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# Posthumanism as research methodology: inquiry in the Anthropocene

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## ABSTRACT

The posthuman turn has radically—and rapidly—shifted what is possible in research methodology. In response, my aim in this conceptual paper is to suggest entry points into posthuman educational research methodology. I outline aspects of posthumanism while recognizing its multiplicity: there are many posthumanisms and each offers different twists, turns, and ways of thinking about methodology. In unfolding the potentials thereof, I locate posthumanism within our current epoch, which some scholars have suggested be renamed the Anthropocene to account for the impact of humanity on the planet. Then, I describe how posthumanism situates, processes, and affirms knowledge in interconnected and material contexts. Next, I consider how non-representational research imagines and animates methodologies that think differently. I conclude by discussing a postdisciplinary future for more-than-critical inquiries. Significantly, this article addresses recent advancements in posthuman research and engages with ongoing theoretical, methodological, and ethical debates.

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The posthuman turn has radically shifted what is possible in research methodology. Renewed attention to materiality, vitalism, ecologies, flora, fauna, climate, elements, things, and interconnections has created openings across academic fields regarding who and what has the capacity to know (e.g. Alaimo, 2016; Haraway, 2016; Wolfe, 2003). If humans are not the only possible subjects or objects of study in research, then a wealth of different possibilities emerge. This is why fields such as education, cultural geography, ecofeminism, and philosophy are contending with what it means to do research in an epoch in which humans are a geological force with planetary impact. Critical approaches to inquiry are no exception. Critical inquiries work against marginalization, oppression, and inequity; posthuman research expands these same objectives on a planetary scale. As the distance between these ventures continues to lessen in research, critical forms of posthumanism (e.g. Braidotti, 2013) have led to questions about how methodologies might respond to injustice within broader contexts.

These are not, however, easy conversations to enter. Moreover, given the faster and faster rate at which posthuman research methodologies are developing, they will be increasingly difficult to enter with each passing journal article, special issue, and book. In response, this article pauses to discuss posthumanism as educational research methodology. It highlights key aspects of posthumanism while recognizing that it is multiple: there are many posthumanisms and each offers different twists, turns, and ways of thinking about methodology. My aim is to present recent advancements in posthuman research through respectful engagements with ongoing theoretical, methodological, and ethical debates. In

doing so, I hope this article will serve as an invitation for others. This means it may be of less interest to scholars who live and breathe posthumanism and of more interest to those who wish for a place to begin. It may alternate between clearing points of confusion and inadvertently creating new ones. It may also be organized in a way that – as a conceptual review – sometimes moves away from writing stances that question, explore, and unknow; the openness that often marks posthuman writing waits until the postscript to emerge. In brief, by outlining some aspects of posthumanism and what they can potentially offer to research methodology, I hope to offer entry points for others who want to learn more and perhaps join in the conversation themselves.

In the process, I attempt to address but a few of the contemporary questions that posthumanism raises for research methodology. For example, what if critical inquiries encompassed more than humanity? How might posthumanism produce critical or post-critical research? Could (or should) critical inquiries retain their transformative aims? And what is posthumanism anyway and why is it now part of social science research? I react to these questions by first discussing how critical inquiries might take a more-than-human turn. I next discuss aspects of posthuman research, including why it has come to be, when it is situated, how it chooses to exist, and toward what ends. By working within the tensions between humanism and posthumanism, I then discuss what potentially is lost, what is gained, and what might become possible within critical forms of post-qualitative inquiry (e.g. Lather & St. Pierre, 2013; St. Pierre, 2011).

### **More-than-critical inquiries**

It perhaps is helpful to begin by recognizing that transformative theories in critical research emphasize 'the need to deconstruct and reconstruct knowledge frameworks that perpetuate inequity and injustice' (Shields, 2013, p. 21). In this paper, I suggest that these knowledge frameworks are both disciplinary and methodological in scope. For this reason, critical qualitative methodologies often have promoted transformative aims by attending to race, ethnicity, gender, sexuality, class, culture, spirituality, ability, language, and other aspects of identity. Critical methodologies welcome all of humanity to contribute knowledge. Because critical inquiry strives to be inclusive, anyone can offer insights based on their own socio-cultural experiences. As a result, robust bodies of literature have developed around Critical Race Theory, as well as feminist, LGBTQ, Indigenous, and dis/ability studies. These methodologies have been applied most often within interpretivist frames that underscore the importance of honoring marginalized people's experiences, perspectives, voices, and participation in research. Hence, critical research has sought to understand what and how diverse groups of people know as a precursor to transformative action. Feminist standpoint epistemologies have been central in this work, as they offer a means of understanding in which 'the grounds for knowledge are fully saturated with history and social life rather than abstracted from it' (Harding, 1993, p. 57). Standpoint theories have been necessary within efforts to create a more equitable and just society. And, in a world that contains racism, sexism, violence, and other forms of oppression, they remain necessary today.

Given the state of the planet, human-centered approaches to research may not be enough. Scholars such as Rosi Braidotti, Donna Haraway, Claire Colebrook, and Stacey Alaimo instead suggest that justice involves more than what can be found solely within the realm of human relations. Rather, justice is also material, ecological, geographical, geological, geopolitical, and geophilosophical. Justice is a more-than-human endeavor. Their aim is not to remove humans from research, but to deemphasize the focus on humans and recognize that non-human elements are always already present. How we live, eat, drink, breathe, commute, hear, see, smell, touch, sense, and experience life are inextricable from our local ecologies. Humans are characters in a cast of many. Consequently, 'As humans become more entangled in intricate relationships with technology and science, with other animals and the environment, notions of the human, along with various humanisms and anthropocentric approaches, have become difficult to uphold' (Åsberg, Koobak, & Johnson, 2011, p. 220). Regardless of how (or if) we acknowledge posthumanism, then, it could be argued that research is already influenced by land, geological epochs, and the ways in which humans interact with, and are shaped by, their material

surroundings.<sup>1</sup> Knowledge frameworks that privilege the human at the expense of the more-than-human could therefore be viewed as incomplete, as well as a potential injustice to non-human entities. Put simply, more-than-critical methodologies are needed for a more-than-human world. These debates have taken a turn directly into methodological theory—one that questions not only who is producing knowledge, but how, where, when, with what, and why it is being produced.

## Why posthuman research?

Before beginning, however, perhaps I should note my own initial discomfort with the term 'posthumanism.' Admittedly, it is not the most welcoming of terms, particularly within justice-oriented research. For me, the term initially conjured images of zombies wandering aimlessly through post-apocalyptic voids. As a materialist researcher who remains very much concerned with issues of justice, equity, and belonging, posthumanism was a difficult sell. I tried to avoid it. I did not want to be a posthumanist if it meant not being able to attend to axes of (human) need, such as those that relate to food, water, shelter, justice, and love. Moreover, the 'new' materialisms already seemed to provide a rich, if imperfect, playground of theoretical concepts that extended across feminist, poststructural, post/critical, and post-qualitative approaches to research. With Karen Barad, matter mattered. It could diffract, intra-act, cut. It could spacetime matter. Catherine Malabou's plasticity described how phenomena could simultaneously give form, take form, and destroy form. Jane Bennett helped me think 'data' through vibrant political ecologies. Giles Deleuze and Félix Guattari suggested a lifetime of concepts with which to play, such as events, assemblages, folds, rhizomes, and lines of flight. The new materialisms had much to offer. Yet, I noticed that the theorists I had labeled as new materialists kept invoking posthumanism in their works, directly and indirectly. I wished they would stop doing this, and I continued to resist. I also attempted to use Deleuze's logic of the *and* to suture different methodological perspectives together: new materialisms *and* posthumanisms; posthuman *and* more-than-human *and* non-human.

But then I began to more closely read key posthuman scholarship. Surprisingly, there was much to like. Though the label 'posthumanism' continues to be somewhat off-putting, I located several concepts of interest and found that posthumanism offers different ways of thinking in and about and without methodology. By reconsidering who and what is social, posthumanism moves away from perhaps the most basic premise within social sciences research. 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. It also problematizes distinctions that are drawn between and among species. This is significant because when humans are decentered as the only possible knowers, a wealth of research possibilities emerge. Posthumanism thus argues that because we are always already interconnected with our environments, methodological thinking should respond in kind by fostering similar interconnections. It is a significant departure from human-centered research in which it is no longer enough to produce piecemeal knowledge through interviews, observations, and texts. Language – whether it be in the forms of texts, sounds, or images – insufficiently represents the inter-actions among society, culture, geology, and ecology.

Being that posthumanism involves profoundly different ways of thinking about research design, I have included an example regarding how a specific social phenomenon might be studied within post/humanist frames (Appendix A). This example demonstrates how a posthuman perspective might cut across issues of education, social justice, and the environment; it offers support in a time when qualitative and post-qualitative scholars have just begun to explore how and why posthumanism expands methodological thinking in education and in other disciplines (e.g. Snaza et al., 2014). This is an exciting time in research as scholars contemplate how posthumanism presents opportunities for interconnections with the material settings in which we live: with policy, with schools, with each other, and with the environment and all that it contains. A more-than-human turn in research, therefore, offers a different set of methodological possibilities, beginning with the timeframes in which we produce knowledge.

## When is posthuman research?

Posthumanism provides openings to think differently about the challenges of our present day, and even, as some posthumanists suggest, our present epoch. In this regard, posthuman scholars often situate their work within the concept of the Anthropocene. When Paul Crutzen introduced the Anthropocene in a 2002 article in *Nature*, he wrote:

For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behaviour for many millennia to come. It seems appropriate to assign the term 'Anthropocene' to the present, in many ways human-dominated, geological epoch ... (p. 23)

Put simply, Crutzen is suggesting that human activities have ushered in a new epoch (see also Steffen, Crutzen, & McNeill, 2007; Steffen, Grinevald, Crutzen, & McNeill, 2011). Humans have transformed the geology of the Earth, and not in a good way.

Though the Anthropocene initially was intended to be a contribution to the geological sciences, it since has been taken up as a central concept within posthumanist studies, as well. Many posthumanists now turn to the Anthropocene to signal why posthumanism matters. Given the harm being done to the planet, posthumanist scholars theorize a/biotic life with a sense of urgency. As Braidotti (2013) explains,

posthuman theory is a generative tool to help us re-think the basic unit of reference for the human in the bio-genetic age known as 'anthropocene', the historical moment when the Human has become a geological force capable of affecting all life on this planet. By extension, it can also help us re-think the basic tenets of our interaction with both human and non-human agents on a planetary scale. (pp. 5–6)

The Anthropocene, then, moves posthumanism toward a framework that more clearly attends to the ways in which we shape, and are shaped by, our material environments. For many, posthuman knowledge occurs within the Anthropocene, and the Anthropocene is now.

Others, though, contest the choice of 'Anthropocene.' A different contingent of posthumanists instead would prefer that the term be expanded, substituted, or abandoned altogether. In an argument for expansion, Colebrook (2014) suggests that scholars 'imagine a non-Anthropocene (or even post-Anthropocene) human' (p. 8). She recommends envisioning how humanity might have developed through sustainable living practices (as opposed to the pollution, resource depletion, and mass extinctions that humans instead contributed to the geological record). For Colebrook, this is a move toward a counter-Anthropocene, or a world that might have been built on the promise of equity and renewal. Nevertheless, this is more of a thought exercise than a call to action, for Colebrook is skeptical of what she describes as the 'good' Anthropocene. In describing the problematic logic of Anthropocene, she summarizes its main argument as follows: 'if we have the power to transform the planet, then we also have the power to transform the planet for the better' (p. 11). Anthropocenic logic is troubling for some posthumanist scholars because it points directly back to humanity in a time when we should be looking beyond ourselves. In short, some argue that the Anthropocene is anthropocentric, and saving the planet ought to be more than an effort in saving ourselves. As Cohen and Duckert (2015) explain: 'To think that the world is ours to ruin or to save are two expressions of the same hubris' (p. 5).

This creates a conundrum for posthumanist scholars, especially given that there are questions regarding which precipitating event/s may have marked the onset of the Anthropocene. Even in listing agriculture, industrialization, colonization, and capitalism as potential contributing factors, Colebrook (2014) expresses a feminist concern that resolving any one of these challenges on behalf of a "good" Anthropocene would be possible only by way of countless injustices' (p. 11). She is concerned, for example, about the processes that would be involved in deciding what is just, and the potential for the Global North to effectuate so-called justice at the expense of the Global South. Others are more comfortable pointing to capitalism as a root cause of geological and ecological destruction. Donna Haraway and Bruno Latour have suggested that our present epoch be renamed the Capitalocene, a term that Timothy Morton (2016) rejects on the basis that capitalism is a symptom, not a cause. For Morton, humans and humans alone ushered in the Anthropocene. These are particularly heated debates that illustrate major differences in how the Anthropocene is conceptualized, even among scholars who

share deep concerns for the planet (see, for example, Alaimo, 2015; Morton, 2016). In part, these separations stem from different disciplinary priorities as posthumanist scholars draw from wide traditions: ecology, geology, geography, feminism, cultural studies, science studies, political science, economics, and philosophy, among others.

Such debates raise the question of what the Anthropocene might *do* in research. Each of the fields named above might respond differently depending upon disciplinary priorities. Some might suggest that the Anthropocene produces consciousness raising, sustainable living practices, or an understanding that we live in an interconnected world. Others might point to the futures that a post-Anthropocene has the capacity to imagine: alternative economic systems, forward-thinking environmental policies, and a healthier planet. The Anthropocene is the beginning of a conversation, albeit one that can quickly disperse in multiple directions toward a post-Anthropocene, Capitalocene, and related constructs. More broadly, then, the Anthropocene (and its ilk) can do several things: situate research within a particular time period; support inquiries that include aspects of in/non/human life; and highlight the purpose and significance thereof. Anthropocenic thinking invites scholars to refine their political commitments both in and to research.

Debates about naming our epoch also reflect a complex posthuman vocabulary. Because posthumanism involves a theoretically rich, yet contested set of terms, it can be confusing and promising and rewarding all at the same time. At the center of many of these debates are differences regarding not only how the epoch in which we live should be named, but also who and what can know within it, and how.

## How is posthuman research?

Posthumanists do not seek to study phenomena – social or otherwise – in isolation. Rather, phenomena are multiple, subjective, and produced from a series of complex relations. In moving away from empirical models of science that seek to determine causality, reliability, and validity, posthuman knowledges move toward material ways of thinking and being. In these regards, posthuman research is as much about what knowledge is as it is how knowledge comes to be. Posthuman approaches to knowledge are marked by difference, even within themselves. Consequently, the next section is not meant to represent the field of posthumanism as a unified whole (for that would be antithetical to posthumanist thought), but to highlight several key approaches to knowledge production within posthumanist research. In so doing, I suggest that posthuman research produces situated, material, interconnected, processual, and affirmative knowledges.

### *Situated and partial*

Situated knowledges stem from feminist standpoint theories (e.g. Harding, 1993). They are partial knowledges that intersect with methodological conversations regarding positionality, reflexivity, voice, and power. Situated knowledges disrupt the authority of research and any claims of universal knowledge, and they were designed, in part, to legitimate the perspectives of women in research and society. As a hard-won epistemological and political achievement, situated knowledges provide a necessary means of partially translating experiences ‘among very different—and power-differentiated—communities’ (Haraway, 1988, p. 580). At the same time, however, when situated knowledges shift from interpretivism to posthumanism, they can become problematic. Where interpretive feminism centers the knowledges of women and other marginalized groups, posthumanism seeks to decenter the role of humans altogether. Maintaining a simultaneous commitment to situated knowledges and standpoint theories can be difficult: the marginalized perspectives that standpoint theories seek to elevate conflict with the certainty that situated knowledges seek to undermine. Subsequently, situated knowledges are an indispensable yet problematic tool (Haraway, 1988; Rose, 1997). They are at once critical, tenuous, affective, and partial. And, within the inclusive frames of posthumanism, they also might be generated by the materiality of non/human bodies.

### ***Material, embodied, and transcorporeal***

Posthumanism also emphasizes how matter comes to matter (Barad, 2003), particularly in relation to ‘the material interactions of human corporeality with the more-than-human world’ (Alaimo, 2010, p. 2). To account for the ways in which posthuman bodies matter, Alaimo uses the term ‘transcorporeality’ to describe how material knowledges move across in/non/human bodies. These can include ‘human bodies, nonhuman creatures, ecological systems, chemical agents, and other actors’ (p. 2), as well as bodies of water (Alaimo, 2012; Chen, MacLeod, & Neimanis, 2013). As part of the continued commitment to feminist and critical theory, posthumanism thus attends to the ways in which different bodies are subject to the forces of oppression, violence, marginalization, labor, and production. Where posthumanism departs from interpretivism, however, is the equivalent emphasis that it places upon bodies of nonhuman matter. In other words, humanism restricts itself to the primacy of human bodies, whereas posthumanism can take a decidedly more environmental turn. This is why eco-feminist strands of posthumanism refer to Earth as Gaia and equate violence against the planet (such as fracking, deforestation, and strip mining) with violence against women. Posthumanists remain concerned that humanity has depleted the planet and instead advocate for practices that are ethical, sustainable, and generative. By seeking to expand global understandings of how matter matters, posthuman scholars attend to embodiment on a different scale. This is where the concept of the Anthropocene is particularly helpful, as it provides a lens to understand (1) the pace at which post-industrial humanity has altered the planet and (2) how bodies are ethically and politically situated within material environments.

### ***Interconnected, relational, and transversal***

In/non/human bodies remain interconnected within vital approaches to materialism. As Braidotti (2013) explains, a ‘vitalist approach to living matter displaces the boundary between ... animal and non-human life’ (p. 60). As she continues, vitalism is a ‘transversal force that cuts across and reconnects previously segregated species, categories, and domains’ (p. 60). Put differently, transversality cuts across artificial divides, including those that are human/nonhuman, nature/culture, living/nonliving, etc. Everything is connected with everyone, always. To illustrate, Haraway takes up transversal relations in her notions of trans-species relations and transgenic life, including through figurations such as companion species, cyborgs, and non/human assemblages. Whether species are relating with each other or with various technologies, transversal relations gravitate toward interconnection. Transversality is an important move within a counter-Anthropocene that removes the central focus from humans and considers the ways in which other species live in, and interact with, their material surroundings. Transversality opens the door to consider the potential for alternative interconnections, relations, and nonhuman agencies – ones which cannot be conceptualized within strictly human realms.

### ***Processual***

When ‘life’ is viewed as interconnected, relational, and transversal, it then can be positioned as an interactive and open-ended process. In part, this is why posthuman philosophy calls for a process ontology, or a way of existing that emphasizes the different ways in which non/humans might continue to relate among each other. In this sense, posthumanism is more concerned with questions of how non/humans interact and is less concerned with questions of what non/humans are (per Braidotti, 2006). Within frames of relationality and connectivity, then, everything and everyone continue to remain in motion. The process philosophies and ontologies of Alfred North Whitehead (1978) and Deleuze and Guattari (1994) have been influential in this regard, as they further prioritize the role of creative experimentation over the delivery of definitive answers. In explaining how process supersedes product, for instance, Deleuze and Guattari suggest that ‘To think is to experiment, but experimentation is always that which is in the process of coming about’ (1994, p. 111). Yet, thinking and experimenting are not enough in and

of themselves. Rather, it is important for Deleuze and Guattari, as it is for other posthuman scholars, that thought experiments be grounded in creative affirmation.

### **Affirmative**

For Braidotti (2013), the emphasis upon process in posthumanist thought invokes a new conceptual creativity. It involves an affirmative politics that leads to alternative projects and possibilities in research; it is both critical and creative. Such affirmation can be found throughout the writings of posthumanist scholars and philosophers. For example, Massumi (1987) prefaces his translation of Deleuze and Guattari's text, *A Thousand Plateaus*, by positing:

The question is not: Is it true? But: does it work? What new thoughts does it make possible to think? What new emotions does it make possible to feel? What new sensations and perceptions does it open in the body? (p. xv)

This affirmative approach to creativity translates into alternative visions for research, such as those found within the imaginative experiments of Whitehead and the non-representational thought he continues to inspire. To illustrate, the next section discusses affirmative creativity through two forms of research: the first is non-representational, whereas the second involves the animation of lifeworlds. Both push the boundaries of research through radical thought experiments. By demonstrating how humans might think with other species, phenomenon, and elements, affirmative scholars hope that humans will begin to think differently about themselves.

### **How is posthuman research (not) represented?**

Theorists who operate within Whitehead's imaginative frames often turn toward non-representation. Some view non-representation as a theory; others view it as a practice. What holds across non-representational research is that scholars think within and through natural phenomenon. Non-representational research then – whether as a formal theory or an informal practice – is a way of situating research in the everyday settings in which we live. It is a way to destabilize artificial boundaries between nature and culture while incorporating more organic ways of thinking, being, knowing, and writing into research.

### **Non-representational practices**

For instance, Ingold (2015) proposes that non-representational research is an informal way of working. He suggests it is both a process and a practice as he explains non-representational research:

This is not exactly a theory, nor is it a method or technique as commonly understood. It is not a regulated set of steps to be taken towards the realization of some predetermined end. It is a means, rather, of carrying on and of being carried – that is, of living a life with others, humans and non-humans all – that is cognizant of the past, finely attuned to the conditions of the present, and speculatively open to the possibilities of the future. I call it a *correspondence*, in the sense of not coming up with some exact match or simulacrum for what we find in the things and happenings going on around us, but of *answering* them with interventions, questions, and responses of our own. (Ingold, 2015, p. vii, emphasis in original)

In this sense, non-representational research forms a correspondence with the world. It moves away from artificial structures – including those of social science research – at the same time that it moves toward relations, doings, events, and affects (Vannini, 2015b).

Non-representational research calls method into question. It challenges the prescription of method by arguing that standardized methods do little more than provide a false sense of security that knowledge is stable, or even knowable. Social science, non-representational scholars instead would argue, is neither social in a strictly human sense nor fully understandable; this is why social science should expand notions of who and what is social to include living and non-living matter. Put differently, because causes and effects are indeterminate, entangled, and involve multiple actors, they should be treated as such within research. Perhaps unsurprisingly, then, non-representational scholars remain hesitant to set concrete boundaries on exactly what non-representational research is, or how it should be done.



Nevertheless, Lorimer (2005)<sup>2</sup> identifies several shared aims and characteristics in an attempt to help others navigate an intellectually diverse, complex, and contested field. As he suggests, the most common thread might be the desire to expand who and what counts as 'social' in social science research. For Lorimer,

This often means thinking through locally formative interventions in the world .... The focus falls on how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, embodied movements, precognitive triggers, practical skills, affective intensities, enduring urges, unexceptional interactions and sensuous dispositions. (p. 84)

In brief, non-representational theory is situated in the world, allows scholars to correspond with material settings, and is grounded in local formations. Because non-representational thinking is against method (Manning, 2016), it requires alternative ways of thinking and doing research. This is where scholars begin to take the 'imaginative leaps' for which Whitehead calls.

Non-representational thinking maintains openness to different modes of thought. For Thrift (2008), it 'requires attempting to let loose a certain kind of wild conceptuality that is attuned to the moment, but always goes beyond it, which always goes against cultural gravity, so to speak' (pp. 19–20). In this sense, non-representation is at once creative, practical, ethical, and wild. It embraces the uncertainty of knowledge and the forces that accumulate to produce events; it views the uncertain messiness of knowledge production as an ongoing opportunity in a politics of hope, creativity, and imagination. Moreover, non-representational thinking emphasizes movements and flows of everyday life; pre-individuality; practices; things; experimentation; affect and sensation; and space (Thrift, 2008). It is within these frames that non-representational scholars have made substantive contributions to non-representational formations and non-representational methodologies. It is important to note that non-representation is not an end-run around method, but offers a way of intertwining theory with methodological thinking to produce something different, something generative, and something wildly imaginative.

Non-representational research receives mixed reactions. It is at once promising and potentially problematic. Namely, however much it may be desirable to move away from representation, it may not be possible to avoid it all together. Perhaps, then, representation is something that might be troubled in degrees: if purely non-representational research is the aspiration, then less-representational research might be an intermediate goal. In this regard, non-representational research might be viewed as a scholarly idea that continues to advance in a somewhat uneven manner. In the speculative examples that follow, for instance, there are times when human ways of knowing may unintentionally be projected onto non-human life. As one reviewer aptly noted, though, the importance of posthumanism may not be in knowing, but in exploring how we are entangled with other organisms around us, including with 'the organisms that inhabit our human bodies.'

### ***Animating lifeworlds***

Non-representational research situates scholars directly in a world that is teeming with life (Vannini, 2015b). This allows researchers to reconnect knowing 'with being, epistemology with ontology, thought with life' (Ingold, 2006, p. 19). In order to put back together what empirical science has torn apart, Ingold suggests that scholars return to their sense of wonder, astonishment, and curiosity by becoming entangled with their environments – by corresponding with their environments. Non-representational scholars take on this challenge across the ecological spectrum as they think with elements, climate, animals, plants, and bacteria. Scholars have explored several non-representational lines of inquiry to date, including those of climate, critical animal studies, pre-cognition, and vitalism/animism. In its multiple forms, non-representational research moves across modes, topics, and ecologies.<sup>3</sup>

In animating lifeworlds, local formations have been taken up in innovative ways across a re-envisioned field of social science research. From swarms to slime molds, scholars have turned to local formations to re-think methodology. By attending to how in/organic matter might think, process information, act, and respond – even in pre-cognitive manners – scholars are taking clues directly from ecological behavior. In describing this turn Vannini (2015a) writes that the evolution of 'non-representational

research continues to emphasize the fleeting, viscous, lively, embodied, material, more-than-human, precognitive, non-discursive dimensions of spatially and temporally complex lifeworlds' (p. 318). These types of local formations are attuned to the ways in which affective movements occur through in/human bodies and 'might incorporate technologies, things, non-human living matter, discourses or even, say, a swathe of noise or swarm of creatures' (Lorimer, 2008, p. 552).

The animation of lifeworlds has occurred in imaginative directions, many of which aim to disrupt previously undisturbed human patterns of thought. Some of these animations draw from the biological sciences. Shaviro (2012), for example, pairs Whitehead with biology to discuss how research might be informed by the pre-cognitive behaviors of slime molds, bacteria, and plants. Because these lifeforms make decisions as they move and grow, they demonstrate the ability to process information and react accordingly. Marder (2013) similarly examines how human thinking might be informed by plant thinking; he proposes that thinking with plants might help us to think differently about plants, and, in effect, think differently about how we as humans think. Serres (2007) turns to parasites to accomplish similar objectives. Rotman (2000) uses birds to theorize the individual self in relation to the collective other as he asks whether human collectives are biologically and socially 'more like a mass of starlings than we ever imagined?' (p. 56). More generally, scholars also think alongside animals as companion species (Haraway, 2003) and through critical animal studies (Wolfe, 2003, 2010). Additionally, beyond biological lifeworlds, scholars also have animated matter by examining the role of climate and weather (Neimanis & Walker, 2014); elements (Cohen & Duckert, 2015); letters (Davies, 2017); and objects, systems, and things (see Bennett, 2012). Many post-qualitative methodologists have followed suit.

## Posthumanism and post-qualitative inquiry

Discussions of posthumanism in this paper explore not only what posthumanism is, but what it might do and become. As I have explained, such endeavors can be animated, non-representational, material, affirmative, situated, processual, and/or interconnected. These and similar emphases can be found within post-qualitative inquiry, as well. This is important, as St. Pierre (2011) writes, because there are now opportunities in research to 'do something different from the beginning' (p. 623, emphasis in original). This includes posthumanism, which continues to be a catalyst within post-qualitative inquiry. Posthumanism, then, perhaps provides an impetus to consider, as St. Pierre suggests, 'what might happen if we give up exhausted structures and [instead] attend to what *is* happening' (p. 623, emphasis in original). This is what I attempt in the section that follows: attend to the happenings of post-inquiry in education.

Before continuing, however, it is perhaps helpful to suggest that part of what posthuman and post-qualitative inquiries *do* is *diffract* (Barad, 2003); they disperse methodologies in several directions at once. I imagine that post-inquiries are like crystal wind chimes – they dance in the breeze as small, vibrant rainbows and glimmers of light flash and disappear against the backdrop of delicate, spontaneous melodies. Sometimes the wind chimes produce momentary refrains that open other languages for research (MacLure, 2016). Yet, attempts to isolate individual notes overlook what the larger entanglement of wind and crystals and light and sounds produce: varied and constantly changing movements. That is the beauty. Some days bring more wind, some less, some none at all, and some bring gusts that move in multiple directions simultaneously. The movements of post-inquiries are not dissimilar in this regard. Sometimes they move in tandem, occasionally touching, drifting apart, and then flowing together again as scholars move back and forth among allegiances to post-qualitative, posthuman, 'new' materialist, and other forms of inquiry.

In the spirit of offering multiple points of engagements for scholars who are interested in post-qualitative/posthuman research, the next section provides a brief, all-too-incomplete review. Each passing moment seems to introduce fresh post-inquiries. As an interdisciplinary field that draws from concepts, theories, philosophies, and methodologies located throughout the social sciences and (post) humanities, educational research similarly moves in multiple directions at once. For example, posthuman and post-qualitative scholars in educational research recently have thought methodology through

	plant-thinking			
writing		with	nature	
	thinking	with	the environment	
	thinking	with	earth, air, fire, and water	
	thinking	with	water	
	thinking	with	Deleuze	
	thinking	with	Whitehead	
	thinking	with		concepts
	thinking	with		theory
	thinking	without		method
	thinking	without		method
	thinking	without		methodology
against				methodology
anti				a proper name
methodologies		without		
philosophies		without		
ecology		without	nature	
		without	criteria	
researching		without	representation	
	non		representational	theory
	non		representational	methodologies
	more than		representational	
	more than			methodologies
always	more than	one		

**Figure 1.** Posthuman prefixes and prepositions: namings, unnamings, renamings.  
 Sources (from top to bottom): Marder (2013); Ulmer (2017b); (Neimanis et al., 2015); Cohen and Duckert (2015); Chen, MacLeod, and Neimanis (2013); Mazzei and McCoy (2010); Stengers (2011); St. Pierre (2015); Jackson and Mazzei (2012); Jackson (2016); Manning (2016); Nordstrom (in press); Koro-Ljungberg (2016); Tesar (2016); Morton (2007); Shaviro (2012); MacLure (2013); Thrift (2008); Lorimer (2005); Ulmer (2017a); Manning (2013).

elements, climate, plants, animals, objects, and things. Several rhetorical moves have been named, unnamed, and then renamed (Figure 1). This is occurring, I submit, under several related umbrellas of what post-inquiries do: thinking without, thinking with, and thinking differently.

**Thinking without**

Thinking without is non-representational. It can involve ‘researching without representation’ (MacLure, 2013); ‘thinking without method’ (Jackson, 2016); and ‘philosophies without a proper name’ (Tesar, 2016). Here, scholars are suggesting what might be removed from the conventional research enterprise: representation, method, proper names, labels, and perhaps even methodology itself (Koro-Ljungberg, 2016). Because fixed structures discourage and prohibit creativity, such scholars argue against the reliance upon, and deference to, prescriptive method in social science research. Thinking without thus becomes a subtractive approach that, in order to create openings in methodology, first removes possible barriers. Once the path has been cleared, scholars then are free to embark upon imaginative adventures.

**Thinking with**

In contrast, thinking with is more-than-representational. Scholars in the field of educational research methodology also have suggested thinking with objects (Nordstrom, 2013; Taylor, 2013); things (Tesar & Arndt, 2016); and technologies (Bodén, 2013). They think with animals (Pedersen, 2011a, 2011b) to conduct biochoreographies, zooethnographies, and multispecies ethnographies (Pacini-Ketchabaw, Taylor, & Blaise, 2016; Pedersen, 2013). They further think with elements such as rocks (Springgay & Truman, 2016), stones (Rautio, 2013), and water (Pacini-Ketchabaw & Clark, 2016; Somerville, 2013), often within the field of early childhood education. More philosophically, scholars think with theory (Jackson & Mazzei, 2012). Together, thinking with objects, things, animals, elements, and theories are additive approaches in which scholars consider how research methodology might be enhanced. They wonder how might research might become more than itself by adding news ways of thinking into

methodology. This has led some educational researchers to collect ‘data’ with creative experiments, walking methodologies, sensory ethnographies, and childhood play. This is not to suggest, however, that posthuman methodologies are restricted to the processes of addition and subtraction; rather, in their openness they can multiply among themselves by thinking differently and re-envisioning research.

### ***Thinking differently***

The impulse to think differently continues to propel post-qualitative research forward. If there is a call to arms in post-qualitative research (Lather & St. Pierre, 2013; St. Pierre, 2011), this might be it. Thinking differently invites alternatives to methodological orthodoxy – ones that wonder what else the future of methodology might hold and/or become. This might involve thinking with, thinking without, or different approaches to thinking altogether.<sup>4</sup> What is important is that thinking differently offers a precursor to doing everything in research differently: representation, writing, theory, ‘data,’ collaboration, and so on and so forth.<sup>5</sup>

The issue of thinking differently has been taken up by the researchers described above and many others, as evidenced by the growing number of books, special issues, and projects geared toward exploring the potential of posthumanism in educational research (Lather & St. Pierre, 2013; Pedersen & Pini, 2016; Reinertsen, 2016; Taylor & Hughes, 2016; see also Kuby & Rucker, 2016). This has contributed to the creation of an alternative methodological vocabulary—one which remains at once partial, situated, earthly, and prepositional. For example,

Anthropocene, Capitalocene, Plantationocene, Chthulucene, Ecocene  
 more-than-, post-, trans-, non-, anti-, counter-  
 against, with, without  
 theory, method, methodology, materiality, matter  
 embodiment, transcorporeality  
 climate, weather, elements  
 geology, geography, geopolitics, Gaia  
 ecologies, plants  
 animals, animism, companion species  
 collectives, swarms  
 cartographies, walking methodologies  
 sensory ethnographies, place-making  
 objects, things, relations  
 process philosophy and ontology  
 vibrant, agential, entangled  
 situated, generative, productive, affirmative  
 transversal, speculative, performative, queer  
 interconnected  
 And ....

To think differently, then, scholars interested in posthumanism might begin by exploring some of these terms, finding others, and perhaps even making their own.

### **Future imaginaries of posthuman research**

The language and materiality of posthumanism creates openings for research, educational and otherwise. This is not only the case with the postscript example of the water crisis in Flint, Michigan, but in other contests over access to clean water for humans and nonhumans alike. Moreover, as ice melts and the seas continue to rise, the habitats of multiple species are disappearing. This creates several

potential futures for educational classrooms: at the same time that ocean waves threaten the island classrooms of soon-to-be climate refugees, 'green' private schools made of bamboo are being placed in jungles to teach students about the environment. Because we live in a time of environmental exigency, there are opportunities for both education and educational research to respond in democratic ways.

This is a critical endeavor. It is critical in the sense that it is urgent, and it critical from a theoretical and philosophical perspective, as well. It has the potential to transform as it emphasizes the roles of 'interdependence, interconnectedness, and global awareness' in research (Shields, 2013, p. 21). Yet, what might be transformed within posthuman research? Perhaps interviews might become transformative entanglements (per Marn & Wolgemuth, 2016). Or, perhaps researchers might re-envision issues of agency, time, and responsibility in posthumanistic research. Among the many possibilities that exist, however, I would suggest that two currently are of particular note: interrelations among post-methodologies and methodologies involving land.

As previously discussed, thinking differently about methodology is an ethical, political, and intellectual imperative. In these regards, thinking differently creates opportunities for internal discussions among researchers who work within the 'posts-'; including post-humanists, post-structuralists, post-modernists, post-colonialists, post-critical researchers, and post-qualitative researchers, among others. Beyond differences within discourse communities, there are also opportunities for much needed interconnections among discourse communities.

For example, a future imaginary of posthuman research might foster stronger connections with Indigenous research. Although posthumanism, new materialism, and Indigenous philosophies overlap, they rarely intersect. This leads to questions regarding the potential for interconnection and collaboration, as well as the risk for appropriation. To better situate posthumanism within Indigenous research, therefore, posthuman researchers might turn to the educational pedagogies that think 'with land, ice, water, and snow' (Rowan, 2015). Posthuman researchers also might turn to Indigenous research to learn from critical place inquiries (Tuck & McKenzie, 2015). Relations to the land are important, especially as we are entangled as geo-centered subjects (Braidotti, 2013) in the world around us. Perhaps, then, posthumanism has the potential to work toward healing the rift between the new materialisms and Indigenous research by more carefully highlighting the roots of new materialist concepts in Indigenous thinking alongside their shared aims. This might offer a much needed dialog that puts posthuman research in conversation with Indigenous practices (e.g. Somerville, 2014). For researchers who work within and across posthumanism, new materialisms, and/or Indigenous research, therefore, there are opportunities not just to consider how methodology intersects with land, but to examine how these various methodological approaches relate to each other.

Working toward interrelations among post-methodologies and methodologies involving land may involve moves toward transdisciplinarity and postdisciplinarity (Neimanis, Åsberg, & Hedrén, 2015). This is important, as these authors write, because 'In the context of the Anthropocene, we no longer have the luxury of imagining humanness and culture as distinctly separate from nature, matter, and worldliness' (p. 68). Instead, interconnection and relationality among disciplines, theories, philosophies, and methodologies take on a greater sense of import. As researchers work toward shared aims, the authors suggest that scholars should consider (re)incorporating humanistic perspectives into posthuman methodologies, as we share the Earth together.

Posthuman research has not been, nor will it continue to be, without challenge. The approach can be creative and generative as much as it can be unsettling, even for scholars who lead this charge. Vannini (2015a) notes that scholars who embark upon non-representational research may be filled with self-doubt, trepidation, and uncertainty as they seek for different ways of producing knowledge. Rotman (2000) offers similar thoughts as he observes that scholars may be beginning, 'haltingly, with confusion, pain, wonder, inevitable resistance, and moments of intense pleasure, not to say joy and surprise, to become multi-beings, able to be beside ourselves in ways we're only just beginning to recognize and feel the need to articulate' (p. 79). Despite the challenges, reservations, hesitations, and false starts, however, posthumanism remains important to explore in research. Researchers are just now beginning to think with the Anthropocene, much less a post-Anthropocene, counter-Anthropocene,

or even an imagined Eocene, in which humans might engage sustainable and renewable practices. Further, moves to re-envision research within our epoch, better connect congruent methodologies, and be better citizens of the planet are likely to be slow. Yet, these efforts are important, for as Braidotti (2013) reminds us, posthumanism ‘urges us to think critically and creatively about who and what we are actually in the process of becoming’ (p. 12).

## Notes

1. I adopt a more-than-human approach to posthumanism (as opposed to a strictly non-human or anti-human stance). In part, this is because I situate my thinking within the field of educational research – a field that often gravitates in some, way, shape, or form toward students. The critical humanism that inadvertently finds its way into this work thus illustrates the challenges of taking up posthuman research for, as Lather and St. Pierre (2013) observe, ‘We always bring tradition with us into the new’ (p. 630).
2. Although discussed here within the context of non-representational theory, or NRT, Lorimer (2005) prefers the term ‘more-than-representation.’ For Lorimer, the prefix ‘non’ creates closure, whereas ‘more-than’ better aligns with the openness that a move away from representation promotes.
3. These, however, are only but a few examples of non-representational research. As Vannini (2015b) observes, non-representational research also can involve creative genres of writing, multimedia, and performance.
4. Others might conceptualize thinking with, thinking without, and thinking differently as (more) discrete practices.
5. For an exemplar of how ‘thinking differently’ manifests across different aspects of, and approaches to, research, see Wyatt et al. (2014). In addition, Somerville (2016) recently has re-thought ‘data’ within posthuman contexts.

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## References

- Alaimo, S. (2010). *Bodily natures: Science, environment, and the material self*. Bloomington, IN: Indiana University Press.
- Alaimo, S. (2012). States of suspension: Trans-corporeality at Sea. *Interdisciplinary Studies in Literature and Environment*, 19, 476–493.
- Alaimo, S. (2015). Elemental love in the Anthropocene. In J. Cohen & L. Duckert (Eds.), *Elemental ecocriticism: Thinking with earth, air, water, and fire* (pp. 298–309). Minneapolis, MN: University of Minnesota Press.
- Alaimo, S. (2016). *Exposed: Environmental politics and pleasures in posthuman times*. Minnesota, MN: University of Minnesota Press.
- Åsberg, C., Koobak, R., & Johnson, E. (2011). Beyond the humanist imagination. *NORA—Nordic Journal of Feminist and Gender Research*, 19, 218–230.
- Barad, K. (2003). Posthumanist performativity: Toward an understanding of how matter comes to matter. *Signs: Journal of Women in Culture and Society*, 28, 801–831.
- Bennett, J. (2012). Systems and things: A response to Graham Harman and Timothy Morton. *New Literary History*, 43, 225–233.

- Bodén, L. (2013). Seeing red? The agency of computer software in the production and management of students' school absences. *International Journal of Qualitative Studies in Education*, 26, 1117–1131.
- Braidotti, R. (2006). Posthuman, All too human. *Theory, Culture & Society*, 23, 197–208.
- Braidotti, R. (2013). *The posthuman*. Cambridge, UK: Polity Press.
- Chen, C., MacLeod, J., & Neimanis, A. (Eds.). (2013). *Thinking with water*. Montreal, QC: McGill-Queen's University Press.
- Cohen, J., & Duckert, L. (Eds.). (2015). *Elemental ecocriticism: Thinking with earth, air, water, and fire*. Minneapolis, MN: University of Minnesota Press.
- Colebrook, C. (2014, April). We have always been post-anthropocene. Presentation at the Anthropocene Feminism conference, University of Wisconsin, Milwaukee, WI.
- Crutzen, P. J. (2002). Geology of mankind. *Nature*, 415, 23.
- Davies, B. (2017). Animating ancestors: From representation to diffraction. *Qualitative Inquiry*. Advance online publication.
- Deleuze, G., & Guattari, F. (1994). *What is philosophy?* (H. Tomlinson & G. Burchell, trans.). London: Verso. (Original work published 1991)
- Egan, P., & Spangler, T. (2016, January 16). President Obama declares emergency in Flint. *Detroit Free Press*. Retrieved from <http://www.freep.com/story/news/local/michigan/2016/01/16/president-obama-declares-emergency-flint/78898604/>
- Gleick, P. (2010). *Bottled and sold: The story behind our obsession with bottled water*. Washington, D.C.: Island Press.
- Haraway, D. (1988). Situated knowledges: The science question in Feminism and the privilege of partial perspective. *Feminist Studies*, 14, 575–599.
- Haraway, D. (2003). *The companion species manifesto: Dogs, people, and significant otherness*. Chicago, IL: Prickly Paradigm Press.
- Haraway, D. (2016). *Staying with the trouble*. Durham, NC: Duke University Press.
- Harding, S. (1993). Rethinking standpoint epistemology: What is 'strong objectivity?'. In L. Alcoff & E. Potter (Eds.), *Feminist epistemologies* (pp. 49–82). New York, NY: Routledge.
- Ingold, T. (2006). Rethinking the animate, re-animating thought. *Ethnos*, 71, 9–20.
- Ingold, T. (2015). Foreword. In P. Vannini (Ed.), *Non-representational methodologies: Re-envisioning research* (pp. vii–x). London: Routledge.
- Jackson, A. Y. (2016, May). Thinking without method. Paper presented at the Twelfth International Congress of Qualitative Inquiry, Champaign-Urbana, IL.
- Jackson, A. Y., & Mazzei, L. A. (2012). *Thinking with theory in qualitative research: Viewing data across multiple perspectives*. New York, NY: Routledge.
- Koro-Ljungberg, M. (2016). *Reconceptualizing qualitative research: Methodologies without methodology*. Thousand Oaks, CA: Sage.
- Kuby, C. R., & Rucker, T. G. (2016). *Go be a writer! Expanding the curricular boundaries of literacy learning with children*. New York, NY: Teachers College Press.
- Lather, P., & St. Pierre, E. A. (2013). Post-qualitative research. *International Journal of Qualitative Studies in Education*, 26, 629–633.
- Lorimer, H. (2005). Cultural geography: The busyness of being 'more-than-representational'. *Progress in Human Geography*, 29, 83–94.
- Lorimer, H. (2008). Cultural geography: Non-representational conditions and concerns. *Progress in Human Geography*, 32, 551–559.
- MacLure, M. (2013). Researching without representation? Language and materiality in post-qualitative methodology. *International Journal of Qualitative Studies in Education*, 26, 658–667.
- MacLure, M. (2016). The refrain of the a-grammatical child. *Cultural Studies ↔ Critical Methodologies*, 16, 173–182.
- Manning, E. (2013). *Always more than one: Individuation's dance*. Durham, NC: Duke University Press.
- Manning, E. (2016). *The minor gesture*. Durham, NC: Duke University Press.
- Marder, M. (2013). *Plant-thinking: A philosophy of vegetal life*. New York, NY: Columbia University Press.
- Marn, T., & Wolgemuth, J. (2016). Purposeful entanglements: A new materialist analysis of transformative interviews. *Qualitative Inquiry*. Advance online publication.
- Massumi, B. (1987). Translator's foreword: Pleasures of philosophy. In G. Deleuze & Felix Guattari (Ed.), *A thousand plateaus: Capitalism and schizophrenia* (pp. ix–xv). Minneapolis, MN: University of Minnesota Press.
- Mazzei, L. A., & McCoy, K. (2010). Thinking with Deleuze in qualitative research. *International Journal of Qualitative Studies in Education*, 23, 503–509.
- Morton, T. (2007). *Ecology without nature: Rethinking environmental aesthetics*. Cambridge, MA: Harvard University Press.
- Morton, T. (2016). *Dark ecology*. New York, NY: Columbia University Press.
- Neimanis, A., Åsberg, C., & Hedrén, J. (2015). Four problems, four directions for environmental humanities: Toward critical posthumanities for the Anthropocene. *Ethics & the Environment*, 20, 67–97.
- Neimanis, A., & Walker, R. L. (2014). Weathering: Climate change and the 'thick time' of transcorporeality. *Hypatia*, 29, 558–575.
- Nordstrom, S. N. (2013). Object-interviews: Folding, unfolding, and refolding perceptions of objects. *International Journal of Qualitative Methods*, 12, 237–257.
- Nordstrom, S. N. (2017). Antimethodology: Postqualitative generative conventions. *Qualitative Inquiry*. Advance online publication.

- Pacini-Ketchabaw, V., & Clark, V. (2016). Following watery relations in early childhood pedagogies. *Journal of Early Childhood Research, 14*, 98–111.
- Pacini-Ketchabaw, V., Taylor, A., & Blaise, M. (2016). Decentering the human in multispecies ethnographies. In C. Taylor & C. Hughes (Eds.), *Posthuman research practices in education* (pp. 149–167). London: Palgrave MacMillan.
- Pedersen, H. (2011a). Counting affects: Mo(ve)ments of intensity in critical avian education. *Canadian Journal of Environmental Education, 16*, 14–28.
- Pedersen, H. (2011b). Release the moths: Critical animal studies and the posthumanist impulse. *Culture, Theory and Critique, 52*, 65–81.
- Pedersen, H. (2013). Follow the Judas sheep: Materializing post-qualitative methodology in zooethnographic space. *International Journal of Qualitative Studies in Education, 26*, 717–731.
- Pedersen, H., & Pini, B. (2016). Educational epistemologies and methods in a more-than-human world. *Educational Philosophy and Theory*. Advance online publication.
- Rautio, P. (2013). Children who carry stones in their pockets: On autotelic material practices in everyday life. *Children's Geographies, 11*, 394–408.
- Reinertsen, A. B. (Ed.). (2016). *Becoming earth*. Rotterdam, AN: Sense Publishers.
- Rose, G. (1997). Situating knowledges: Positionality, reflexivities and other tactics. *Progress in Human Geography, 21*, 305–320.
- Rotman, B. (2000). Going parallel. *SubStance, 29*, 56–79.
- Rowan, M. C. (2015). Thinking with land, water, ice, and snow: A proposal for 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). New York, NY: Routledge.
- Serres, M. (2007). *The parasite*. Minneapolis, MN: University of Minnesota Press.
- Shaviri, S. (2012). *Without criteria: Kant, Whitehead, Deleuze, and aesthetics*. Cambridge, MA: Massachusetts Institute of Technology Press.
- Shields, C. M. (2013). *Transformative leadership in education: Equitable change in an uncertain and complex world*. New York, NY: Routledge.
- Snaza, N., Appelbaum, P., Bayne, S., Carlson, D., Morris, M., Rotas, N., ... Weaver, J. (2014). Toward a posthumanist education. *Journal of Curriculum Theorizing, 30*, 39–55.
- Somerville, M. (2013). *Water in a dry land: Place-learning through art and story*. New York, NY: Routledge.
- Somerville, M. (2014). Developing relational understandings of water through collaboration with indigenous knowledges. *Wiley Interdisciplinary Reviews: Water, 1*, 401–411.
- Somerville, M. (2016). The post-human I: Encountering 'data' in new materialism. *International Journal of Qualitative Studies in Education*. Advance online publication. doi: 10.1080/09518398.2016.1201611
- Spangler, K. (2016, January 16). All Flint's children must be treated as exposed to lead. *Detroit Free Press*. Retrieved from <http://www.freep.com/story/opinion/contributors/raw-data/2016/01/16/map-8657-flints-youngest-children-exposed-lead/78818888/>
- Springgay, S., & Truman, S. E. (2016). Stone walks: Inhuman animacies and queer archives of feeling. *Discourse: Studies in the Cultural Politics of Education*. Advance online publication. doi:10.1080/01596306.2016.1226777
- St. Pierre, E. A. (2011). Post qualitative research: The critique and the coming after. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (4th ed.). (pp. 611–626). Thousand Oaks, CA: Sage.
- St. Pierre, E. A. (2015). Practices for the 'new' in the new empiricisms, the new materialisms, and post qualitative inquiry. In N. K. Denzin & M. D. Giardina (Eds.), *Qualitative inquiry and the politics of research* (pp. 75–95). Walnut Creek, CA: Left Coast Press.
- Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *AMBIO: A Journal of the Human Environment, 36*, 614–621.
- Steffen, W., Grinevald, J., Crutzen, P., & McNeill, J. (2011). The Anthropocene: Conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 369*, 842–867.
- Stengers, I. (2011). *Thinking with Whitehead: A free and wild creation of concepts*. (M. Chase, trans.). Cambridge, MA: Harvard University Press. (Original work published 2002)
- Taylor, C. A. (2013). Objects, bodies and space: Gender and embodied practices of mattering in the classroom. *Gender and Education, 25*, 688–703.
- Taylor, C., & Hughes, C. (Eds.). (2016). *Posthuman research practices in education*. London: Palgrave MacMillan.
- Tesar, M. (2016, April). (Un/named) philosophy as method. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.
- Tesar, M., & Arndt, S. (2016). Vibrancy of childhood things. *Cultural Studies ↔ Critical Methodologies, 16*, 193–200.
- Thrift, N. (2008). *Non-representational theory: Space, politics, affect*. London: Routledge.
- Tuck, E., & McKenzie, M. (2015). Relational validity and the 'where' of inquiry. *Qualitative Inquiry, 21*, 633–638.
- Ulmer, J. (2017a). *Slow inquiry: More-than-methodologies in qualitative research*. Paper presented at the 1st European Congress of Qualitative Inquiry, Leuven, Belgium.
- Ulmer, J. (2017b). Writing slow ontology. *Qualitative Inquiry, 23*, 201–211.
- Vannini, P. (2015a). Non-representational ethnography: New ways of animating lifeworlds. *Cultural geographies, 22*, 317–327.
- Vannini, P. (Ed.). (2015b). *Non-representational methodologies: Re-envisioning research*. New York, NY: Routledge.



Whitehead, A. N. (1978). *Process and reality*. New York, NY: The Free Press.

Wisely, J. (2016, February 17). Flint residents paid America's highest water rates. *Detroit Free Press*. Retrieved from <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/02/16/study-flint-paid-highest-rate-us-water/80461288/>

Wolfe, C. (Ed.). (2003). *Zoontologies: The question of the animal*. Minneapolis, MN: University of Minnesota Press.

Wolfe, C. (2010). *What is posthumanism?*. Minneapolis, MN: University of Minnesota Press.

Wyatt, J., Gale, K., Gannon, S., Davies, B., Denzin, N., & St. Pierre, E. A. (2014). Deleuze and collaborative writing: Responding to/with JKSB'. *Cultural Studies? Critical Methodologies*, 14, 407–416.

## Appendix A

### **Potential example: education and water in Flint, Michigan**

Some might ask how posthuman approaches to research might be adopted in a methodological project. Perhaps they would not (or, at least not in a traditional sense). Instead, taking up posthumanism might begin with thinking differently about research. This work might be theoretical or conceptual; it might also be something else entirely. This is what posthumanism not only allows, but encourages: reconceptualizing our place in the world as we reconceptualize research. We might ask different questions, feel different things, and think different thoughts. We might move from cause and effect to entanglement, interconnection, and flow. This means that at times, the fluidity of posthumanism might be unsettling as it disturbs the comfortable prescription of method. Therefore, the writing that follows is not meant to provide a miniature how-to guide, but to share how posthuman thinking might occur within educational settings.

To illustrate, I briefly take up the recent example of water in Flint, Michigan. The event that has come to be known as 'the Flint water crisis' has significantly affected the local (human) residents who have been subjected to unclean water. Prior to April of 2014, the City of Flint received treated water from Lake Huron until, under the governance of a state-appointed emergency manager, the city began drawing water from the (polluted) Flint River as a cost-savings measure (Egan & Spangler, 2016). Because corrosion-control chemicals were not added to the water, 'that caused lead, which causes brain damage and other health problems in children, to leach into the water from pipes and fixtures' (2016, para. 12). Although residents complained immediately about the appearance, smell, and taste of the water, it was only in January of 2016 that the state declared an emergency. There are an estimated 8,657 children in Flint who are less than six years old (Spangler, 2016), and the effects of being exposed to tainted water may take years to uncover. Yet, as this all too brief description shows, the water crisis in Flint also has affected the environment; public safety and health; governmental policy and politics; the economy; the media; and, as I shall explain, education. Understanding the causes, effects, and implications of the Flint water crisis will need traditional research to measure lead levels in the bloodstreams of residents; study the effectiveness of household water filters in screening out toxins; replace lead pipes and other damaged infrastructure; examine the role of the media in documenting the crisis; and ask difficult questions regarding why the concerns and safety of local residents went unanswered for so long. At the same time, however, the Flint water crisis will also need more than what traditional research methods can provide.

A posthumanist perspective approaches these issues as interconnected. Posthuman scholars studying student achievement in Flint would examine, but move beyond, the numeracy of standardized testing data. They would consider the potential impact of lead on children's bodies and spirits. They would consider how class, race, and geography may have impacted the decisions of policy-makers to (not) respond; they would consider how a housing market already devalued by the loss of the automobile industry prevented people from being able to relocate elsewhere. And how the water smelled, infected skin, caused disease, and created visual images in which children saw brown water stream through their outdoor hoses, kitchen faucets, sinks, toilets, shower heads, and bath tubs day after day after day. And how children's caretakers were paying the highest rates in the nation for water they could not drink (Wisely, 2016); or how families who could not afford sufficient quantities of bottled water were forced to make daily choices about who in their household could have clean water and for what purpose(s) it could be used; or how some families resorted to soda because it was more affordable. And they would consider long-term effects on learning.

And then posthuman scholars would do more. They would think differently to consider the effects of toxic water on rivers, rain, pets, wild animals, plants, and food-producing gardens. Their thoughts would flow as they would think with the water that would accumulate – and be weighted with – lead and other toxins. They would consider how the Flint River came to be polluted through industry waste, sewage, and chlorides from excess salt used to prevent roads from icing, as well as how the same salt that protected school busses during winter commutes would later flow with dirty water through the schools and homes to which students were being transported. They would consider the environmental impact of the extra bottled water being imported into the city: how the plastic bottles that offer clean water will move into landfills, decompose over the next millennium, and contaminate groundwater with chemicals that potentially impair memory and cognition such as bisphenol A (or BPA). They would consider how the privatization and commercialization of water has undermined investments in public water systems (Gleick, 2010). And they would consider how public institutions and safeguards failed as they simultaneously considered how education itself is a public institution.

These are but some of the affects, effects, events, and experiences that standardized testing data, classroom observations, and interviews with students, families, teachers, and school leaders cannot address alone. For generations to come, studies of education in Flint will be inseparable from other aspects of the water crisis. They are entangled. We are entangled as researchers, too, even if some interconnections appear closer than others.