


## ARTICLE

# Navigating Approaches to “Thinking With”: A Discussion of the Practicalities of Posthuman Research Involving Young Children

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### Abstract

Though there has been a marked increase in research driven by posthumanist theory and inspired by the common worlds research approach, practical approaches to conducting this type of research have not been well documented and shared within the literature. This article explores the process of navigating the planning and conducting of research that aims to *think with* more-than-human worlds. Three research methods that were applied in a study involving young children in a forest school program are described: (1) non-participant observation, (2) observing the park through “sit spots,” and (3) the use of wearable cameras to film a different perspective. I explore each of these as a way to guide other researchers grappling with the tensions and challenges of conducting posthumanist research. Any combination of these methods could be considered within research that aims to disrupt the dominant anthropocentric lens in early childhood education for sustainability and beyond.

**Keywords:** Child-nature relations; common worlds; multispecies; posthumanism; research methods

### Introduction

In recent years, many researchers have turned to scholarship in posthumanism, ecofeminism, multispecies relations, new materialism and decolonialism to examine the intersections between children, sustainability and education (e.g., Hackett & Somerville, 2017; Nelson et al., 2019; Nxumalo, 2019; Weldemarian, 2017). Calls have been made to critically question ways of thinking and researching that reify problematic assumptions about human-nature relationships found within dominant discourses, such as the notion of human exceptionalism. Relational and contextual knowledge can offer ways of understanding the world and its inhabitants in a way that counters the dominant Euro-centric way and have the potential to contribute to the paradigm shift needed in fields such as education (Common Worlds Research Collective, 2020).

What, in practice, does this type of research look like? Though a different way of thinking and producing knowledge cannot be neatly tied into a “how-to” guide — indeed posthuman researchers caution against this — a discussion of practical guidance can nonetheless be helpful for researchers who are in early stages of envisioning a research project (with all the planning normally needed for, say, a graduate student thesis or dissertation, a grant proposal, or an application to a research ethics board). The aim of this article is to present three approaches that were used in a multispecies, common worlds research study and to discuss the merits of each as tools to help researchers *think with* their research context, whether that involves a group of

humans, other beings, materials, of forces such as weather. These tools, which could be termed “data collection methods” in a qualitative study, are not presented with the aim of establishing them as posthuman or post-qualitative research methods per se; rather, they are offered as topics of discussion towards a better understanding of the possibilities of conducting field work that is part of a posthuman exploration. Specifically, I wonder what three research methods, namely: non-participant observations, sit spots and wearable cameras, might offer researchers aiming to be inclusive of more-than-human worlds and to decentre the human (Pacini-Ketchabaw, Taylor & Blaise 2016). I argue that insight gained through these means can allow for posthumanist exploration conducted with, alongside and through an assemblage of beings and things which can enact a *thinking with* approach to research. I offer up my personal experience with these ways to produce knowledge, not as examples of what others should do or as cookie-cutter solutions, but rather as potential avenues and methodological considerations that might help others navigate the tricky, humbling, and complex waters of posthuman research.

### Theoretical grounding

This article draws primarily on posthumanism, as well as new materialism and other related theoretical approaches. Posthumanist thinkers view phenomena as being “multiple, subjective, and produced from a series of complex relations” (Ulmer, 2017, p. 836). Ontologically, posthumanism acknowledges diverse ways of knowing and being in the world. The work of Donna Haraway has been foundational to much of the recent uptake in posthumanist research. Flourishing, or living well, in this world is possible, Haraway argued, but “only in multispecies alliances, across the killing divisions of nature, culture, and technology and of organism, language, and machine” (Haraway 2016, pp. 117–118). Ulmer (2017), in her article on posthuman research, explained that “posthumanism rejects that humans are the only species capable of producing knowledge and instead creates openings for other forms/things/objects/beings/phenomenon to know” (p. 834).

Posthumanist theory has been applied by many researchers in the field of early childhood for sustainability/early childhood environmental education in recent decades. As Malone et al. (2022) noted,

Theories of posthuman childhoods view the child as always part of an entangled, hybrid assemblage, being-with and a part of all living things. That is, the child as an entity is not separated from fluid categories of humans, animals, earthlings, energy, atoms and so forth. It is simultaneously both social and scientific, and it is all things constantly responding to and being in relation to each other. (p. 246)

Many have suggested that children, and others live in “common worlds,” inspired by the work of Bruno Latour (2007), who coined the term “common world” when arguing that the social sciences and the natural sciences are not distinct domains and cannot be studied separately. Describing the social as “a very peculiar movement of re-association and reassembling” (p. 7), he argued that while the social sciences have been focussed on humanity, no science of the social can be carried out without first examining the “question of who and what participates in the action . . . , even though it might mean letting elements in which, for lack of a better term, we would call *non-humans*. (p. 72, emphasis in original).

The ideas of Haraway and Latour, among others, have greatly influenced the development of the common worlds research framework, which acknowledges the messy, entangled and culturally and historically situated relationships among humans and nonhuman others (Taylor, 2013). Attending to the shared worlds of humans, forces, objects, places and histories opens up new paths towards understanding lived experiences through a relational and ethical lens. In this way,

researchers can attempt to move beyond exclusively human-based interests, instead assuming humans are entangled in complex ways with the being and becoming of other species (Elliott, 2019; Nelson, Pacini-Ketchabaw & Nxumalo 2018). The common worlds view of childhood is as a “situated, collective, and relational rather than as a universal developmental life stage that is experienced individually” (Nelson et al., 2018, p. 8). In the last few years, there has been a marked increase in publications using a common worlds framework (e.g., Blaise & Hamm, 2019; Hodgins, 2019; Taylor, 2017). The Common Worlds Research Collective (<http://commonworlds.net/>) includes researchers from around the world (including myself) conducting this type of research, many of whom engage with Indigenous philosophies, stories, and worldviews.

New materialism overlaps with posthumanism in its rejection of anthropocentrism. Although there are various branches of new materialist theories, they all “embrace the vitality of matter” (Sanzo, 2018, para. 8). New materialism can “generate new ways of thinking and being where the world becomes present in all of its vibrant vitality rather than reduced to the dull and abstract forms of universal generalisations more typical of Western knowledge theorising” (Somerville, 2020, p. 114). As such, researchers can recognise objects not as mere background or simple props but as prominent agents operating within a relational encounter. Karen Barad (2007, 2008) has been foundational to new materialist research, guiding others to consider what it means to think beyond the human. They suggested that matter is not merely a substance but is constantly intra-acting, shifting, becoming and thus an ongoing materialisation. In this sense, nature is not a background for human endeavours, but is an active force unto itself. As Rosiek, Snyder, and Pratt (2020) noted however, posthumanist theory was not discovered by contemporary Western researchers and philosophers; “Indigenous thinkers and scholars developed ideas about non-human agency thousands of years earlier” (p. 332) and this is often overlooked in the literature. Many researchers in the field of early childhood education have started to apply new materialist ideas to their work (e.g., Hackett & Somerville, 2017; Harwood & Collier, 2017; Merewether, 2019; Pacini-Ketchabaw, Kind & Kocher 2017; Weldemariam, 2020), and many work across posthumanism, new materialism, common worlds and Indigenous thinking (Ulmer, 2017).

## Decentring the human?

While posthuman thinking is not a specific methodology or set of methods of inquiry (Jukes, 2021; Ulmer, 2017), decentring the human, or deanthropomorphising the research is one central concept often touted in order to counter the dominant view of human exceptionalism. Shifting the focus of research and trying new ways to study the world in a multispecies approach can offer new forms of knowledge (Born, 2019; Ogden, Hall & Tanita 2013). Within Western thought, primarily guided by Cartesian systems of dualisms, knowledge is seen to be an objective truth that can be acquired by the knower (Riley, 2023) and is decontextualised (Simpson, 2014). This sets up “social hierarchies in which certain knowledges are considered valid, and only appropriate for, and accessible to, particular learners” (Riley, 2023, p. 49), which can be highly problematic (Jukes, 2021). Alternatively, knowledge can be seen as being a co-creation, a lived experience in relation to others. Some forms of knowledge, such as Indigenous stories, are recognised as being living agents even if/when no human exists to tell them (Rosiek et al., 2020). As Simpson (2014) wrote, meaning can be derived through “a compassionate web of interdependent relationships that are different and valuable because of that difference (p. 11). Further, Simpson (2014) reminded us that “intellectual knowledge is not enough on its own. Neither is spiritual knowledge or emotional knowledge. All kinds of knowledge are important and necessary in a communal and emergent balance” (Simpson, 2014, p. 16).

This is particularly challenging in a traditionally humanist fields like education (Russell, 2005; Taylor & Pacini-Ketchabaw, 2015), where there is a long history of attention to human development. This decentring of children (and humans generally) can be potentially

uncomfortable and challenging for researchers (Pacini-Ketchabaw et al., 2016). Additionally, while there are inherent issues in trying to move beyond the human experience, doing so then begs the question of what to then focus on? Russell (2005) asked who “draws our attention and is worthy of representation” (p. 436) in posthumanist environmental education and who we might include in our research. Affifi (2020) recognised that we inevitably anthropocentrically select what to focus on and it may not be possible to completely remove the humanity from research, therefore it may be more fruitful to think of a fluid binary of anthropocentrism and how various approaches to deanthropocentrism such as multicentrism, may be useful. Figuring out where to “let go of the human frame, and to what extent we need to hold onto it” (Affifi, 2020, p. 1437) may be one of the challenges of posthuman research.

Further, posthumanism inherently problematises the defined distinctions between and among species (Ulmer, 2017). After all, being human is being host to a colony of microorganisms (Hird, 2010; Ogden et al., 2013). Where does a human researcher or study participant’s body end and nature/another species/the nonhuman begin? Living organisms co-create and live with each other (Smart & Smart, 2017). Hird reminds us that “any given human/animal body is a symbiont: 600 species of bacteria in our mouths and 400 species of bacteria in our guts, and the countless more bacteria that inhabit our orifices and skin” (p. 37). If we decentre our humanity, should we then assign a centre to each of these other living creatures, some of them within us? Or are we suggesting the lack of focus on any beings? These questions highlight the complexity of this practice and the importance of nuanced explanations of research practices.

### Language and terminology

Language matters yet is tricky to contend with when trying to communicate posthuman and post-anthropocentric concepts through words and sentences, which are inherently human creations. As I sit and use my human brain to think and my human hands to type on a human-made computer through the English language (acknowledging there the multitude of other amazing languages that humans have developed throughout the world), I wonder: What role does language play in the enactment of posthuman theories and research? First one must critically examine words that are typically associated with conventional research methodologies (e.g., qualitative, quantitative), words like “data collection,” “reflection,” “analysis,” “research methods,” and even “research question.” These terms allude to human thinking, and to the conventions of research that have emerged from a positivist paradigm that positioned the research process as a systematic way to come to know the world by testing hypotheses or posing questions and then answering them in an organised and rational process. A whole range of terms can be found in the literature within the common worlds, posthumanist, multispecies realm, highlighting the tensions and challenges of this work, and the extent to which researchers are comfortable moving away from convention.

One phrase that has been adopted by many posthuman researchers is *thinking with*, which acknowledges that thought can be relational and involve others including other types of living beings (Jukes, 2021; Rowan, 2015). In some writing these are labeled “nonhumans” but, as Young (2024) noted, the term “nonhuman” automatically others and sets apart humans as being the norm, positioning animals as secondary to humans, thus the term “more-than-human” has emerged. This term helps place the emphasis on relationality and co-constitution (Merewether, Gobby & Blaise 2022). In terms of discussing what researchers use to *think with*, Jukes (2023) proposes the use of *empirical materials* instead of the word *data*, describing the former as follows:

Empirical materials are something created through practice and are used to think with and work through, rather than data that holds a fixed truth. Empirical materials can look beyond conventional humanist data (such as interviews) and, as such, move beyond an anthropocentric focus. (p. 253)

Ulmer (2017) also offered a methodological vocabulary list that can she suggested can be helpful for researchers wanting to *think differently*.

In this paper, I have been intentional in my use of words that are typically associated with humanist approaches to research, without completely avoiding them to help situate similarities and differences. For fellow researchers eager to carry out posthuman and/or post-qualitative for the first time, I believe it can be very helpful to see where familiar terminology and concepts can be applied, and what terms are important to shift. However, as Jukes (2021) aptly wrote, we, as humans and researchers, cannot exist without our humanness. We must strive to “challenge some forms of anthropocentrism while inevitably slipping into other forms” (p. 92).

### Looking to the literature for methodological insight

In the early stages of planning my own doctoral research, I grappled with the planning of my study. My intended focus was on empathy, especially concepts such as entangled empathy (Gruen, 2015), which suggested possibilities for looking beyond a human developmental perspective. As the research context was going to be forest school program held in a park, I needed research methods that worked in an outdoor context, that worked with children on the move, that could potentially capture multisensory and affective aspects of child-nature relations, and finally that might somehow capture nonhuman voices as well. I found limited published information on *how* other researchers had conducted their posthumanist or common worlds research. Books such as *Feminist Research for 21<sup>st</sup> Century Childhoods: Common Worlds Methods* (Hodgins, 2019) and *Posthuman Research Practices in Education* (Taylor & Hughes, 2016) did not provide me with enough details on how to plan and carry out, in practical terms, such a study with children in an outdoor context. It became apparent that many researchers applied posthumanist thinking to data that had already been collected during previous studies (e.g., Ånggård, 2016, Harwood, Barratt & Collier 2019; Pacini-Ketchabaw et al., 2016) and that much of the literature was very theoretic in nature. Understanding that posthuman thinking “is not a specific set of protocols, but a divergent array of ideas for investigating specific situated contexts” (Jukes, 2021, p. 91), examples of how some researchers have carried out their common worlds and/or posthumanist studies is useful, and indeed, a few have described their process in practical terms.

Powell and Somerville (2018), for example, described their “deep hanging out” methodology and use of iPhones to collect photo and video data in an outdoor study with young children. Photos were taken to capture moments, and video recordings (10 s to 2 minutes in length). They also used the iPhone to jot down notes, which were later written out in “comprehensive fieldnotes, providing a more detailed and descriptive narrative of what happened, both in an observational sense and in terms of things we, the researchers, experienced, felt, understood, were confounded by, thought and wondered” (p. 851). The researchers explored a segment of video showing a group of children drumming to “think different about literacy and sustainability through an ontology of sound” (p. 858).

Merewether et al. (2022) applied a walking methodology, whereby walking was not simply the bodily practice but was a “scholarly research practice which mobilises embodied and affective ways of thinking with nonhuman others” (p. 206). The researchers applied a way to listen “in multiple registers” (Rose, 2013, p. 107, as cited in Merewether et al., 2022), specifically attuning to sense of sound and smell as a way to cultivate attentiveness and notice others. Theirs was deliberately an “exploratory study not bound by a pre-planned research plan” (p. 208), though they did describe visiting a site regularly and taking field notes and photographs while out walking with a group of children.

Malone et al. (2020) suggested that turning to philosophy to unpack children’s relations to other beings, materials, forces and elements is helpful and described using philosophy in itself as a methodology, as it can provide an alternative to the traditional structure of collecting data,

analysing it and evaluating findings. This approach of inquiry “for researching children and childhoods pushes us to think to a deeper and more inventive level, ontologically and methodologically” (p. 217).

Some researchers have recently developed an approach termed a *collaboratory*. Nelson and Drew (2024) present collaboratories as sites of collective thinking and experimentation that particularly focus on children’s more-than-human relations, offering “possibilities for reorienting understandings of our connections with plants, animals, fungi and other non-human creatures we share place with” (p. 166). In their study, Nelson and Drew (2024) employed arts-based methods such as drawing and photography, as well as walking as part of their field work. They discuss using a relational approach and thinking that moves beyond seeing creatures and natural items as static objects. Specifically,

In both sites, researchers, pedagogists, educators, and children created and collected data through a variety of means including digital camera stills (photography), GoPro and video footage, 3D video forest recordings, taking field notes, drawing (both in classroom and on the land), and creating a forest “kriya.” (p. 169)

In their work, walking the forests and surrounding areas were an important aspect of the research.

In terms of data analysis, or generating knowledge through these methods of inquiry, many have applied the concept of *diffraction*. Murris (2016) described diffraction, a term borrowed from physics, as a wave-like motion: “like two waves rolling closely together to the shore adding to each other’s force and creating new patterns — a ‘superposition’ — in which the old is still ‘present,’ but has become entangled in new formations” (p. 30). Murris included “diffractive pauses” in her own work as transitional spaces woven into her chapters. She writes that she used no particular formula in creating these pauses, rather the idea was to diffract each story or photograph and, in the process, create something new.

Such an approach is more emergent and unpredictable, producing different thoughts, wonderings and questions (Mazzei, 2013). As Riley (2023) noted, “diffraction does not refer to reflection, which results in the mirror of same-ness. Rather, metaphorically, diffraction can be used to think about differences that matter in attending to a variety of agents in their crisscrossing relations to each other” (p. 51). This can be generative of thought and can produce something new that does not need to be analysed for meaning but instead is helpful for shifting attention (Pacini-Ketchabaw et al., 2017).

### Research context: Exploring empathy with more-than-human others

The study setting for my doctoral research, which has led me to the methodological insight that will follow, was an urban park in Alberta, Canada, where a forest school program was taking place, providing a group of young children and educators multispecies encounters outdoors with dogs, birds, squirrels, trees and a plethora of other beings and objects. I aimed to examine the affective, embodied and empathetic aspect of children’s participation in a forest school program in Canada (see Boileau, 2022, for a full account of this study). I sought to better understand child-nature relations and to put into practice the concept of decentring the human during research (Pacini-Ketchabaw et al., 2016) and attune to the multispecies relations and shared common worlds of beings, objects and weather that formed an assemblage.

The children met their educator once per week for a half day program on Fridays and spent the entire time outside in the public park, following a forest school approach — an educational approach grounded in play and child-led learning, immersed in nature and connected to the socio-cultural aspects of a place. The research participants in the study included six children aged



three to six years, two educators and a myriad of other participants, namely dogs, trees, squirrels, sticks, grass, snow, GoPro cameras, birds and the play and learning materials brought to the site.

I was inspired by a multispecies ethnographic approach, which provided a way to attend to human relations and interactions with animals, plants and other life forms (Aisher & Damodaran, 2016). As Young (2024) noted, scholarship in multispecies approaches is promising, yet remains “steeped in the terminology and practices of humancentric discourse that maintains hierarchical relations” (p. 15). I argue that this is not inherently bad and that being mindful of when anthropocentrism is taking over is key; a researcher’s humanity can never be completely erased.

The program and my research took place in a city park on Treaty 7 territory which is the traditional land of the Blackfoot confederacy, the Tsuut’ina, the Stoney Nakoda Nations and the Metis Nation, Region 3. Indigenous Ways of Knowing are valuable in offering an alternative understanding of human-nature relations that have often been presented through a Western approach. Although I am not Indigenous and did not utilise an Indigenous research methodology for my study, I was inspired by such Indigenous scholarship and human-Land relationships. As my research took place outdoors and out on the Land, I sought to respectfully learn of the Indigenous history and culture, which Calderon (2014) wrote is essential in order to relearn about the place we live. Though they cannot be lumped together as one perspective, Indigenous worldviews do have commonalities, such as an understanding that plants, animals and landscapes are seen as kin and relations (Salmón, 2000). Land is seen as holding stories and knowledge that convey ethics and lessons for living (Simpson, 2014). Further, all life forms of creation possess consciousness (Bastien, 2004). Within the Indigenous paradigm, an individual’s “existence is ultimately dependent upon intimate relationships of reciprocity, humility, honesty and respect with all elements of creation, including plants and animals” (Simpson, 2014, p. 9–10).

With an intention to be respectful and attend specifically to local Indigenous cultures and Ways of Knowing (though admittedly, not all local cultures were explored within the context of my study), I consulted the writings of local Blackfoot author Betty Bastien (2004) who wrote of the Ways of Knowing of the Blackfoot people, who are signatories of Treaty 7 and have lived on the Land where I conducted my study for thousands of years. Bastien wrote that the “*Siksikaitstapi* [all Blackfoot speaking tribes] are dependent upon all creation for survival. Learning how life is interdependent is therefore a preeminent objective in the educational process” (p. 95). In Blackfoot culture, knowledge, science and religion are integrated. I agree with Harwood et al. (2020), who suggest that “Indigenous peoples and knowledge systems offer powerful counter-narratives to human–nature divides, human exceptionalism and colonial hegemonic discourses that currently influence early childhood education for sustainability research and practices” (p. 25).

### Posthuman practicalities of three research methods

As noted previously, in some posthuman-grounded research, there is no formal plan before embarking on a research project, or research inspired by posthumanist theory may be enacted in non-representational ways. However, I wonder whether having a set plan and objective is necessarily in contrast with the generation of this type of knowledge. Surely, a relational approach to research and inclusion of more-than-human other beings may also be done with a more structured approach to research? Researchers are humans with jobs, responsibilities, timelines and deadlines, who must often get their research plans read and approved by others who may be less familiar with unconventional methodologies. Routine and plans are realistically necessary for some researchers to carry out their ideas. I offer the following discussion of three of the ways in which I collected data to *think with* as part of my doctoral research (Boileau, 2022) with the hope that it can be helpful for those navigating a similar research space and grappling with the planning of a project. The methods I present were helpful in experimenting with the notion of decentering the human and enacting posthuman inquiry.

### ***Resisting a human focus with physical distance: Nonparticipant observation***

Participant observation is typically considered the core activity in ethnographic research (Emerson et al., 2001; Greig et al., 2007) and, in the early childhood context, is “one way for researchers to immerse themselves in young children’s worlds” (Clark, 2011, p. 312). In traditional qualitative approaches, a researcher can be involved as an observer to various degrees: as a complete participant, a participant as observer, a non-participant/observer as participant, or complete observer (Creswell, 2013). A researcher will record what they are seeing with the intent of drawing meaning through analysis. What can such a human-centered research method offer to a posthumanist thinker and where might tensions arise?

Several accounts of posthumanist research draw on some type of shared lived experience that the researcher had with a group of others — what would typically be thought of as research participants. Presumably therefore the researcher is using all their senses to notice what is occurring and is possibly recording these somehow for future reference. Though participant observation is associated with qualitative research, in practicality this is also taking place in many research contexts labelling themselves as posthumanist/post-qualitative. Perhaps it is the reconceptualising of this observation experience that posthuman thinking can bring. For example, there is a marked difference between intently watching a child play and describing this play event in a notebook based on behaviours, words spoken and body movements, where the child is seen as an object of study, compared to simultaneously listening to the sounds of other animals, wondering about the entanglements — the space between — the child and the other beings and objects in ongoing intra-actions and writing these in a non-structured way to help the researcher remember the moment at a later time. As Riley (2023) noted, the former approach stems from a dominant narrative in education whereby learning can be understood through standards and benchmarks. The latter can allow for a diffractive exploration, a “collaborative endeavour set in co-implicated entanglements” (p. 51), where we “are at the same time a little bit more and a little bit less . . . all immersed in moment-to-moment unfoldings with the world enacted from our own (micro) politics of location” (p. 52).

In my doctoral research, I opted for a practice of non-participant observation where I kept a physical distance from children enrolled in an outdoor program, though I grappled with the discomfort of wanting to be involved in children’s play and the challenge of wanting to decentre the children from my study. Fellow educator-researchers will likely understand the draw towards wanting to be engaged with children and the difficulty of not doing so. Early childhood education, after all, is a field that is solely focused on children and where educators are trained to hone in on children’s needs, interests and behaviours (Pacini-Ketchabaw et al., 2016). While observing the group, I jotted down notes using a notebook with all-weather paper, and an all-weather pen to ensure I could write even if it was raining or snowing and that my notes would remain intact if they got wet. Writing notes down in front of participants can seem intrusive and can sometimes disrupt children’s normal behaviours, drawing their attention away from their activities; however, with me being at a distance, my note-taking did not appear to disturb the children, which could be a benefit. Following each day, I transcribed my hand-written jottings into more formal notes (Yin, 2018), adding any additional detail while it was fresh in my mind. I found the physical distance to be a powerful way to attempt a re-training of my observation focus as I attempted to avoid falling into a narrow humanist view of only focussing on the children from a developmental perspective.

### ***“Sit spots” as a way to observe and listen attentively to more-than-human beings***

Many studies involving young children, even those that try to resist a humanist pull, include time spent with a group of collaborating children, for example, going on weekly outdoor walks or spending time at a child care centre in a manner similar to traditional ethnographic research.



In my research, in addition to joining the children during their forest school program through nonparticipant observation, I also wanted to immerse myself in the park environment without feeling the distraction of the children's play and the educators' games and activities. This was admittedly less straightforward. Through reading *What the Robin Knows* by Young and Gardoqui (2013), I was inspired to experiment with a "sit spot" method of engaging with more-than-human worlds. The authors describe this practice as being key to becoming more attuned to the natural environment by spending time sitting in one place for at least 40 minutes and frequently returning to the same location, note-taking to keep track of common and uncommon occurrences. This method is often used within environmental education programs but had not to my knowledge been applied per se as a research method.

A critique could be made that Young's discussion of understanding bird culture and bird language is very anthropomorphic, but in shifting from seeing birds as things to be watched and studied, towards developing an intimate understanding of birds as vibrant, entangled, agential beings, a researcher can enact research differently and attend to the ways through which birds' lives are interwoven with human lives, and indeed what this relationship implies in terms of a relational ethic of care. Young and Gardoqui (2013) wrote that when we are in this alert form of observation during a sit spot, "we have diffuse awareness, curiosity, perceptions and questions (p. xviii), which, I argue any researcher would aim for.

In practical terms, I selected this as a method to engage and include more-than-human beings as much as possible. I picked sit spots in and around the regular locations used by the forest school program and immersed myself in the regular happenings at the park when the forest school group was not present. I usually stayed in my spot for around 30-40 minutes (some days were fairly cold therefore I adjusted, and occasionally felt I needed to walk to keep warm). Following a change in the university's Research Ethics Board protocol due to the COVID-19 pandemic, I was unable to continue joining the forest school class each week, however, I still spent time at the park those days, in a different location to maintain some sense of connection with the group, which connected me viscerally to our common world even though they were out of sight and earshot. Experiencing and living with the same weather and forces as the research participants, especially in the context of an outdoor study such as mine, was very helpful. As Bartnæs and Myrstad (2022) note:

We have waded in the same snow, felt the cold on our bodies and the warmth from the bonfire and were exposed to wind and weather in the same way as the children. This presence was the basis on which we shared experiences and engagement with the children (p. 82)

I wrote notes, and similarly to the note-taking I did on days with the children, I revisited these jottings later and wrote them out more fully. I also added research on specific species, weather and other relevant topics that picked my curiosity, which I compiled in a separate digital document.

Reading about birds and sit spots as an intimate way to connect with more-than-human worlds motivated me to spend time better understanding the birds and other animals at the park when the group of children were not there; doing so helped me shift my focus to more-than-human worlds. For example, I often left a day of forest school observations thinking about what the children said or did, and wondering how that related to empathy, sustainability and connections with more-than-human worlds. When I went back to the park the next day or a few days later and sat down to observe and listen, my attention turned to listening to birds, watching people run or walk by, sometimes with dogs, and I often focused on experiencing with all my senses. I remained open and attuned to my surroundings.

This approach is reminiscent of Merewether et al.'s (2022) writing on expanded listening, which "includes noticing how sound is experienced not only by humans but also by nonhuman bodies and matter" (p. 207). Jukes (2021) also argued that observing just one aspect of the environment (for example, the children) narrows the knowledge that may be generated, but that

cultivating attentiveness “by observing multiple layers (perspectives/lives) while participating within an environment promotes an understanding of the relations” (p. 93). “Sit spots” offer a tangible approach to this type of observation.

### ***Thinking with video footage from wearable cameras***

The third method, or approach, discussed here is the use of wearable cameras — in my study, GoPro cameras. These are small, lightweight, waterproof cameras that can be mounted or worn in various ways for action filming. They have recently been used in several studies with young children (e.g., Burbank, McGregor & Wild 2018; Harwood et al., 2019; Hov & Neegaard, 2020; Lloyd, Gray & Truong 2018) due to their ability to show a child’s perspective. This may, at first glance seem like a very human-centric method, however, as Harwood and Collier (2019) note, watching GoPro footage captured by children allows the researcher to attend to the assemblage of materials and objects since the child’s body does not figure in the video, other than maybe a hand or leg, so the viewer’s gaze is drawn to other sights and sounds. They suggest, then, that this type of data allows “viewers to gain insight into experiences and also highlights, visually, aspects such as speed, movement, framing, sound and the material elements captured by the wearer” (p. 54). In this way, the use of GoPro cameras can facilitate a disruption of the typical anthropocentric lens in research.

Echoing what other researchers have done, in my study the children got to decide when they would like to wear the chest-mounted camera and were able to turn it on and off on their own. Children were asked at the beginning of each Friday class if they would like to wear a camera that day. Therefore, the choice of what to film was completely entrusted to the child, “therefore reducing the unequal power relations that are so often present in traditional video research” (Burbank et al., 2018, p. 323). I had two cameras on chest-harnesses available, and these were both used weekly over the nine-week period of the fieldwork. In total, 14 hours of GoPro footage was taken by the children. In the spirit of reciprocity and gratitude, a video montage was made and shared back to the forest school families for them to view.

My experience with using GoPros confirms the benefits that other researchers have touted, such as: the researcher can see what the child sees, the camera is unobtrusive, it captures interactions that traditional methods cannot, it puts size into perspective (Green, 2016), and the children find the cameras comfortable to wear (Burbank et al., 2018; Lloyd et al., 2018). Due to the limited battery life of the camera, the Digipower Re-Fuel Action Pack 9 hour extended battery was very useful given the length of time the children would wear the camera. This did make the cameras considerably bulkier and heavier, so for the last days of the study, I decided to go back to the original camera without the battery pack (even though they would not have enough power to film the entire forest school session) to make it more comfortable for the children. In my study, two of the children seemed the most interested in wearing the cameras and not unexpectedly, they became the most adept with them, taking the most control over how they used them cameras.

The GoPros also ended up being part of this group of children’s forest school experience during my study. As Harwood et al. (2019) write, the “GoPro camera . . . is agentic and more than the passive backdrop to the children’s stories” (p. 57). Similarly, in research by Pacini-Ketchabaw et al. (2017), photography was seen as a “process of collaborating and moving *with* the world” (p. 13, emphasis in original). Indeed, although the cameras were largely unobtrusive after the children put them on, on some occasions the cameras were intentionally included as part of play, which I had not foreseen would be the case.

Finally, watching the video footage was very insightful. As Änggård (2016) discussed regarding applying posthumanist thinking to video footage of children’s play, “the observations make it possible to study in detail how children’s bodies and all kinds of matter as well as discursive practices are entangled in the phenomena constituted by play activities” (p. 82). It also was often destabilising when the children were running and moving around. In these moments, I as the

viewer could not see the child filming but was watching the world twirl and fly by, sometimes hearing the child out of breath when they stopped, or playfully engage with another child, sometimes getting an unusual closeup of a hand, tree bark or the inside of a lunch box during snack time. As Caton and Hackett (2019) note, this perspective “dislodges the spectator from their adult-centric viewpoint of the world” (p. 369). I watched and re-watched, sometimes intentionally paying attention to other beings and materials such as grass, snow, birds and dogs to shift my perspective — a technique I would recommend to other researchers conducting common worlds research using GoPro cameras.

### Navigating posthuman research creation

Posthumanist research has “radically shifted what is possible in research methodology” (Ulmer, 2017, p. 832), since it is not a new methodology that neatly fits into a traditional paradigm, but an array of possibilities that are in line with relational thinking. How to incorporate and adequately represent (if one is choosing representational approaches) more-than-human worlds in research endeavours through our own humanity is an obvious conundrum. Indeed, Merewether et al. (2022) noted that, “even with the best of intentions, the challenge is finding ways to think with others that cannot talk to us” (p. 206). In the field of early childhood education, though, this is not a new problem since educators regularly work with pre-verbal young children. Thus, it is not surprising that it is in this field that much progress has been made in regard to thinking beyond the human (Merewether et al., 2022).

The three research methods described and discussed here provide some practical examples of what tools a researcher may use to collect data, or to document occurrences and experiences for a posthumanist, common worlds study. In the context of my research, non-participant observation was a useful way of intentionally casting my thoughts and attention wider than just the children’s play, perhaps an example of “applying multispecies awareness to educational observation,” as proposed by Born (2024, p. 97). This allowed me to play with the concept of decentring the humans/children from the study and to broaden my observations, including listening and feeling, to the entirety of the assemblage of beings, materials, histories, etc.

Observing the natural environment at the study setting through the practice of sit spots between the days where I accompanied the children was also very useful. This allowed for a layered approach to my thinking and for more-than-human beings and things to weave in and out of the research. For example, one day I observed Black-billed Magpies at the main meeting place for the forest school, a clearing between a stand of Balsam Poplar and other trees. I wondered if these cunning birds had learned to scavenging the area once the children had left, looking for leftover snacks. Such multispecies entanglements were highlighted by my attending to the place without any children present. While a human can never directly know about the subjective world of another human, let alone another being, we can use our imagination, aided by observations of other beings’ behaviours and activities to at least attempt to be inclusive of these other lived experiences of the world (Schroer, 2021).

Seeing the outward perspective of the children through the use of wearable cameras also helped me *think with* and to *think differently* (Ulmer, 2017). While watching the video footage, the researcher’s eye is not drawn to the child’s body movements, voice and facial expressions, but rather to the adjacent plants, animals and materials when they are playing outside. The video can be viewed several times, allowing a researcher to choose a nonhuman aspect of interest to focus on while watching. In the case of my study, for example, I watched footage taken on snowy days several times and, applying a new materialist lens, asked myself “What is snow doing? How is it being moved? How is it affecting and intra-acting with other bodies and materials?” The close-up and intimate view of snow moving around on mittens, falling from the sky and sticking to snowpants and jackets was eye-opening. I was able to truly view snow as an inherently pedagogical

agent that was able to teach children directly, without needing an adult to explain lessons about snow textures, shapes and temperatures (Rowan, 2015).

The practical research approaches described within this article show promise for conducting research that attends to the common worlds of children and that moves away from only examining what the children are learning and doing outdoors in an educational program. For those of us that have been entrenched in the field of early childhood education, it requires dedication and intentionality to switch from humanist to posthumanist thinking. Yet posthumanism is an approach that may be particularly useful within the field of early childhood education for sustainability (Somerville & Williams, 2015; Weldemarian, 2017).

The importance and urgency of accepting new ways of producing knowledge of engaging with Indigenous scholarship that offers important guidance in times of environmental crises cannot be understated. As we live through the remaining few years that remain before human lifestyles and values in the Western world lead to changes in earth's climate and ecosystems to the point of no return and to the detriment of many beings, we surely have a duty to critically re-assess our relationships, seek insight where it may be uncomfortable and ethically think with things (Jukes, 2023). Doing research differently may not be the one solution but it could be one possible path forward that speaks to a paradigm shift in how humans live and share this world.

## Conclusion

In this article, I have shared insights from my journey as a doctoral student attempting to conduct a posthumanist, common worlds study with young children in an outdoor environment. It should be noted that the research methods that I selected for my study context may not be appropriate or desirable for other projects. However, it is my hope that they will contribute to the growing conversation on how to do research differently. This is necessary if we wish to sustain co-flourishing (Haraway, 2008) of humans and our relations in our common worlds. I agree with a group of authors, who have called themselves the Crex Crex Collective, who write in *Wild Pedagogies* that we “still have a long way to go in terms of listening to and understanding the voices and research agendas of more-than-human others, and in representing the results in genuine, just, and nuanced ways” (The Crex Crex Collective & Blenkinsop, 2018, p. 127). However, it is a worthy and meaningful endeavour that may help us, as a society, move towards an important paradigm shift necessary to avoid worsening environmental crises.

Lastly, Affifi (2020) urges researchers to think about a set of important questions relating to the concept of deanthropocentrism, which I believe can be applied more broadly to posthuman, common worlds and multispecies research: what does this type of research actually do?

Does it actually lead us to attend to the field of more-than-human presences around us? Does it invite us to relate to the birch trees and magpies around us, and to recreate our environments to enable such relationships? Does it actually compel us to stand in front of the bulldozers? Does it create beauty? Or, ... does it instead merely invite us into more arguments, more time in front of computers, and more wandering around stuffy conference rooms? (p. 1447)

It is my hope that, alongside navigating the complexities of relational research, researchers also aim for balance and respectful approaches in daily their life. In Anishinaabemowin, this is called *Mino-bimaadiziwin*, or the good of life. This balance with the world around us helps all of us flourish.

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## References

- Affifi, R. (2020). Anthropocentrism's fluid binary. *Environmental Education Research*, 26(9–10), 1435–1452. DOI: [10.1080/13504622.2019.1707484](https://doi.org/10.1080/13504622.2019.1707484).
- Aisher, A., & Damodaran, V. (2016). Introduction: Human-nature interactions through a multispecies lens. *Conservation and Society*, 14(4), 293–304. DOI: [10.4103/0972-4923.197612](https://doi.org/10.4103/0972-4923.197612).
- Änggård, E. (2016). How matter comes to matter in children's nature play: Posthumanist approaches and children's geographies. *Children's Geographies*, 14(1), 77–90. DOI: [10.1080/14733285.2015.1004523](https://doi.org/10.1080/14733285.2015.1004523).
- Barad, K. (2008). Posthuman performativity: Toward an understanding of how matter comes to matter. In *Material feminisms* (pp. 120–156). Indiana University Press.
- Barad, K.M. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.
- Bastien, B. (2004). *Blackfoot ways of knowing: The worldview of the siksikaitsitapi*. University of Calgary Press.
- Blaise, M., & Hamm, C. (2019). Shimmering: Animating multispecies relations with Wurundjeri Country. In *Feminist research for 21st-century childhoods: Common worlds methods* (pp. 93–100). Bloomsbury Academic.
- Boileau, E.Y.S. (2022). *Relating and learning with other beings, materials, and weather: Multispecies assemblages at a Canadian forest school*. [Doctoral Thesis, Lakehead University]. <https://knowledgecommons.lakeheadu.ca/handle/2453/5083>.
- Born, P. (2019). Common worlds: Multispecies engagements at a nature-based preschool. [Doctoral Thesis, Hamline University].
- Born, P. (2024). Taking the long view: Applying a multispecies awareness to educational observation. In P. Born (Eds.), *Multispecies thinking in the classroom and beyond* (pp. 97–116). Lexington Books.
- Burbank, B., McGregor, D., & Wild, M. (2018). "My special, my special thing, and my camera!" Using GoPro as a complementary research tool investigating young children's museum experiences. *Museum & Society*, 16(3), 311–333.
- Calderon, D. (2014). Speaking back to Manifest Destinies: A land education-based approach to critical curriculum inquiry. *Environmental Education Research*, 20(1), 24–36.
- Caton, L., & Hackett, A. (2019). Head mounted, chest mounted, tripod or roaming? In N. Kucirkova, J. Rowsell & G. Falloon (Eds.), *The Routledge international handbook of learning with technology in early childhood* (pp. 362–376). Routledge.
- Clark, A. (2011). Multimodal map making with young children: Exploring ethnographic and participatory methods. *Qualitative Research*, 11(3), 311–330. DOI: [10.1177/1468794111400532](https://doi.org/10.1177/1468794111400532).
- Collective, T. C. C., & Blenkinsop, S. (2018). Afterwords. In B. Jickling, S. Blenkinsop, N. Timmerman & M. De Danann Sitka-Sage (Eds.), *Wild pedagogies* (pp. 109–131). Springer International Publishing. DOI: [10.1007/978-3-319-90176-3\\_6](https://doi.org/10.1007/978-3-319-90176-3_6).
- Common Worlds Research Collective. (2020). Learning to become with the world: Education for future survival [Paper commissioned for the UNESCO Futures of Education report]. <https://unesdoc.unesco.org/ark:/48223/pf0000374032>.
- Creswell, J.W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. Sage.
- Elliott, S. (2019). Aligning Bronfenbrenner's model with UNESCO's dimensions of sustainability. *Every Child*, 25(1), 24–25.
- Emerson, R.M., Fretz, R.I., & Shaw, L.L. (2001). Participant observation and fieldnotes. In P. Atkinson, A. Coffey, S. Delamont, J. Lofland & L. Lofland (Eds.), *Handbook of ethnography* (pp. 352–368). Sage.
- Green, C. (2016). Sensory tours as a method for engaging children as active researchers: Exploring the use of wearable cameras in early childhood research. *International Journal of Early Childhood*, 48(3), 277–294. DOI: [10.1007/s13158-016-0173-1](https://doi.org/10.1007/s13158-016-0173-1).
- Greig, A., Taylorand, J., & MacKay, T. (2007). *Doing research with children*, 2nd edition, Sage.
- Gruen, L. (2015). *Entangled empathy: An alternative ethic for our relationships with animals*. Lantern Books.
- Hackett, A., & Somerville, M. (2017). Posthuman literacies: Young children moving in time, place and more-than-human worlds. *Journal of Early Childhood Literacy*, 17(3), 374–391. DOI: [10.1177/1468798417704031](https://doi.org/10.1177/1468798417704031).
- Haraway, D. (2008). *When species meet*. University of Minnesota Press.
- Haraway, D.J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.
- Harwood, D., Barratt, J., & Collier, D. (2019). Entanglements in the Forest: The orange GoPro camera and the children who wear them. *International Journal of Early Childhood Environmental Education*, 7(1), 57–72.
- Harwood, D., & Collier, D.R. (2017). The matter of the stick: Storying/(re)storying children's literacies in the forest. *Journal of Early Childhood Literacy*, 17(3), 336–352. DOI: [10.1177/1468798417712340](https://doi.org/10.1177/1468798417712340).



- Harwood, D., & Collier, D.R. (2019). "Talk into my GoPro I'm making a movie!" Using digital ethnographic methods to explore children's sociomaterial experiences in the woods. In N. Kucirkova, J. Rowsell & G. Falloon (Eds.), *The Routledge international handbook of learning with technology in early childhood* (pp. 49–61). Routledge.
- Harwood, D., Whitty, P., Green, C., & Elliot, E. (2020). Unsettling settlers' ideas of land and relearning land with Indigenous ways of knowing in ECEfS. In S. Elliott, E. Årlemalm-Hagsér & J.M. Davis (Eds.), *Researching early childhood education for sustainability: Challenging assumptions and orthodoxies* (pp. 25–37). Routledge.
- Hird, M.J. (2010). Meeting with the microcosmos. *Environment and Planning D: Society and Space*, 28(1), 36–39. DOI: [10.1068/d2706wsc](https://doi.org/10.1068/d2706wsc).
- Hodgins, B.D. (Ed.). (2019). *Feminist research for 21st-century childhoods: Common worlds methods*. Bloomsbury Academic.
- Hov, A.M., & Neegaard, H. (2020). The potential of chest mounted action cameras in early childhood education research. *Nordic Studies in Science Education*, 16(1), 4–17. DOI: [10.5617/nordina.7049](https://doi.org/10.5617/nordina.7049).
- Jukes, S. (2021). Thinking with a landscape: The Australian Alps, horses and pedagogical considerations. *Australian Journal of Environmental Education*, 37(2), 89–107. DOI: [10.1017/ae.2020.26](https://doi.org/10.1017/ae.2020.26).
- Jukes, S. (2023). Emergent environmental education inquiry: A methodology of thinking with things. In P. White, R. Tytler, J. Ferguson, & J. Cripps Clark (Eds.), *Contemporary Approaches to Research in Mathematics, Science, Health & Environmental Education* (Vol. 4, pp. 249–266). Cambridge Scholars Publishing.
- Latour, B. (2007). *Reassembling the social: An introduction to Actor-Network-Theory*. Oxford University Press.
- Lloyd, A., Gray, T., & Truong, S. (2018). Seeing what children see: Enhancing understanding of outdoor learning experiences through body-worn cameras. *Journal of Outdoor Recreation, Education, and Leadership*, 10(1), 52–66. DOI: [10.18666/JOREL-2018-V10-I1-8192](https://doi.org/10.18666/JOREL-2018-V10-I1-8192).
- Malone, K., Tesar, M., & Arndt, S. (2020). *Theorising posthuman childhood studies*. Springer Singapore. DOI: [10.1007/978-981-15-8175-5](https://doi.org/10.1007/978-981-15-8175-5).
- Mazzei, L.A. (2013). A voice without organs: Interviewing in posthumanist research. *International Journal of Qualitative Studies in Education: Post-Qualitative Research*, 26(6), 732–746. DOI: [10.1080/09518398.2013.788761](https://doi.org/10.1080/09518398.2013.788761).
- Merewether, J. (2019). New materialisms and children's outdoor environments: Murmurative diffractions. *Children's Geographies*, 17(1), 105–117. DOI: [10.1080/14733285.2018.1471449](https://doi.org/10.1080/14733285.2018.1471449).
- Merewether, J., Gobby, B., & Blaise, M. (2022). Common worlds justice in post-anthropocentric education: Attuning to the more-than-human through walking with sound and smell. *Equity & Excellence in Education*, 55(3), 203–216. DOI: [10.1080/10665684.2022.2131198](https://doi.org/10.1080/10665684.2022.2131198).
- Murris, K. (2016). *The posthuman child: Educational transformation through philosophy with picturebooks*. Routledge, Taylor & Francis Group.
- Nelson, N., & Drew, J. (2024). Multispecies collaboratories: Reconfiguring children's more-than-human entanglement with colonization, urban development and climate change. *Children's Geographies*, 22(1), 165–181. DOI: [10.1080/14733285.2023.2253184](https://doi.org/10.1080/14733285.2023.2253184).
- Nelson, N., Hodgins, B.D., & Danis, I. (2019). New obligations and shared vulnerabilities: Reimagining sustainability for live-able worlds. *Nordic Studies in Science Education*, 15(4), 418–432. DOI: [10.5617/nordina.6407](https://doi.org/10.5617/nordina.6407).
- Nelson, N., Pacini-Ketchabaw, V., & Nxumalo, F. (2018). Rethinking nature-based approaches in early childhood education: Common worlding practices. *Journal of Childhood Studies*, 43(1), 4–14. DOI: [10.18357/jcs.v43i1.18261](https://doi.org/10.18357/jcs.v43i1.18261).
- Nxumalo, F. (2019). *Decolonizing place in early childhood education*. Routledge.
- Ogden, L.A., Hall, B., & Tanita, K. (2013). Animals, plants, people, and things: A review of multispecies ethnography. *Environment and Society: Advances in Research*, 4(1), 5–24. DOI: [10.3167/ares.2013.040102](https://doi.org/10.3167/ares.2013.040102).
- Pacini-Ketchabaw, V., Kind, S., & Kocher, L.L.M. (2017). *Encounters with materials in early childhood education*. Routledge.
- Pacini-Ketchabaw, V., Taylor, A., & Blaise, M. (2016). Decentering the human in multispecies ethnographies. In C.A. Taylor & C. Hughes (Eds.), *Posthuman research practices in education* (pp. 149–167). Palgrave Macmillan. DOI: [10.1057/9781137453082](https://doi.org/10.1057/9781137453082).
- Powell, S., & Somerville, M. (2018). Drumming in excess and chaos: Music, literacy and sustainability in early years learning. *Journal of Early Childhood Literacy*, 20(4), 1–23. DOI: [10.1177/1468798418792603](https://doi.org/10.1177/1468798418792603).
- Riley, K. (2023). Researcher worldings: Lady/backpacker storytelling. In K. Riley (Eds.), *(Re)Storying human/earth relationships in environmental education* (pp. 37–55). Springer Nature Singapore. DOI: [10.1007/978-981-99-2587-2\\_3](https://doi.org/10.1007/978-981-99-2587-2_3).
- Rosiek, J.L., Snyder, J., & Pratt, S.L. (2020). The new materialisms and Indigenous theories of non-human agency: Making the case for respectful anti-colonial engagement. *Qualitative Inquiry*, 26(3–4), 331–346. DOI: [10.1177/1077800419830135](https://doi.org/10.1177/1077800419830135).
- Rowan, M.C. (2015). Thinking with land, water, ice, and snow: A proposal for the Inuit Nunangat Pedagogy in the Canadian Arctic. In V. Pacini-Ketchabaw & A. Taylor (Eds.), *Unsettling the colonial places and spaces of early childhood education* (pp. 198–218). Routledge.
- Russell, C.L. (2005). 'Whoever does not write is written': The role of 'nature' in post-post approaches to environmental education research. *Environmental Education Research*, 11(4), 433–443.
- Salmón, E. (2000). Kincentric ecology: Indigenous perceptions of the human-nature relationship. *Ecological Applications*, 10(5), 1327–1332. DOI: [10.2307/2641288](https://doi.org/10.2307/2641288).
- Sanzo, K. (2018). New materialism(s). *Genealogy of the Posthuman*. <https://criticalposthumanism.net/new-materialisms/>.

- Schroer, S.A.** (2021). Jakob von Uexküll: The concept of umwelt and its potentials for an anthropology beyond the human. *Ethnos*, 86(1), 132–152. DOI: [10.1080/00141844.2019.1606841](https://doi.org/10.1080/00141844.2019.1606841).
- Simpson, L.B.** (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education and Society*, 3(3), 1–25.
- Somerville, M.** (2020). Posthuman theory and practice in early years learning. In A. Cutter-Mackenzie-Knowles, K. Malone & E.B. Hacking (Eds.), *Research handbook on childhood nature* (pp. 103–128). Springer International Publishing. DOI: [10.1007/978-3-319-51949-4\\_33-1](https://doi.org/10.1007/978-3-319-51949-4_33-1).
- Somerville, M., & Williams, C.** (2015). Sustainability education in early childhood: An updated review of research in the field. *Contemporary Issues in Early Childhood*, 16(2), 102–117. DOI: [10.1177/1463949115585658](https://doi.org/10.1177/1463949115585658).
- Taylor, A.** (2013). *Reconfiguring the natures of childhood*. Routledge.
- Taylor, A.** (2017). Beyond stewardship: Common world pedagogies for the Anthropocene. *Environmental Education Research*, 23(10), 1448–1461. DOI: [10.1080/13504622.2017.1325452](https://doi.org/10.1080/13504622.2017.1325452).
- Taylor, A., & Pacini-Ketchabaw, V.** (2015). Learning with children, ants, and worms in the Anthropocene: Towards a common world pedagogy of multispecies vulnerability. *Pedagogy, Culture & Society*, 23(4), 507–529.
- Taylor, C.A., & Hughes, C. (Eds.)** (2016). *Posthuman research practices in education*. Palgrave Macmillan UK. DOI: [10.1057/9781137453082](https://doi.org/10.1057/9781137453082)
- Ulmer, J.B.** (2017). Posthumanism as research methodology: Inquiry in the Anthropocene. *International Journal of Qualitative Studies in Education*, 30(9), 832–848.
- Weldemariam, K.** (2020). Becoming-with bees': Generating affect and response-abilities with the dying bees in early childhood education. *Discourse: Studies in the Cultural Politics of Education*, 41(3), 391–406. DOI: [10.1080/01596306.2019.1607402](https://doi.org/10.1080/01596306.2019.1607402).
- Weldemariam, K.** (2017). Challenging and expanding the notion of sustainability within early childhood education: Perspectives from post-humanism and/or new materialism. In O. Franck & C. Osbeck (Eds.), *Ethical literacies and education for sustainable development: Young people, subjectivity and democratic participation* (pp. 105–126). Palgrave Macmillan.
- Yin, R.K.** (2018). *Case study research and applications: Design and methods*, 6th edition, Sage.
- Young, J., & Gardoqui, D.** (2013). *What the robin knows: How birds reveal the secrets of the natural world*. 1st edition, Houghton Mifflin Harcourt.
- Young, T.C.** (2024). Imagining spaces of hum(an)imality by animalizing childhoods and socializing animalhoods. In S. Born (Eds.), *Multispecies thinking in the classroom and beyond: Teaching for a sustainable future* (pp. 11–28). Lexington Books.

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