Cripping environmental education: rethinking disability, nature, and interdependent futures

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Abstract

In this article, I call for a cripping of environmental education as a necessary move in shifting away from the field's current conceptions of disability as defect and deficiency, and towards disrupting the structures and processes that operate as normalizing technologies within ableism/sanism. Through an examination of the ways that the field of environmental education has/has not engaged critical disability politics, I illuminate how disability is not often included within environmental education literature. When it is, it is often through the use of disability as metaphor or through recommendations for best practices in accommodating disabilities. More often though within environmental education, disability has operated as a hidden curriculum, underpinning much of the field's curricular, pedagogical, and even philosophical foundations. Through a cripping of the field these compulsory able-bodied/able-minded assumptions are made apparent. I suggest that by centering crip bodies and minds through cripistemologies, we might enable new ways of knowing, being in, connecting to, and understanding the natural world.

On September 24, 2019, CBS News aired a brief segment and posted an online video that shared the recent story of Ryan King, a 10-year-old student who has spina bifida and uses a wheelchair, on a recent field trip she took with her 4th grade class (O'Kane, 2019). The field trip was to the fossil beds of the Falls of Ohio and required traversing rocky terrain to get there. The news story centred on the heroic generosity of a teacher who carried Ryan in a backpack so that she could partake in the field trip with her classmates. In the video, Ryan's mom describes how touched she was by the kindness of the teacher who had volunteered to carry Ryan so that she could participate. Her mother explains that usually on such field trips like this one, which are premised on journeying to inaccessible places, Ryan would have been excluded from participating. She explains that typically, as an alternative to such field trips, the school would have offered Ryan other separate activities, while her classmates attended the field trip.

This *inspirational* narrative of *overcoming* adversity is a common representation of disability (Grue, 2016). Yet, this moment also illuminates one of the many ways in which environmental education and disability collide and rupture, as they are situated as in opposition. In the story about Ryan, her disabled body and the environment are in tension in that access to the environment, which is constituted as experiencing nature outdoors, necessitates a nondisabled body. Barring the rare exception, as in Ryan's case, whereby a teacher is willing to carry you in a backpack, within environmental education having a physical disability means that one may be unable to access the environment, and thus is excluded from curriculum and pedagogical efforts to

connect the learner with nature and the environment. Ryan's experience provides a real-life example of how conceptions of *being in* and *connecting* to nature are often predicated upon nondisabled bodies, and thus prompts environmental education — a field that is largely premised on connecting learners to the environment and nature — to examine the ways in which compulsory able-bodiedness/mindedness is embedded within its philosophical, pedagogical, and curricular foundations.

Using a critical disability studies framework, and crip theory specifically, this article examines the ways that environmental education and its subfields of outdoor education, adventure education, and place-based education, within their conceptual, curricular, and pedagogical approaches, engage disability explicitly, as well as through omission. I begin with a brief discussion of critical disabilities studies, highlighting the emergence and potential of the social model of disability, and specifically crip theory as a particular politic within this model, before briefly examining some of the ways that education in general has taken up critical disability politics. Using crip politics, I then turn to examine the ways that environmental education has/has not engaged disability, illuminating the ways in which the field's current notions of connecting to, being in, and experiencing nature are predicated upon nondisabled bodies and minds. I conclude by gesturing towards the imperative of, and possibilities within, cripping environmental education by centering "cripistemologies" (Johnson & McRuer, 2014) as another way we might approach and come to know nature. Cripping[1] environmental education is not merely about including students with disabilities into existing curriculum and pedagogical approaches, but rather calls upon all educators and scholars to disrupt the ways in which the philosophical foundations of the field rest upon compulsory able-bodied/sane assumptions, which frame disability and madness as failure and inability to connect to and care for nature, as cause of eco-destruction, and as signal and symptom of environmental devastation.

Cripping environmental education includes critically deconstructing our notions of nature as always *out there*, in order to open up routes for new and multiple ways of knowing, being in, connecting to, and experiencing "nature" with disability and madness affirmed, essential, and even "desirable" (Kafer, 2013). To crip environmental education demands that we refuse the current positioning of environmental justice and futures as only possible with the eradication of disability. Cripping environmental education refuses conceptions of disability and ecological justice as antagonistic, while simultaneously envisioning and cultivating a politic that enable eco-futures with crip and mad people and beings as essential.

Brief Overview of Critical Disability Studies in Education

This project relies upon a critical disability studies theoretical framework to reconsider the current pedagogical, curricular, and philosophical foundations that frame the field of environmental education. Critical disability theory emerges out of disability and mad studies[2] to disrupt the medical model of disability and madness by advocating instead for a "social model of disability" (Oliver, 1990). The medical model of madness and disability, also sometimes referred to as "scientific determinism," is premised on binary thinking rooted within a biologically based construction of "normal," which equates anything that is outside of what is considered normal as unnatural and "abnormal" (Baglieri & Knopf, 2004, p. 525). The medical model of disability pathologizes disabled and mad people as defective, and in need of treatment to fix and ideally cure the individual of their abnormalities (Kafer, 2013, p. 5).

Thus, under the medical model, disability and madness are cast as an "undesirable difference, a shameful thing, something to be fixed, cured, or remediated" (Connor & Gabel, 2013, p. 100) in pursuit of normalcy. If an individual fails to attain normalcy through cure, the fault "lies within the flawed individual" who is conceived of as a "burden to their families, educational institutions, and society at large" (Connor & Gabel, 2013, p. 100). Eli Clare (2017) grapples with the lure and

function of cure in an ableist world, and the promises of cure: "cure saves lives; cure manipulates lives; cure prioritizes some lives over others; cure makes profits; cure justifies violence; cure promises resolution to body-mind loss" (2017, p. xvi). Yet, Clare pushes back against the medical model's lure and empty promises of cure in that "cure promises so much, but it will never give us [disabled and mad people] justice" (Clare, 2017, p. 184). This emphasis on a cure "focuses on changing bodies imagined as abnormal and dysfunctional, rather than on the exclusion, the environment, and the barriers" (Garland-Thomson, 2011, p. 28) that result from stigmatization, oppression, and injustice. It is not disabled bodies and mad minds that need curing, it is "ableism—disability oppression, as reflected in high unemployment rates, lack of access, gawking, substandard education, being forced to live in nursing homes and back rooms, being seen as childlike and asexual—that needs changing" (Clare, 2001, p. 260).

The social model in education

Historically, prior to the inclusion movement and the subsequent passing of the American with Disabilities Act (ADA) in 1990, the medical model served as the foundation for how education conceived of disability, and thus framed how schools interacted with and taught students with disabilities (Valle, Connor, & Hale, 2014). The resulting structure of education prior to the ADA was to separate students with disabilities into isolated classrooms, reinforcing a "system that divides humans into two clearly defined groups: the disabled and the non-disabled" (Connor & Gabel, 2013, p. 101). In the 1980s, with the emergence of the inclusion movement, special education practices began to shift, as counternarratives of "separate is not equal" echoed the arguments of the 1960s Civil Rights Movements (Ferri & Connor, 2006).

Around this time, critical disability studies emerged within academia (Linton, 1998, pp. 109–115) and offered several alternative models for understanding disability, most of which built upon an emerging social model of disability, which responded to the oppressive medical model by problematizing its deterministic thinking. The social model of disability seeks to "uncover and eliminate social, cultural, and political barriers that prevent access to employment, academic, recreational, and residential opportunities afforded" to nondisabled people (Baglieri & Knopf, 2004). Thus, the problem of disability is moved from the individual's body/mind to the built environment and structures that create barriers and oppression. It aims to address the systems that are "designed to designate, categorize, and rank bodies and minds as either normative or deviant, as either desirable or disposable," (Altiraifi in Deerinwater, Gibson, Johnson, Altiraifi, & Brown, 2020). For example, under a medical model of disability, a person who uses a wheelchair would be deemed deficient through an impairment that prohibits their ability to walk, with walking being constructed as the *normal* mode of mobility and anything outside this being deemed *abnormal*. Under a social model of disability, the problem does not lay in the individual's corporeal difference, but in the ableist ways that the physical environment is constructed for and by people who walk, which results in stairs being the norm, rather than ramps and elevators. The social model, in effect, de-naturalizes disability and frames it instead as socially constituted (Garland-Thomson, 1997, p. 6). Under this model, disability is defined as dynamic, relational, contingent, and changing over time, rather than absolute, fixed, and static (Garland-Thomson, 1997, p. 13).

From separation to inclusion in education

This critique of the medical model and emphasis on barriers and systems instead of bodies has resulted in an ongoing conversation within schools around which framework to employ when teaching students with disabilities — a segregation approach based upon historical methods of removing students with disabilities into separate classrooms, or an integration method, which provides accommodations that enable the students to remain in traditional classrooms with their peers. The latter, an inclusion model, operates from a social model of disability politic, as it

addresses the structural and systemic barriers that exclude people with disabilities from fully participating in the classroom by providing accommodations. It is no surprise that many critical disability scholars in education have advanced the inclusion model, demonstrating that it is "critically important to creating societies that recognize and embrace human variation" (Baglieri & Knopf, 2004, p. 526).

While many schools, particularly in the wake of the passing of the ADA, have moved towards a model of education that seeks to include students with disabilities into the traditional classroom through accommodation, the social model of disability has yet to fully shift the field and practices of education away from a medical model. Even at its best with full integration into the classroom, much of the discourse of disability in education remains entrenched in a medical model that views disability as *deficit*. In other words, inclusion utilizes a social model of disability through its attention to structural barriers, but the stigmatization and perception that disability is a defect or undesirable difference that must be legitimized and verified through medical documentation endures. By way of accommodations, the structures of education are stretched to include students with disabilities, yet these structures and systems are rarely questioned, and the ways in which disability is culturally constituted and understood as negative deficit, defect, disease, and/or abnormality remains somewhat unchanged within the inclusion model. In order to address the stigmatization and reconstitute disability not as undesirable defect but as *valued* and *essential*, or as Garland–Thomson has described as "inherent in the human condition" and not something that we should desire to eliminate (2012, p. 339), we need more than a social model of inclusion within education. Reconstituting disability as valued difference, not deficiency, is not meant to erase the material and corporeal differences within impairments and different bodies/minds, but rather to prompt recognition of the unrealized potential and possibilities within such differences that are currently marked as deficit. Thus, there is a need to not only break down the barriers to access but also push back against notions of normalcy that deem some bodies as *abnormal, undesirable,* and *disposable.*

Some of this work to reshape and rethink disability is beginning to happen, as critical disability scholars working in education call attention to the ways in which the entire educational system is premised upon disabling practices that privilege a particular way of learning (Christensen, 1996, in Connor & Gabel, 2013, p. 107) and the failures of special education. The traditional model of education in most schools today is premised on assumptions that all "children generally *should* learn the same way and *should* strive to attain the same goals" (Baglieri & Knopf, 2004, p. 526, emphasis added). This educational model privileges particular ways of being, knowing, doing, and thinking. Those who do not adhere or conform to this framework are often deemed disruptive, and marked as deficient and/or disabled (Connor & Gabel, 2013) and segregated into the special education category. This has resulted in some scholars calling for a more critical approach to disability in education, beyond the current rendition of special education, which often masquerades as inclusive practices while hiding the ways that these practices "simply work to (re)secure an invisible centre from which constructions of Otherness and the designation of marginal positions becomes possible" (Graham & Slee, 2008 in Loutzenheiser & Erevelles, 2019, pp. 376–377). Critical race and disability scholars have illuminated that this model of inclusion operates as a normalizing technology for the maintenance of white space by marking certain racialized bodies as unruly and disruptive (Harrington, 2019). Thus, at its core, inclusion of disability within existing educational frameworks functions as a form of neoliberal multicultural incorporation (Duggan, 2003), whereby inclusion of disability becomes about mirroring the norm and flattening difference (Loutzenheiser & Erevelles, 2019, p. 382). Critical disability scholars in education challenge such inclusion practices and special education by reframing disability, not as a deficit, but as a difference that is natural, acceptable, and ordinary (Baglieri & Knopf, 2004). The issue then becomes not just how to integrate students with disabilities into the classroom, but how to dismantle the ableist assumptions built into our entire philosophical foundations of teaching and learning (Erevelles, Grace, & Parekh, 2019).

Potential of crip theory in education

In order to make this shift towards disrupting both the structures and environments that disable, and away from notions of disability as an undesirable deficit, I turn towards a relatively new and developing theory within critical disability studies — crip theory. Crip theory builds upon a social model of disability and employs queer theory's anti-assimilationist politics in order to push back against normalizing mechanisms, which discipline unruly bodies and dispose of those marked as abnormal (Sandahl, 2003). Cripping, as a verb, is a politic and approach to conceptualizing disability that troubles notions of "compulsory able-bodiedness," (McRuer, 2006, p. 1) by "calling attention to everyday practices, and beliefs that are predicated upon this ableist centering of able-bodiedness" (Connor & Gabel, 2013, p. 101). Disability within a crip politic is marked "as a desirably generative and creative relational practice" . . . that troubles "liberal assimilation and inclusion practices" (Hamraie & Fritsch, 2019, p. 2). Crip theory builds from Alison Kafer's (2013) work on "crip time," which traces the ways that compulsory able-bodiedness/able-mindedness coalesces in the service of normativity to mark some bodies as defective, deviant, sick, and open to discrimination. By illuminating the ways compulsory able-bodiedness is embedded within everyday practices, Kafer opens up space for multiple ways of being and knowing (p. 4) that include crip ways of knowing and being or "cripistemologies" (Johnson & McRuer, 2014). Thus, crip theory, in calling attention to the ways that compulsory able-bodiedness/able-mindedness ultimately limits our ways of knowing and being, opens up the possibility for crip ways of knowing and being, and responds to the critique leveraged against the social model by critical disability studies scholars who argue there is an overemphasis on structural barriers and an erasure of the material realities of impairment. These scholars have argued that disability theory should be conceived of as a form of "situated embodied knowledge" which combines both disability as a social construct but also a material reality that shapes individual's ways of being in and knowing the world (Erevelles, 2011; Ferri, 2014). While few educators have taken up crip theory or cripistemologies within the classroom or schools (Connor & Gabel, 2013; Loutzenheiser & Erevelles, 2019), to do so would enable educators to more deeply examine and challenge how ableism is embedded within education and the foundations of learning. This endeavour has the potential: to operate from a systemic perspective that examines structural and environmental barriers; to reveal education as a normalizing project, which marks some bodies and minds as normal and others as abnormal and deficient; and finally, to offer a way to challenge certain ways of knowing and embodiment as privileged.

While education in general grapples with how to crip education, environmental education, which is often an embodied approach to education that is premised on engaging students physically with the environment, the outdoors, and nature outside, is ripe for engaging critical disability frameworks. In order to move towards a cripping of environmental education, the remainder of this project assesses the ways that the curricular, pedagogical, and philosophical foundations of environmental education engage with disability and ableism, often through compulsory able-bodied/minded assumptions. Ultimately, I suggest that in order to move towards cripping environmental education, educators will need to take up *critical* disability politics, and crip theory specifically, in order to examine and challenge the ways that environmental education is currently founded upon notions of being in and knowing nature that centre nondisabled bodies, experiences, and ways of knowing. By instead centering disabled and mad people's ways of knowing and being in relationship to nature through cripistemologies, a crip environmental education approach disrupts the compulsory able-bodiedness within the field and enables new ways of knowing and connecting to nature.

Environmental Education's Past Engagement with Disability

There is very little environmental education scholarship that operates from a *critical* disability studies framework and only a few areas where environmental educators have explicitly engaged with disability more generally, often emanating from outdoor education, a subfield of

environmental education. Much of the environmental education scholarship that explicitly addresses disability, emerged in the wake of the passing of the Americans with Disabilities Act in 1990, which called upon educational programmes to end discriminatory practices on the basis of disability or perceived disability. As a result, the existing literature that engages disability in outdoor education and environmental education falls within four thematic areas: highlighting the convenient overlap between disability and environmental/outdoor education, identifying and advancing best practices for inclusion, marking disability and madness as the cause of human/nature disconnection, and constructing nature as *out there*.

The convenient *overlap between disability and environmental education*

The early scholarship in the field pertaining to disability attests to the benefits of inclusion of people with disabilities into outdoor and environmental education, operating from a stance that such inclusion benefits either people with disabilities and/or all learners (Dillenschneider, 2007; Farnham & Mutrie, 1997; Gilley, Atchison, Feig, & Stokes, 2015; Stokes, Feig, Atchison, & Gilley, 2019; R. A. Wilson, 1994). This research was at times premised on there being a mutually beneficial approach to outdoor/environmental education and special education (R. A. Wilson, 1994) or that inclusive education benefited all students (Gilley et al., 2015; Stokes et al., 2019). Some of this research came out of the recent push for Universal Design for Learning that aims to create a better learning environment for all students, by considering the needs of students with disabilities (Gilley et al., 2015; Stokes et al., 2019).

Other research within environmental education operates from a deficit model, which suggests students with disabilities are less intelligent than nondisabled students. For example, one argument that environmental and outdoor education is beneficial to disabled learners was made on the basis that the nontraditional learning environments and pedagogical approaches couched in "outdoor activities usually *level out* a group as the *stronger members* may not necessarily be better than others at activities like rock climbing, which require balance and agility" (Farnham & Mutrie, 1997, p. 31, emphasis in original). Thus, in an unfamiliar learning environment, knowledge and ways of approaching learning that are centred in the traditional classroom may not work in an outdoor education setting, thereby destabilizing the hierarchy of knowledge within conventional educational spaces and possibly privileging disabled learners. Wilson's (1994) work made arguments for integrating outdoor/environmental education into special education, as the method of instruction in both includes a variety of direct learning experiences and hands on learning (p. 156) as compared to traditional classroom approaches that centre on rigorous intellectual ways of learning and knowing. Wilson advocates for integrating outdoor education into special education curriculum since students with disabilities might benefit from educational approaches that are more holistic, less fragmented, and in a nontraditional learning setting. While many would agree with part of Wilson's premise that outdoor/environmental education and special education can be mutually beneficial since both take a more *holistic* approach to learning, rejecting traditional schooling as fragmented and compartmentalized, Wilson's argument is still rooted in a deficit model of disability that seems to conceive of environmental and outdoor education as less intellectual, and therefore more apt to the needs of students with disabilities (p. 156). Yet, it is hard not to hear this rationale as the echoes of past educators and scholars who championed the theory that low-income students and students of colour are best suited to vocational and trade education due to the hands-on nature of this education. This is not to negate the value and importance of such education, but in a society that continually demeans and casts such work and knowledge as insignificant and simple, the assumption that there is an inherent connection between working class, of colour, or in this case, disabled students and such education, knowledge, and ultimately labour, cultivates realities whereby these communities themselves are deemed negligible and disposable.

Within this literature that seeks to advance access and inclusion for disabled learners, some of the research has done so by positioning the presence of students with disabilities as potentially detrimental to the learning environment in order to prove that there is no negative effect. A study published in the *Therapeutic Recreation Journal* (Schleien, Hornfeldt, & McAvoy, 1994) examined the learning of nondisabled students in outdoor educational contexts alongside students with disabilities to assess whether the presence of learners with developmental disabilities would have a *detrimental* effect on the learning of the nondisabled students. While the motivation for the research was to provide evidence against the all too common (albeit ableist and problematic) question of "What impact will the inclusion of students with developmental disabilities in general education classes, generic recreation programmes, and *regular* environmental/outdoor education environments have on the learning process of peers without disabilities?" (Schleien et al., 1994, p. 2, emphasis added), the premise behind such a research question is inherently ableist and founded upon compulsory able-bodiedness. By asking how the presence of students with disabilities will or will not negatively impact or harm the learning of nondisabled students, the research ultimately entertains the notion that students with disabilities are deficient and a potentially harmful contamination/contagion that puts other students at risk as a valid question. Not to mention that such a research question refuses to recognize the intrinsic humanity and value of all students with disabilities and their rights to a fair, equitable, and accessible education.

Best practices for inclusive education in environmental education

Much of the more recent research and scholarship on disability and environmental education advocates for the inclusion of people with disabilities and outlines best practices. While not within environmental education explicitly, Stokes et al. (2019) promote the inclusion of people with disabilities into the geosciences, through the design of coursework that can accommodate a variety of physical, sensory, and cognitive disabilities. The authors build upon the work of Hall and Healey (2005) who surveyed disabled undergraduate students to gather insights into the barriers to fieldwork, which found that there were four main areas that presented as barriers for students with disabilities:

(1) physical mobility and negotiation of fieldwork sites; (2) removal of the student from familiar environments and support structures; (3) the need to make significant adjustments to everyday activities in the field; and (4) issues relating to reading, note-taking, and organization required for individual fieldwork (Stokes et al., 2019, p. 1810).

In order to address these barriers, the authors outline some recommendations on how to design and deliver accessible geoscience fieldwork (Stokes et al., 2019, p. 1815) that emphasize inclusion using a Universal Design for Learning (UDL) framework. UDL stresses that educators shift from accommodating individuals with disabilities in the classrooms towards reworking their entire instruction to teach in ways that challenge while supporting *all* learners by "providing flexible and varied avenues to success" (Novak, 2016, p. 14). This is an impactful effort in it shifts thinking away from deficit models but does not go so far as to radically reconceptualize disability to be value added difference. Instead, it operates more as a multicultural inclusion model that seeks to incorporate and accept students with disabilities into existing educational classrooms, but in a way that often inadvertently erases such differences, rather than acknowledging, affirming, and centering disabled and mad experiences and ways of knowing.

People often associate environmental sciences, studies, and education with remote, unpopulated outdoor spaces, such as in wilderness and national forests. Like Ryan who would have otherwise been excluded from her class field trip, these outdoor places are also often quite inaccessible for people with disabilities. Recognizing the potential within *urban* environmental education spaces, Aguilar, McCann, and Liddicoat (2017) highlight the potential for environmental education within urban spaces, such as parks, backyards, community centres, gardens, and restorations sites, to enable an accessible environmental education for people of all abilities and backgrounds

(p. 197). Outdoor environmental education in urban spaces is positioned as inherently more accessible and inclusive of people with disabilities due to the built environment (e.g., paved paths and ADA compliant spaces) within urban spaces. This approach also addresses some of the barriers to fieldwork outlined above by Stokes et al. (2019) in that urban environmental education allows students (presumably students living in urban spaces) to remain in more familiar places and connected to support structures, while also creating avenues for students to meaningfully engage in environmental work that may be closer to their everyday lives and experiences (p. 197).

With the emergence of the inclusion movement and an emphasis on universal design for learning, research has sought to advance inclusion into outdoor education and environmental education through accommodations and cultivating a more welcoming environment (Dillenschneider, 2007), by providing educators with tools and adaptive technologies that ultimately place the decision to participate, and on what level, with the actual learner (p. 80). Such efforts to create more inclusive learning spaces by expanding traditional learning environments to accommodate students with disabilities is an important move, in that it moves away from a segregationist framework. However, such inclusion efforts do not go so far as to centre the disabled and mad learner within the learning process. Such transformation is essential to moving away from a medical model of disability that sees difference as defect, and towards a social model, and ultimately crip politic within environmental education. Yet, given the limited research that engages critical disability studies and environmental education, there are many gaps and places for additional research that centres the experiences and *desires* of students with disabilities.

Disability and madness as cause of human/nature disconnection

While disability is not often explicitly engaged by environmental education, with the exception of best practices for accommodation and inclusion as detailed above, this does not mean that it is not present in other areas of the curriculum and pedagogy. Given the connections between science, environmental studies, and ecology with environmental education, how these fields story the ensuing climate change and environmental destruction is paramount. In light of the ways that environmental sciences and politics at times deploy ableist rhetoric to mark environmental destruction (e.g., corporeal differences within more-than-human species as signalling embodied disaster) or argue that accessibility is ecologically destructive (e.g., wheelchair access in the wilderness), this project shifts now towards environmental education and the ways the field marks human/nature disconnection and environmental destruction. Using a critical disability studies lens to examine this discourse reveals that environmental education too at times deploys discourses of disability as the cause of ecological disaster.

As many environmental educators seek ways to connect learners to nature and the environment — as an ecological imperative — scholars often assess and attempt to identify the reasons for why students are seemingly disconnected from nature, place, and the more-than-human, despite the fact that whether we recognize it or not, humans (co)exist with and are (co)constituted through these beings/entities (O'Gorman & Gaynor, 2020). Environmental educators and scholars, and particularly eco-feminist educators, often locate the roots of our current environmental apathy and disconnection from nature within hegemonic Western philosophical and/or conceptual understandings of nature, which are premised on binary thinking that positions humans as separate from and superior to nature (Gaard, 1997; Mies & Shiva, 2014; Plumwood, 2002). While this assessment in itself is not a problem, how environmental educators and scholars story this disconnection as rooted in disability — as deficiencies or defects — relies upon ableism. There is a range of ways that this occurs within the scholarship, from using the language of being "blind" or "deaf" to the surrounding natural world (Jickling, Blenkinsop, Timmerman, & Sitka-Sage, 2018, p. 39), to claims that disabilities such as autism create the fragmented thinking that underpins Western philosophies and human/nature disconnections (Bai, 2009; Deloria & Wildcat, 2001; Dickinson, 2014; Shepard, 1998), and finally to creating new disabilities, such as nature-deficit

disorder (Louv, 2008) as the underlying cause for a learner's inability to connect to nature and the environment. These tropes within environmental education may appear to be quite benign; however, upon further examination of the discourses reveals that this project is not just an explication of political incorrectness, but that ableist discourses have been foundational to environmental education's philosophical and conceptual framework. Such findings illuminate how compulsory able-bodiedness/mindedness, as a hidden curriculum (Erevelles et al., 2019), is embedded within the foundations of environmental education, and has implications for then what an ecologically-just future entails — who is a part of this future and who must be cured or eradicated — in order to realize this future.

Use of ableist conceptions of corporal differences often operate as a metaphor for the ways in which Western humans are unable to connect to the environment and *natural* world that surrounds them. It is common for scholars to describe such disconnections as metaphorically being akin to being "blind" or "deaf" to their natural surroundings (Bai, 2009, p. 136). Wandersee and Schussler (1999) created the concept of "plant blindness," widely popular and cited among science and environmental educators (Amprazis & Papadopoulou, 2020; Frisch, Unwin, & Saunders, 2010; Hoekstra, 2000; Jose, Wu, & Kamoun, 2019; Krosnick, Baker, & Moore, 2018), as the inability to see plants and recognize their importance ecologically, even going so far as to name "symptoms" of plant blindness (p. 84). A few scholars have noted how these metaphors are problematic and ableist (McDonough MacKenzie et al., 2019; Parsley, 2020) as they position disability as inability and deficit — as the cause of such disconnection — and ultimately suggests that the only way to connect with the natural world is to be a seeing or hearing person. Yet, this discourse also is not just a metaphor, it is also literal in that within environmental education, the ways that the field currently conceives of connecting with nature is often also literally through hearing and seeing, evident for example in the trendy "walking pedagogies" (Feinberg, 2016) and many other place-based pedagogical approaches. This use of disabilities as metaphor does not position disability as a valuable, essential, meaningful attribute, or as new ways of connecting, but rather as a problem, deficiency, and lack — it is "a *troubling* deafness" (Jickling et al., 2018, p. 39, emphasis added) that is the root cause of disconnection. With seeing and hearing the surrounding natural world constituted as key to care for the environment, it is then such deafness and blindness that is enabling ecological destruction. Disabled bodies are framed as an underlying cause to environmental destruction. Such rhetorical use of disability within environmental education operates as a form of compulsory able-bodiedness/mindedness in that it centres nondisabled bodies/minds as normal, natural, and in this case also ecologically connected; and thus, the desired corporal formation within environmental education. The logic is then that without a hearing or seeing body, a person will remain disconnected from and arguably apathetic at best and destructive at worst, to their environmental surroundings. Ultimately, through these discourses, disabled bodies are fashioned as unable to connect to, care for, and attend to the natural environment and surroundings, thereby reinforcing a separation between nature and culture and enabling ongoing environmental destruction. As a rhetorical device, environmental educators and scholars do not explicitly suggest that thus we must eradicate such disabilities, but rather it is implied that one must be cured of their disabilities so that they are no longer deaf and blind — and thus no longer disconnected or causing destruction.

This compulsory able-bodiedness/able-mindedness within environmental education operates beyond the realm of physical corporeal difference like deafness and visual impairments, extending into cognitive and psychological differences, or what critical disabilities scholars and activists call "madness," as a an "alternative to 'mental illness' or 'disorder'" (Menzies, LeFrançois, & Reaume, 2013, p. 10). Within mad studies, madness is a reclaimed term that functions as both self-identification and as a site for analysing the ways that the concept has been constituted (Beresford, 2019; Menzies et al., 2013; Pickens, 2019) in an effort towards: "rejecting clinical labels that pathologize and degrade; challenging the reductionist assumptions and effects of the medical model; [and] locating psychiatry and its human subjects within wider historical, institutional, and

cultural contexts" (Menzies et al., 2013, p. 10). Within environmental education, ableist and sanist discourses of madness operate as an additional metaphor for the problems brought forth by Western colonial conceptions of nature, and the resulting fragmentation, disconnection, and domination Western humans exhibit towards the environment. It is not just disabled bodies (deafness and blindness) that keep Western humans from seeing and hearing the natural world, rather some environmental philosophers and education scholars position cognitive disabilities such as autism (Bai, 2009), schizophrenia (Deloria & Wildcat, 2001; Dickinson, 2014), or general "madness" (Shepard, 1998) as the cause and basis for Western epistemology's fragmented understanding of nature and the subsequent disconnection of humans from this natural world. For example, Bai (2009), in an effort to illuminate the need for humans to re-animate our beings and the world around us, uses madness, specifically autism, as a stand-in for the current *problem*, relying upon medicalized and psychiatric language and notions of madness as a deficit and defect. Bai's work parallel's the premise of Paul Shepard's popular text *Nature and Madness,* which argued that modern Western society is psychologically defective due to immature adult development, and it is this resulting "madness" that is causing environmental destruction. Similarly, Dickinson (2014) in an article entitled "Ecocultural Schizophrenia: Dialectical Environmental Discourses and Practice" also uses ableist, and specifically sanist, metaphors to describe the ways that environmental discourses and practices often consist of contradictory messages, enabling "ecocultural schizophrenia, a condition" which she describes as "decreasing connectivity and sustainability" (p. 612). While Dickinson problematizes this metaphor, even noting that "in a world suspicious of mental illness" (p. 613) such a metaphor can be problematic, she fails to acknowledge the ways that the metaphor frames schizophrenia, a disability, as a *problem* that is creating the disconnection between humans and nature, and ultimately impeding efforts towards sustainability. Like Shepard and Dickinson, Bai pinpoints much of the issue created by Western thinking as rooted in *Cartesian dualism*, which I do not dispute. It becomes a form of sanist rhetoric though when Bai entitles the section "Descartes' Autism" (2009, p. 136) and positions Descartes as having autism, suggesting that it is this condition — autism — that has caused the destructive fragmented thinking that disconnects the mind from the material, as the root of this problem. This designation of the fragmentation (and the basis of the entire argument) as a consequence of autism, frames autism, a cognitive disability, as a problem, a deficiency, and a negative form of (sociopolitical) cognitive difference. Furthermore, since it is autism (Descartes' autism specifically) that has resulted in this fragmented thinking, and it is the fragmented thinking that has resulted in our current ecological crisis and human disconnection from nature and the environment, then autism is ultimately the root cause of this environmental devastation and ecological crisis. While I imagine the author was only trying to draw parallels between fragmented thinking to an alleged experience of autism, and not actually meaning to suggest that Descartes was autistic nor to invoke such ableist tropes that autism is the cause of environmental destruction, the reality is that such scholarship still relies upon a psychologized and medicalized model of disability that conceives of madness (in this case autism) as a defect, deficiency, medical disease, and illness located in the mind that is to be treated, if not cured through medical procedures (for the sake of the future of the planet). Positioning autism/madness as the root cause of Western dualistic and fragmented frameworks ultimately erases the ways that ableism is not the cause of Western frameworks, but rather a product of it, as Western ways of thinking created hierarchical binaries of abnormal/normal and natural/unnatural (Foucault, 2003; Hughes, 2012; Martusewicz, Edmundson & Lupinacci, 2021, p. 57). Blaming such problematic frameworks on madness as the cause, rather than a product, operates as a masquerade hiding the real systems behind Western dualistic thinking — ableism, sanism, white supremacy, colonialism, and heteropatriarchy. Thus, autism, or disability/madness generally, is not the problem, ableism, whose genealogy is intertwined with Western colonial, white supremacist, and heteropatriarchal histories, is and it is this that is at the root of human supremacy over the natural world and ensuing environmental devastation.

These conceptualizations of disability and madness advance a medical model of disability, which pathologizes disabled and mad people as defective, and in need of treatment to fix the person and cure them of any *abnormalities* and *deviations* from normal. It positions disability and madness as undesirable difference that at "best" is an impediment to connecting to nature, and at worst, is the underlying cause of ecological crisis and destruction. By marking disability as what creates the problem in how we currently conceive of the world, environmental educators and scholars reinforce that the only way to reanimate, re-enchant, and reconnect to the world around us and to create sustainable futures, is through either having a nondisabled body or by eradicating disability and madness all together.

Akin to Bai's conception of disability as the cause of environmental disconnection and ultimately destruction, a recent theory put forth by Richard Louv (2008), in his popular press book's *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder,* suggests that kids today may be experiencing nature-deficit disorder (NDD). Louv's *diagnosis* is that children have far less unstructured play and that physical activity is at its lowest. He argues that much of spontaneous outdoor play has been reduced and forbidden due to a number of factors including suburbanization, regulation of natural spaces, parental concerns about risks related to outdoor play, technological advances, and development in general. Louv acknowledges that NDD is not actually a medical diagnosis, but states that he is using it as a metaphor to investigate child-nature disconnection and relates it to attention-deficit disorder (ADHD). Here again, madness is framed as the culprit behind our inability to connect with nature. Even though he is not actually rooted in a medical or psychological framework, in that this is not a real diagnosis, Louv, in relating it to ADHD, also suggests that by overcoming NDD and seeking out more connection to nature, children may also be able to overcome ADHD, or at least alleviate symptoms, and hails the work of environmental education as helping children to make this connection (Louv, 2008, p. 208).

Since publication of the first edition in 2005, Louv's notion of nature-deficit disorder has been taken up by many, as a topic of discussion within paediatrics (Lindgren, 2010), as well as a challenge for environmental educators and educators in general to address (see for example: Dunn, 2016; Keillor, 2015; Kuo, 2013; Osborne, 2012; Raney, 2017; Sandry, 2013; Voiland, 2008). Dickinson (2013) illuminates how Louv's cry to return to a prior time in the U.S. imaginary, whereby wilderness was pristine and nature was wild, relies upon "fall-recovery" that erases nature and the wild as social constructions, and ignores the ways that much of the current problem is predicated upon Western, colonial, capitalist industry and ways of being that seek to dominate and reign over nature and not see one's self as a part of it. While Dickinson aptly points out Louv's "misdiagnosis" of the problem, they do not go so far as to call attention to the ways that Louv too is constructing (literally) disability/madness (a deficit disorder) as the problem that is prohibiting humans from connecting with and ultimately supporting nature and the environment.

Again, disability is caste as the culprit within modern Western ways of thinking and being, as it is framed as hindering youth from connecting to, building relationships with, and being accountable to the natural environment. However, unlike other scholars and educators who have positioned a nondisabled body or curing disability as the solution to connecting with nature or addressing fragmented thinking, Louv's nature-deficit disorder is premised on nature itself curing disability. Thus, by kids (in this case) spending time outside in unstructured play, they will be cured of NDD and as Louv suggests possibly also ADHD too. Some educators and scholars have expanded upon Louv's notion of NDD as connected to ADHD, arguing that kids with ADHD who are exposed to a 20-minute walk outside were better able to concentrate afterward (Taylor & Kuo, 2009). While I do not dispute that walks, or other less structured activities in place, may help students attend to and concentrate in the classroom, the issue is rather that there is a misdiagnosis of the problem. The problem is not the ADHD, or disability and madness generally, it is the ways in which the entire educational system is structured.

Situating disability as possibly cured or at least alleviated/rehabilitated through experiences within nature is not a new supposition. Rather it echoes prior environmental education research,

which suggested that environmental education might be best suited for people with disabilities as it can lesson disabilities, such as Wilson and Christensen (2012) who suggested that experiences in nature may alleviate disabled individuals' depression. Or that depression and madness in individuals is lessoned through experiences in nature in the outdoors (Frances, 2006; Townsend, 2006). While this connection is arguably *less* ableist in that it does not imply that disability causes environmental disconnection and destruction, it does perpetuate a notion that disability is obviously undesirable and an ailment to be cured or diminished so that students can (1) connect with the natural surroundings, or (2) be better students (i.e., concentrate and be attentive) in the traditional classroom. These constructions of madness and disability leave little, if any, room for disability to be a natural and normal experience, let alone the possibility that disability could be desirable and/or offer new ways of seeing, hearing, experiencing, being, and moving, cultivating new connections to the surrounding world. Ultimately, if disability and madness either cause environmental destruction or it is cured through experiences in the outdoor environment, then disability is once again positioned as incompatible with ecologically just futures.

Notions of nature as always "out there"

How nature is constructed is another way that environmental education, and environmental discourses generally, has operated upon compulsory able-bodied/sanist logics. Within environmental education there has been a recent push to re-animate, re-conceptualize, re-story, (re)member, and re-enchant the environment and the ways that humans are intricately a part of this conceptualization (McKenzie, Hart, Bai, & Jickling, 2009), thereby destabilizing the nature/culture binary. Acknowledging the ways in which humans and the more-than-human are and have always been interdependent and connected, demonstrates how our notion of nature is in itself a socio-historical construction (Cronon, 1996). This move to deconstruct the nature/culture binary is an important shift for environmental educators to make towards cripping environmental education, as it is in such binaries that arguments against creating access for people with disabilities rest, as it would destroy the pristine environment. Starting from a place of acknowledging that notions of nature are constructed, breaks apart the separation between built and natural environments. Kafer (2013) illuminates how the natural is also built "literally so in the case of trails and dams, metaphorically so in the sense of cultural constructions and deployments of 'nature,' 'natural,' and 'the environment'" (p. 129). In addition to acknowledging the natural environment as built, many environmental education scholars are calling attention to nature as not just located within National Parks and wilderness, but also all around us, including the abandoned lots and the alleys in urban spaces (Aguilar et al., 2017; Marris, 2013).

Yet, this environmental education, even that which recognizes and resists the culture/nature divide as a ruse, continues to rely upon a construction of nature as "out there." As some curricular approaches within environmental education turn towards recognition of the nature in everyday places, within both built human inhabited places like cities, and built natural spaces like wilderness (Marris, 2013), most of these approaches continue to rely on a construction of nature that is located literally in the outdoors, thereby necessitating particular forms of nondisabled mobility in order to access it. This focus on connecting the learner with a nature constructed beyond the walls of a typical classroom, evident in the recent and popular "walking pedagogies" (Feinberg, 2016) is premised upon particular able-bodied/able-minded ways of being in nature that necessitate a nondisabled body. While environmental education moves towards approaches that challenge the nature/culture binary, its pedagogical approach often remains premised on compulsory able-bodied/able-minded ways of being in this reconstructed nature.

This compulsory able-bodiedness/mindedness within discourses of embodied experiences in nature is not new, as many environmental scholars, writers, and educators have depended upon particular bodily interactions with nature, such as walking through forests, wading through streams, gazing upon meadows, or hearing the songs of birds. This embodiment not only

necessitates a nondisabled body but also by situating nature as out there, it continues to rest upon a culture/nature divide, albeit different. This divide accepts that the rivers are not pristine and untouched, that the flowers growing through the cracks in the concrete lot are invasive plants, and that forests are a monocrop that were planted only to be harvested. Yet in this nature/culture divide, an individual still accesses this "out there" nature through a nondisabled body that wanders along the river, smells the flowers, and gazes through the forest. Through embodiment, nature albeit impure and clearly touched, is reconsolidated as still separate from humans, still in some senses out there, eclipsing the often more accessible forms of nature, like that which Kafer (2013) illuminates in her incisive reading of A.M. Bagg's video thesis that prompts questions as to why the water that runs through the pipes and out the faucet, is somehow different from the water in the streams and rivers (pp. 144–145)?

How students learn about nature is also a lesson about embodied learning, or as Fawcett (2000) writes, "How our bodies are taught and learn how to sense nature certainly makes a difference to how we know nature" (p. 139). For environmental education, at this point, this nature is only to be taught and known through nondisabled engagement. Thus, shifting towards an crip politic, environmental educators might consider building upon the work of critical disability scholars who call attention to the ways that disability is both socially constructed as well as material — "a situated embodied knowledge" (Ferri, 2014) — to ask how centering such disabled and mad ways of knowing, being, and doing within environmental education might radically alter and expand our understanding of environments and nature. Some of this type of embodied learning is already taking place within environmental education, particularly frameworks built upon an eco-psychological understanding (Dickinson, 2013). Dickinson discusses an example of this learning as premised on resisting the need to immediately name nature. She describes how encouraging learners to get to know the nature through sensory learning by asking "'How does it feel?' 'How does it talk?' 'How does it see?' 'How does it smell?' and 'What is it like?'" (p. 331) might be a starting point for new ways of coming to know nature. Yet given that all these questions are rooted in a sensory experience, expanding this framework towards a crip environmental education would insist that sensory experiences and abilities would differ, and no right answer exists.

Conclusion: Enacting Crip Politics within Environmental Education

Whether intentional or not, compulsory able-bodiedness/mindedness has been foundational to environmental education in the ways that the field conceives of access and connection to nature, and who is envisioned as part of the creation of a more sustainable and ecologically just world. While there has been little overt engagement with critical disability studies within the field of environmental education, disability, and madness are ever present even in the silences and omissions, as a hidden or meta curriculum (Erevelles et al., 2019), informing conceptions of nature as *out there*, regulating how bodies should engage with the environment (i.e., walking, seeing, and hearing) and thus what types of bodies are required for such engagement, and as a *diagnosis* of the current problems with Western human society that has resulted in ecological disconnection and destruction. In its current rendition, environmental education functions through compulsory able-bodiedness/mindedness and (knowing or unknowingly) envisions a path towards ecological connection and futures that are premised on a eugenics-adjacent erasure and eradication of madness and disability. As both everywhere, and also imperceptible, it is vital for environmental education to take up a critical disability studies framework — to crip environmental education — to create more access, and also in order to open up new ways of being, knowing, seeing, moving, hearing, and sensing the world around us. Lloro-Bidart (2015) who critically reflected upon an experience of taking in a feral differently able bodied kitten was prompted to reconsider prior notions of disability as not equivalent to suffering, but rather as culturally constituted (akin to

the social model of disability). Through the experience, Lloro-Bidart questions "how the kitten might 'embody' a way of thinking, feeling, and being 'cat' that while unfamiliar to me [Lloro-Bidart], had value, purpose, and joy" (Lloro-Bidart, 2015, p. 97). Like Lloro-Bidart's critical reflection and inquiry into how crip bodies might feel, think, and be, to centre mad and crip ways of knowing and being within environmental education curriculum and instruction has the potential to radically alter and expand our current understandings and knowledge of the natural world.

Circling back to the moment I opened this article with, to consider what a crip environmental education might enable, I contemplate the story of Ryan. To examine and learn about the fossil beds of the falls by actually travelling to the beds and witnessing them firsthand is no doubt an impactful way of learning about the place. Yet, I cannot help but wonder what other nature and environmental histories that are more accessible may exist but remain overlooked as we continue to approach environmental education in particular ways. It reminds me of a pedagogical experience I had as a graduate student in an environmental education course. The exercise was to individually go *outside* the campus building and traverse through our familiar and quotidian spaces, this time being more attentive to the natural world that surrounds us. This is an impactful activity that calls upon students to be more mindful of the nature that is not just in National Parks and Forests, but even in the green spaces on campuses, or the manicured landscapes between buildings. However, as a person with invisible disabilities, leaving the physical building to wander for 30 minutes was not possible on this day. Not wanting to disrupt the class activity by calling attention to the compulsory able-bodiedness and assumptions built into the exercise nor *out* myself, I decided to wander inside the campus building noting the "nature" within. Breaking apart the binary between nature as *out there* as "natural" and culture as built and separate from it, I attended to the many living plants and even trees that grew inside this campus building. I gazed at the artwork on the walls depicting landscapes of the surrounding farming region. I traced the grain of the wood that was once trees that now served as the desks, tabletops, and handrails. I ran my fingers across the rectangle bricks that stood as walls and slid my feet across the concrete floors, pondering the journeys of the rock and sand that was once nature *out there* as it became the nature that is now *in here*. Did it come from the local rock crushing operations that *slowly* chip millennia from the hillsides to feed our unending appetites for development? Were the trees that are now desk and tabletops from old growth forests or forests grown as monocrops to be harvested? Do the trees that grow inside this building, cared for by a botanist faculty member, *feel* different than the trees outside? How might rethinking the compulsory able-bodiedness/sanist activities that continue to reinforce notions of nature as separate from humans and as needing certain bodies and minds to access and connect with it, open up new ways of understanding nature and our relationships to it? How might rethinking such activities as Ryan's field trip or my environmental education class exercise outside create new space for knowledge, ways of knowing, and being connected to and in-relationship with nature, for not just learners with physical disabilities, with invisible disabilities, mad learners, fat learners, learners with asthma, learners with seasonal allergies or bee allergies, but actually all learners?

To crip environmental education requires not just accommodation and inclusion, but centering crip bodies and minds through cripistemologies. Echoing disability studies in education scholars who are calling for education to shift away from the current renditions of special education and towards a more critical framework, cripping environmental education necessitates a renewed understanding of disability and madness as both material and social, which re-imagines how we might help learners connect to, and build awareness and concern for, the environment and world all around us in ways that are not premised on compulsory able-bodiedness/mindedness. By centering disabled bodies and minds, this would be a very practical approach to cripping environmental education. Yet, this is not just about inclusion through accommodation, which is where most of the current research resides. Rather this approach requires radically rethinking our notions of nature, embodiment in nature, and the eco-futures imagined. Within environmental education, this would enable a better understanding of disabled embodied knowledge of/in nature, in ways that would not just bring disability into the conversation more fully, but also offer

fundamentally new conceptions of nature and environment, thereby *cripping* our notions of the environment.

Notes

1 'Crip,' much like the verb meaning of 'queer,' is a disruptive, destabilising, and anti-assimilationist politic and position focused on challenging and resisting compulsory able-bodiedness/mindedness.

2 There is a dynamic history between disability studies and mad studies. Previously, madness had been subsumed under, and considered to be captured by, the field of disability studies. However, given the privileging of physical disabilities within disability studies and the resulting erasure of often invisible differences classified by psychiatric fields (such as cognitive disabilities and mental "illnesses"), mad studies has emerged as a frame of inquiry that challenges "the conventional biological paradigm of 'mental illness'; exposing the systemic and symbolic violence that lie at the core of the psychiatric system" (Menzies et al., 2013, p. 3). Mad studies examines the socio-historical constitution of madness through an anti-psychiatry lens. For the purposes of my article, I approach madness as a disability that is a part of critical disability politics, but also as a distinct category of disability in order to illuminate the particularities of physical disabilities and madness.

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