The Two Towers* (2002), trees transform into "monsters" seeking revenge against the human world of oppressors that exploit them, which not only highlights the power of nature, but also shows how nature will ultimately fight back. As Murray and Heumann remark, "*In the Lord of the Rings, trees have fought back against humans, "becoming monstrous nature*." Sam watches the attack from the branches of one of the surrounding trees.

In the *Wizard of Oz* trees become animated when their apples are stolen. In *The Two Towers*, the trees ultimately seek vengeance against Saruman and his army when their leader sees a section of Fangorn Forest that Saruman has destroyed to feed his iron forges. xlviii The lesson is that are consequences that come with choices and freedom.

Nature as teacher: *healer*.

Nature teaches us to slow down, and that life need not be rushed, consequently, many people seek the remedial health benefits and healing advantages of nature. The psychological benefits of being in nature are so obvious that many doctors prescribe what has been called "nature therapy" to their patients. This involves time with nature to help alleviate anxiety and depression.

In nature, we engage delicately in the "primary experience" of seeing, feeling, tasting, hearing, and smelling.[xlix] Our attention is gently drawn to the details of the surrounds and to the larger experience of where we find ourselves. I remember a few years ago, a schoolteacher who had recovered from a near-death experience, told me that she now gives her attention and appreciation to the tops of trees because, as she explained, the treetops have weathered the storms and challenges of life and survived. The treetops had made it through life, especially the harsh winters. This teacher was in her own season of "winter", but the treetops gave her hope during an uncertain future.

People often bring their pain, losses, and heartaches to the healing qualities of nature. Nature does not judge us but accepts us just as we are, and so we are in a good place with nature.

Nature as teacher: *conserve*.

Scientists and engineers are working on technological solutions to reduce greenhouse gasses, but we are also being instructed to keep consuming as economic growth is prioritized.[l] Nature teaches us that consumption is dangerous. Nature shows us what happens when "*we take from the planet more than we're regenerating. [It's] a particular strand of overconsumption, where we purchase things, not to fulfil our basic needs, but to fill some void in our lives and make social statements about ourselves*."[li] Political scientist, Robert Putman argues that we are paying the ultimate price for our consumeristic

[xlviii] *Ibid*, xiv.

[xlix] Louv, *Last Child in the Woods*…, 65.

[l] Bowers, *University reform in an era of global warming*.

[li] Leonard, *The Story of Stuff.*

tendencies with the loss of friendships, and fragile communities that are less supportive and trusting.[lii]

As we consume more and conserve less, we disregard the cultural values and behaviors that placed limits on environmentally polluting activities.[liii] The old traditions that formed communities such as the sharing of natural resources, skills, and knowledge, are going, if not gone already. As a result, people experience more individualistic and lonely lives which leads to consumeristic and dependent livelihoods. This is because voids always tend to be filled with something.

Consumerism increases the extraction of nature's resources, as industries operate at higher levels due to consumer demand. There is a loss of quantity and quality of natural resources, such as water, due to the dumping of increasing waste in rivers and oceans. Nature teaches us that there are consequences for not respecting and conserving our waterways. In Grassy Narrows in northwestern Ontario Canada, for over 50 years, the Asubpeeschoseewagong First Nation community has suffered water contamination from the mercury dumped into the river system from the pulp and paper mill industries. As a result, nearly 90 percent of Grassy Narrows community members suffer from symptoms of mercury poisoning.

The natural world is, for the reasons presented, a teacher; but what are its lessons for an impatient and consumerist humanity? Nature teaches us that everything is accomplished in just the way it should be and at the right time. Nature *is* a teacher, and we ought to listen and learn because nature is self-sufficient and older than us. We should fear its demise and respect its existence.

8. Nature Care and Following Through

When encountering a tree in the forest, we do not see the tree only as timber, rather we regard its being, and its attributes of strength, size, beauty, resilience, or magnificence.[liv] We value the tree for its 'tree-ness' but refer to its other absent properties, not just those that are present. We perceive what is not obvious to the eye, thinking of something in its absence; we can transcend our immediate environment.[lv] If humans' value what is seen and what is not seen, why don't we do a better job realizing the value and potential of nature? If humans are unique, they must behave uniquely.

Here is a thought experiment. Without adequate predation, deer left to graze and reproduce soon find themselves in the midst of an ecological crisis of their own making. Without "higher consciousness" deer simply cannot choose to eat less and have fewer offspring. It is part of their instinctual hardwiring simply to do what deer do. Humans, on the other hand, have the intellectual ability to make choices and solve problematic circumstances. While humans can theoretically resolve the large-scale ecological

[lii] Putnam, *Bowling alone*.
[liii] Bowers, *University reform in an era of global warming*.
[liv] Rolston, "Value in Nature and the Nature of Value. Royal Institute of Philosophy Supplements", 14.
[lv] Sokolowski, *Introduction to Phenomenology*, 45.

problems they cause, they generally do not, and in many cases see no reason to be concerned about such matters, but what drives this apathy?

Humans can value but we do not always follow through on those values. One reason is that as we become more urbanised as city dwellers, we are increasingly disconnected with nature. Nature is 'out there' somewhere but is has no importance in the city. Urbanization swallows up natural areas and cuts people off from their natural surroundings. Our urban lifestyles do not require us to care much about nature. In the year of 2015, 53.9 percent of the world's population lived in cities, and this percentage is forecasted to grow to 62.5 percent in the year 2050.[lvi] Consequently, we are experiencing less time with nature, let alone having experiences working the land for our sustenance or survival. In a study by Kesebir and Kesebir, they determine the increasing disconnection of nature is more likely city living, technological change, and in particular the burgeoning of indoor and virtual recreation options such as television and video games which comes with suburbanization and technology.[lvii]

In contrast, the 1872 painting below by Winslow Homer's *Snap the Whip* shows children playing in wide-open green fields. The lived and shared experience of joy and connection to nature is evident in these children. The energy passes between them and this place, which has become an expression of their lives. It is easier to care for and appreciate nature when you live with and regularly interact with nature as these children are most likely doing.

"Snap the Whip": Winslow Homer, 1872

Author, Robin Kimmerer notes the relationship of land with people. In response to human care and protection, she reports that the land gives back to people, a kind of shared bi-directional relationship. One example is a home garden. Many people care

[lvi] Statistica, *Proportion of population in cities worldwide from 1985 to 2050.*
[lvii] Kesebir and Kesebir, "How Modern Life Became Disconnected from Nature."

deeply for their gardens. They lovingly return to the soil something of its gifts in the form of compost.[lviii]

Kimmerer illuminates:

> "*She [garden] loves us with beans and tomatoes, with roasting ears and blackberries and birdsongs. She provides for us and teaches up to provide for ourselves. That's what good mothers do. The ultimate reciprocity, loving and being loved in return*."[lix]

We give and in return the garden, the land, gives back. This resembles the ancient image of the educator as a gardener. Yet with the rise and rise of condensed city living, people are minimally connected and even less dependent on the land. We rarely think about where our food comes. And yet, the importance we place on nature immediately awakens when droughts, floods, forest fires, or crop failure ruins the land. We thought only of independence, because that is what we have been taught to value and promote, but the events mentioned are a reminder of our fragility and dependence on nature. Sadly, it often takes a natural disaster such as a flood or drought resulting in crop failure and possible food shortages to reawaken us to care more about nature as a revered presence and partner in life.

9. Environmental Education: What Should be the Focus?

Although, formal schooling from K-12 to higher education is one of the influences that shape people's environmental values and attitudes, our behaviours and desires are also continually shaped by social and mainstream media, friends, family, and our political associations. Therefore, when we speak of environmental 'education' everything must be included: formal schooling, social media, politics, and so forth, that is, all that affects what we know, practice, and love.

Although climate change, deforestation, and other realities are always a pressing concern, education about the environment can frequently be offered in a gloomy and fatalist way. If education is largely a social process, as noted by philosopher and educator John Dewey, then learning about the environment is not a preparation for life, but as Dewey observed, *life itself*.[lx] If we apply this to environmental education then educators and learners can set aside their anxieties about the environment and revel in this opportunity for wisdom and humility, for this is, in fact, life itself.

This approach would embody the *ethical* aspects of our relationship with nature including our habits and decision-making. For example, a fisherman takes as much as he needs for his family's sustenance, but no more. In *Braiding Sweetgrass*,[lxi] Kimmerer explains our relationship with nature by way of indigenous wisdom. To be wise is to

[lviii] Kohak, *The Green Halo: A Bird's Eye View of Ecological Ethics*, 55.
[lix] Kimmerer, *Braiding Sweetgrass*, 122.
[lx] Dewey, *Democracy and Education. An introduction to the philosophy of education.*
[lxi] Kimmerer, *Braiding Sweetgrass.*

understand and practice a habit of generosity. Kimmerer notes that cedar trees can teach us generosity because of all they provide, from canoes to capes. The focus is reciprocal care and observance and moving away from the mindset and habit of being destroyed by a lifestyle of consumption which includes autonomous individualism, indubitable rationality, and technology as the answer to the many challenges of life.

Environmental education could encourage a hopeful outlook living in relationship with nature. People are inspired to involve themselves in meaningful experiences with nature and to imagine what a careful balance of land use and human involvement should look like today. Problem-solving must not always pursue the "experts" as the solution to environmental problems because resorting only to the "experts" and relying only on technological solutions hands the problem-solving over to others and neglects the wisdom and responsibility that individuals could learn on a local level.

10. Thinking like a Mountain: Critical Thinking

Naturalist and ecophilosopher, Aldo Leopold, sometimes recognized as the "Father of Wildlife Ecology, wrote about the interconnectedness of nature within the entire ecosystem. His theme of 'thinking like a mountain', described nature in terms of the whole ecosystem and not just one species or phenomena, in other words, thinking about the mutual dependence of everything in nature. The following thoughts from Leopold's as he witnesses the last few minutes of a dying wolf's life illustrates his ecosystem thinking:

> "*We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain*."[lxii]

If 'we' are to survive the Anthropocene, [lxiii] Leopold maintained that human beings must not think in terms of individual value, such as the life of the wolf, but in terms of the entire balance of life. For example, the mountain only cares about the balance of life – that is, the entire ecosystem.[lxiv] So the lesson for human beings is a role change, that is, from conqueror of nature to plain member and citizen of it.[lxv] When we do that, we can surpass our individual wants and needs, and increase the ability to think long-range, collectively, and unselfishly.

If we 'think like a mountain', that is, in terms of the whole ecosystem, how would recycling, for example, factor into the entire ecosystem? We know that recycling can reduce the demand for new mining; however, recycling does not address the greater

[lxii] Leopold, *A Sand County Almanac*, 129–33.
[lxiii] Anthropocene is the period during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological age.
[lxiv] Kohak, *The green halo*, 88.
[lxv] Leopold, *A Sand County Almanac,* 240.

challenge to nature and that is today's hyper-consumerism.[lxvi] Hyper-consumerism is a far greater threat to the entire balance of life and the ecosystem. One recent example is the electric car industry. Although fossil fuels have their own environmental problems there are numerous environmental problems with the electric vehicle industry. If we just consider the lithium batteries that power the vehicles, these are made from non-renewable materials. A 2019 report[lxvii] by Mark Mills revealed more than 500,000 pounds of the earth must be dug, and moved to get enough lithium, cobalt, nickel, graphite, and copper ore for *one* 1,000-pound electric vehicle battery. Making one car battery requires digging up, moving, and processing more than 500,000 pounds of raw materials.

Consider for a moment Congo, home to 70 percent of the world's cobalt. The extraction of cobalt involves child labor, harsh working conditions, pollution, and increasing birth defects.[lxviii] Also consider Tesla, the world's best-known battery maker. Mills claims that $200,000 worth of Tesla batteries, which collectively weigh over 20,000 pounds, are needed to store the energy equivalent of just one barrel of oil.[lxix]

The Sydney-based Institute[lxx] for a *Sustainable Future* says the technology needed for electric vehicles is increasingly problematic as it attempts to solve one environmental problem by creating another environmental problem. The Institute cautions that a global "gold" rush for minerals could take miners into "some remote wilderness areas [that] have maintained high biodiversity because they haven't yet been disturbed." Better strategies, they note, would be to reduce demand and consumption, such as improved public transport and car sharing. However, although car sharing can potentially reduce the number of privately-owned cars, they may be used more intensively which could shorten battery life, and there is limited evidence to suggest that car-sharing schemes have resulted in a significant reduction in car ownership.

With all this in mind, I ask myself the question: are we thinking in terms of needs or wants, or in terms of the entire balance of life? Is this a good example of environmental stewardship that meets the needs of people and considers the preservation of the ecosystem or is just an example of novelty and hype, i.e., hyper-consumerism.

Ecosystems are complex and strategies such as individual recycling and expanding the electric vehicle industry is low hanging fruit. *Thinking like a mountain* is a reminder that decisions about the environment must not be made at an individual level, but in terms of the entire balance of life.

[lxvi] Capitalism began as a system for meeting the real human needs of consumers; however, today more people are buying goods that they don't need, i.e., hyper-consumerism. This is a distortion of the original intent of capitalism. For more, see Benjamin R. Barber's book, *Consume: How Markets Corrupt Children Infantilize Adults And Swallow Citizens Whole*.

[lxvii] Mills, "The "new energy economy: An exercise in magical thinking", 1-24

[lxviii] *Ibid.*, 1-24.

[lxix] *Ibid.*, 11.

[lxx] Sydney-based Institute for Sustainable Futures, "Are electric cars as sustainable as they sound?"

11. Conclusion

The popularity of community gardens, more people buying locally, and a greater awareness of Indigenous wisdom suggest there is a change in the wind. People are beginning, albeit slowly, to let go of their modern values of hyper-consumption. We are beginning to lose our taste for the industrial prepacked and canned. Although a generation of children was raised in a world where ketchup and French fries were counted as vegetables and still are, we are increasingly snubbing fast food and moving in the direction of *slow* food. We want to know where our food and energy comes from.[lxxi] Bigger, faster, and cheaper is not always better. In a similar way to food, our environmental worldviews are changing, as we engage with nature and begin to understand how organically beautiful, wise, sensual, patient, and spiritual it is.

When nature is experienced as a gift, we live together responsibly. We engage with nature and do it maturely. Alternatively, we can leave nature completely alone. However, I think a relationship with nature that acknowledges and learns from its 'teachings', without cannibalizing what we learn and inherit helps to furnish humility and wisdom, much-needed virtues in a world of hype and novelty. Humility and wisdom open our hearts and minds to the truth, that we are not the creators of nature, rather we are tenants.

Nature teaches us to be attentive, to notice what non-humans notice, and to question why we notice what we notice. The natural world is, for that reason, a good and wise teacher. Formal education is necessary for shaping environmental values and attitudes but alone it is insufficient. We must experience and be involved with nature because all healthy relationships require active participation.

Finally, if we are to survive the Anthropocene, Western culture must think in terms of not individual value, rights, and needs, but in terms of the entire ecosystem. It is the difference between individual and collective responsibility transcending a contemporary culture of wanting more. We should never place individual autonomy, progress, pride in ourselves, or novelty over the wellbeing of other living entities which includes all of nature. Nature has much to teach humanity, but the question remains: will we be attentive, and are we ready to learn from our non-human teachers?

Conflict of Interest Statement
The author has no conflicts of interest to declare. There is no financial interest to report. I certify that the submission is my original work and is not under review at any other journal and I have no commercial associations that might pose a conflict of interest in connection with the submitted research article.

About the Author
The author achieved his PhD in the philosophy of education from Macquarie University in Sydney, Australia while completing doctoral research at the Ontario Institute for Studies in Education (OISE). He is presently a Professor in the School of Education at

[lxxi] Fields, *The Spirit of Food*, xxii

Trinity Western University, British Columbia, Canada. The author is a co-director of the Institute of Indigenous Issues and Perspectives (IIIP). His primary interests are in epistemological diversity, Indigenous pedagogy, and philosophy. Matthew has published four books, Changing Careers to Become a Teacher: A Study of Mature Age Preservice Teachers in Career Transition; Foundations of Education: (editor and author); What Teachers Need to Know: Topics of Inclusion (editor and author) and Perspectives on Working Life (author). He writes on a diversity of topics using a philosophical lens for analysis.

Bibliography

Arendt, Hannah. *The Human Condition*. Chicago: The University of Chicago Press, 1985

Ardoin, Nicole M. & Heimlich, Joe E. Environmental learning in everyday life: foundations of meaning and a context for change. 2021, https://www.tandfonline.com/doi/full/10.1080/13504622.2021.1992354

Berger, P. and Zijderveld, A. *In praise of doubt: How to have convictions without becoming a fanatic*. New York. HarperOne, 2009

Bourdeau, P. H. The man-nature relationship and environmental ethics. *Journal of Environmental Radioactivity*, 72(1-2), 9-15, 2004.

Bowers, Chet. A. *The False Promises of Constructivist Theories of Learning: A Global and Ecological Critique*. New York: Peter Lang Publishing Inc, 2005.

Bowers, Chet. A. *University reform in an era of global warming*. Oregon: Eco-Justice Press, 2011.

Caruso, Marcelo., Reh Sabine and Fuchs Eckhardt. Education and nature. *Paedagogica Historica*, 56:1-2, 1-8, DOI: 10.1080/00309230.2020.1747505, 2020.

Caruso, Marcelo., Reh Sabine., and Fuchs, Eckhardt. *Education and nature.*

Carvalho, Isabel Cristina de Moura; Steil, Carlos Alberto; Gonzaga, Francisco Abraão. Learning from a more-than-human perspective. Plants as teachers, *Journal of Environmental Education.* 2020, Vol. 51 Issue 2, p144-155. 12p. 1 Diagram. DOI: 10.1080/00958964.2020.1726266.

Choukas-Bradley, Melanie, *Resilience: Connecting with Nature in a Time of Crisis*, 2020, Washington: ChangeMaker Books.

Darian, Steven. *Understanding the language of science*. Austin: The University of Texas Press, 2003.

Dewey, John. *Democracy and Education. An Introduction to the Philosophy of Education* (1966 edn.), New York: Free Press, 1916.

Elmore, R. W. Our relationship with the ecosystem and its impact on sustainable agriculture. *Journal of Production Agriculture*, 9(1), 42–45. https://doi.org/10.2134/jpa1996.0042, 1996.

Fields, Leslie Leyland (Ed). *The Spirit of Food.* Oregon: Wipf and Stock, 2010.

Fletcher, Robert. Connection with nature is an oxymoron: A political ecology of "nature-deficit disorder", *The Journal of Environmental Education*, 48:4, 226-233, DOI:

10.1080/00958964.2016.1139534 To link to this article: https://doi.org/10.1080/00958964.2016.1139534, 2017

Gehlen, A. *Man, His Nature and Place in the World*. New York: Columbia University Press, 1988.

Hoffman, Andrew & Sandelands, Lloyd. Getting Right with Nature: Anthropocentrism, Ecocentrism and Theocentrism. Organization & Environment. 18. 10.1177/1086026605276197, 2004.

Hooks, Bell. 2009. *Belonging: a culture of place*. New York: Routledge, 2009.

Institute for Sustainable Futures. "Reducing new mining for electric vehicle battery metals: responsible sourcing through demand reduction strategies and recycling." https://www.uts.edu.au/sites/default/files/2021-04/20210423_EW%20report%20final.pdf, 2021.

Jenkinson, Stephen, *Come of Age: The Case for Elderhood in a Time of Trouble*, California: North Atlantic Books, 2018.

Kaza, Stephanie. *Conservations with Trees: An Intimate Ecology.* Shambhala Publication, Inc, 2019.

Keel, Lukas. "Frenemies: John Muir and Gifford Pinchot." https://www.neh.gov/article/frenemies-john-muir-and-gifford-pinchot, 2020.

Kesebir, Selin, and Kesebir, Pelin. "How Modern Life Became Disconnected from Nature", https://greatergood.berkeley.edu/article/item/how_modern_life_became_disconnected_from_nature, 2017.

Kimmerer, Robin Wall. *Braiding Sweetgrass.* Milkweed, Minnesota, 2019.

Kohak, Erazim. *The Green Halo: A Bird's Eye View of Ecological Ethics*. Chicago: Open Court, 2000.

Lane, C. Belden. *Exploring the Desert Solace and of Mountain fierce Spirituality Landscapes*. New York: Oxford University Press, 1998.

Leopold, Aldo. *A Sand County Almanac*. New York: Oxford University Press, 1949.

Lloyd, W. F. Two Lectures on the Checks to Population (Oxford University Press, Oxford, England, 1833), reprinted (in part) in Population, Evolution, and Birth Control, G. Hardin, Ed. Freeman, San Francisco, 1964.

Louv, Richard. *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder*. New York: Workman Publishing, 2008.

Lukaš, Mirko and Munjiza, Emerik. 2014. Education system of John Amos Comenius and its implications in modern didactics, život i škola br. 31, 1. God. 60, 32–44, 2014.

Luntley, Michael. "On education and initiation." In, Stefaan Cuypers and Christopher Martin, e.ds, *Reading R.S. Peters today: Analysis, ethics and the aims of education*. United Kingdom: Wiley-Blackwell, 2011.

McNeeley, Shannon, and Heather Lazrus. "The Cultural Theory of Risk for Climate Change Adaptation. Weather, Climate, and Society." 6(4):506-519, 2014.

Mills, Mark. The "new energy economy": An exercise in magical thinking. https://media4.manhattan-institute.org/sites/default/files/R-0319-MM.pdf, 2019.

Morse, J. W., Gladkikh, T. M., Hackenburg, D. M., Gould, R. K. COVID-19 and human nature relationships: Vermonters' activities in nature and associated nonmaterial values during the pandemic. PLoS ONE 15(12): e0243697. https://doi.org/10.1371/journal.pone.0243697: 16-24, 2020.

Morton, T. *Ecology without nature: Rethinking environmental aesthetics*. Cambridge, MA: Harvard University Press, 2007.

Murray, Robin L and Joseph K. Heumann. *Monstrous Nature: Environment and Horror on the Big Screen.* University of Nebraska Press, 2016.

Norton, B. G. Environmental ethics, and weak anthropocentrism. *Environmental Ethics, 6*(2), 131–148, 1984.

Richardson, M., Hunt, A., Hinds, J., Bragg, R., Fido, D., Petronzi, D. Barbett, L., Clitherow, T. and White, M. "A Measure of Nature Connectedness for Children and Adults: Validation, Performance, and Insights." *Sustainability*. 11(12), 3250; https://doi.org/10.3390/su11123250, 2019.

Rolston, Holmes III. "Value in Nature and the Nature of Value. Royal Institute of Philosophy Supplements", Volume 36, 13 – 30. DOI: https://doi.org/10.1017/S1358246100006421, 1994.

Sepie, Amba Jessida. Tracing the Motherline: Earth Elders, Decolonising Worldview, and Planetary Futurity. A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Geography. Available from https://ir.canterbury.ac.nz/handle/10092/15916, 2018.

Sokolowski, Robert. *Introduction to Phenomenology*. New York: Cambridge University Press, 2000.

Sokolowski, Robert. Phenomenology of the human person. New York: Cambridge, 2008.

Statistica, "*Proportion of population in cities worldwide from 1985 to 2050.*" https://www.statista.com/statistics/264651/proportion-of-population-in-cities-worldwide/.

Steil, C. A and Carvalho, I. C. M. Epistemologias ecológicas: Delimitando um conceito. 2014, *Mana*, 20(1), 163–183. doi:10.1590/S0104-93132014000100006.

Styres, Sandra, Celia Haig-Brown and Melissa Blimkie. "Towards a Pedagogy of Land: The Urban Context." *Canadian Journal of Education* 36, 34-67, 2013.

Taylor, Affrica and Pacini-Ketchabaw, Veronica. Learning with children, ants, and worms in the Anthropocene: towards a common world pedagogy of multispecies vulnerability, Pedagogy, Culture & Society, 23:4, 507-529, DOI: 10.1080/14681366.2015.1039050, 2015.

Thoreau, Henry David, *Henry David Thoreau Reflects on Nature*, 1854, *Walden.* New York: 1910.

Thompson Michael, Richard J. Ellis, and Aaron Wildavsky. *Cultural Theory*. Boulder, Colo: Westview Press, 1990.

White, G. *Cultures in collusion: Traditional knowledge and Euro-Canadian governance processes in northern land-claim boards. Artic,* 59(4), 401-414, 2006.

Williams, Jerry, and Parkman, Shaun. On Humans and Environment: The Role of Consciousness in Environmental Problems. *Human Studies,* 26: 449–460, 2003.

Zylstra, M., Knight, A., Esler, K., and Le Grange, L. Connectedness as a core conservation concern: An interdisciplinary review of theory and a call for practice. Springer Science Reviews, 2, 119–143, 2014.