

ARTICLE

# Collectively engaging with theory in environmental education research

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(Received 03 October 2018; revised 16 November 2019; accepted 06 January 2020; first published online 18 February 2020)

## Abstract

In this article, we collectively explore the significance of engaging with theory in environmental education research. Inspired by Jackson and Mazzei's (2011) postqualitative research methodology, each researcher provides a short sample of engaging with his/her chosen theoretical concept for one shared data source. Through our three individual theoretical engagements with a short video, we collectively demonstrate that the data may be enacted in different ways, based on the theoretical concept that is engaged. This may potentially actualise multiple different and partial realities of the researched, and by decentring the researcher, this can also rework humanist epistemologies. We suggest that non-researcher-centred and/or non-anthropocentric actualising may contribute to more sustainable relationships in environmental education and its research, not only between the researcher and the researched, but also among the researchers.

**Keywords:** Postqualitative research; collective research methodology; sustainable research relationships; environmental activism

Environmental education research is an active process of social change (Lotz-Sisitka, 2004) and finds its purpose in critiquing the dominant social paradigms that lead to unsustainability (Hart, 2013). But such paradigms can permeate many social fields (Foucault, 1994), and thus they potentially exist within environmental education research. In order to prevent the socio-ecological problems we research from being potentially reproduced through our own research practices, creative methodologies that challenge standardised textbook research methods may have an important role to play in enabling us to contribute to less researcher-centred and less anthropocentric worlds (Weaver & Snaza, 2017). Inspired by the recent movement of postqualitative research (e.g., Jackson & Mazzei, 2011; St. Pierre, 2013a, 2013b), in this article we explore a collective research methodology that aims to rework our knowing in the context of contemporary environmental education research. Our primary purpose was originally to investigate the relationships enacted between the researcher and the researched. However, through our exploration, we have found that working respectfully with colleagues across quite distinct epistemologies poses additional challenges. Thus, in the final section, we also consider the relationships enacted among ourselves, the researchers. This brief consideration offers important insights for collaborating not just across disciplines, but also across epistemological and/or ontological differences.

One way to ecologise the relationships between the researcher and the researched is to consider the likely onto-epistemic condition that the researcher (subject) does not have full access to the researched (object; Morton, 2013). In other words, the researched 'known' is always haunted by its elusive silences and absences that we cannot know (Payne, 2016). We argue that it is with such

intellectual modesty that a more symmetrically sustainable relationship between the researcher and the researched is possible.

To problematise the act of knowing, in this article we each engage with what could be considered the ‘same’ data (a 25-minute YouTube video of a young American environmental activist, Kelsey Juliana), but we each do so by engaging different theoretical concepts. This is in order to deconstruct the ‘sameness’ that the data allegedly ‘represents’. The engagements provided are short samples, due to space limitations. Through our three individual engagements with the video, we collectively demonstrate that different theoretical concepts can potentially actualise different realities of the researched, without claiming to access and to represent the virtual of the researched in full (Deleuze & Guattari, 1987). Colebrook (2002) succinctly summarises the virtual as *the* reality that is ‘an open totality or whole, never fully given or completed’ (p. 1), whereas the actual is *a* reality that is enacted (or actualised) as part of the virtual. In short, our collective methodology actualises multiple realities and keeps the virtual open and dynamic. This partially de-centres the researcher, and thus the human in our environmental education research epistemologies, by demonstrating the partiality of each account.

### Collective postqualitative methodology

The basis of our collective methodological framing is ‘epistemologies of doubt’ (Philippopoulos-Mihalopoulos, 2015). This approach counters anthropocentrism by problematising the assumed human capacity for (fully) knowing and thus argues for epistemological modesty. In the still dominant social paradigm, knowledge is founded on the Cartesian subject-object binary, and this binary is often translated into the teacher-student binary in education, the researcher-researched binary in research, and potentially the human-nonhuman binary in environmental education research.

These binaries are established through ‘hyper-separating’ (Plumwood, 1993) the two artificially contraposed categories such that we think of them as independent of each other. Furthermore, the two categories are made to be politically asymmetrical, in that the former often claims and exerts power over the latter. Knowing the researched object as ‘Other’ possibly legitimises broader problematic socio-ecological relationships.

We feel that solely relying on this researcher-centred and anthropocentric way of knowing in environmental education is risky. As Braidotti’s (2013) posthumanist critique indicates, anthropocentrism as a form of praxis has fuelled the ecological demise we are now experiencing in the Anthropocene. To respond to the concerns of researcher-centredness and anthropocentrism in environmental education, in this article we suggest the possibility of how engaging with multiple theoretical concepts may disrupt the taken-for-granted asymmetrical relationship between the researcher and the researched.

Acknowledging our epistemological limits is particularly important in environmental education research where it is often the case that the researched, including the nonhuman, does not have sufficient agency in the process of knowledge production (Russell, 2005). If traditional knowing practices establish an asymmetrical power relationship between the knower and the known (Foucault, 1990) by granting the power to represent only to the former, unknowing what we already know about the researched may potentially provide us with new and perhaps more ethical ecological perspectives (Davies, 2013). Understanding that environmental education research itself is a form of environmental activism (Rennie, 2008), our purpose here is to suggest that our collective methodological approach may facilitate a less anthropocentric way of (un)knowing the environment.

Our troubling of the epistemologically asymmetrical relationship between the researcher and the researched may be situated in relation to the recent movement of postqualitative research in educational studies. In postqualitative research, traditional qualitative research methodology that encourages what St. Pierre (2013a) terms ‘some bizarre combination of interpretivism and

positivism in thinking about data' (p. 224), and relatedly, the researcher's full epistemological access to the research, is rigorously critiqued. Consequently, in postqualitative research, it is considered that what is performatively 'enacted' (instead of 'represented') as the researched is partial and temporal, and thus what we (think we) know is always vitally changing itself, or 'becoming' (St. Pierre, 2013b). Related special issues have been published in influential journals in the field of education: for example, *International Journal of Qualitative Studies in Education* (Lather & St. Pierre, 2013); *Cultural Studies ↔ Critical Methodologies* (St. Pierre, Jackson, & Mazzei, 2016); and *Educational Philosophy and Theory* (Pedersen & Pini, 2017).

Jackson and Mazzei (2011) provided one unique way of practising postqualitative research in their influential work *Thinking with Theory in Qualitative Research: Viewing Data across Multiple Perspectives*, which we adapt in this article to guide our inquiry. As the title suggests, Jackson and Mazzei together read what could be understood to be the same data by 'plugging in' multiple theoretical concepts, in order to demonstrate that what is performatively enacted with each theoretical concept is different.

In their words, plugging in is 'a process to diffract, rather than foreclose, thought' (Jackson & Mazzei, 2011, p. 5). According to Barad (2007), diffraction in a social research context refers to an analytical process that is 'marked by patterns of differences' (p. 71), and it is those differences that Jackson and Mazzei enact with a selection of theoretical concepts.

The theoretical concepts chosen by Jackson and Mazzei (2011) for their diffractive methodology were mostly associated with poststructuralism and, particularly the last two, with posthumanism: deconstruction (Derrida), marginality (Spivak), power/knowledge (Foucault), performativity (Butler), desire (Deleuze), and intra-activity (Barad). While poststructuralist and posthumanist theoretical concepts may be consistent with the broader onto-epistemic presumptions postqualitative research methodology holds (St. Pierre, 2013b), we feel that different theoretical types are also needed in order to differentiate and/or diffract the sameness of the researched even further — and perhaps, of postqualitative research itself (we will return to this issue at the end of this section).

By 'theoretical concept', Jackson and Mazzei (2011) meant something 'specific' (p. 5) enough to be a 'plug' for the knowledge 'machine' (Deleuzian terms) they were enacting. That is, each part of a machine needs to be specific enough to be able to conduct a specific function. The specificity of the theoretical concepts allows them to pursue 'the *process* of making and unmaking the thing' (p. 13, original emphasis), which they called an 'assemblage' (another Deleuzian term). In this context, this means that by applying different theoretical concepts (a.k.a. plugs), different types of knowledge about the researched (a.k.a. machines) are assembled. A specific theoretical concept does not complete the knowledge machine because it can be replaced with another, and thus this assemblage process always creates the onto-epistemic margin between the actual and the virtual. In contrast to a theoretical concept, a theoretical framework is 'abstract' (p. 3) and is constituted by a series of theorists and theoretical concepts. Jackson and Mazzei listed phenomenology, critical theory and poststructuralism as some examples of theoretical frameworks.

The specificity of a theoretical concept, as a mechanical plug that enacts a partial reality, decentres the human researcher by emphasising the limits of their capacity for full knowledge. Accounting for the existence of excessive realities enables us to imagine less anthropocentric and thus more sustainable researcher-researched relationships in environmental education research as an alternative form of ecological praxis.

The ontology of the researched in the form of data also requires some methodological attention. There are three key ideas about data in Jackson and Mazzei (2011) that we find useful. First, against traditional qualitative interpretivism, they understand that data does not positively represent the full reality of the researched. Instead, 'the data is partial, incomplete, and always being re-told and re-membered' (p. 3). The data, in other words, is not the full truth of the researched, regardless of the claim made with their 'voice'. Second, the meaning of the data appears to the researcher as it is 'arrested' (Derrida's term) — that is, the data is made 'a *brief visit*' by

the researcher for its ‘*temporary meaning that can escape and transform at any moment*’ (p. 6, original emphasis). In other words, grasping a meaning of the data is processual rather than final. The data as an appearance is a becoming rather than a being. Third, the data as a phenomenological appearance is actual and specific and thus, like a theoretical concept, it is also plugged in to the knowledge machine assemblage. Therefore, ontologically and methodologically, ‘the divisions among and definitions of theory and data collapse’ (p. 6). Jackson and Mazzei called this process ‘reading-the-data-while-thinking-the-theory’ (p. 4). This justifies our analytical process where each individual author focuses on certain elements of the video data according to his/her theoretical concept.

In this article, we adapt Jackson and Mazzei’s (2011) methodological advancement for our version of postqualitative collective research methodology. Our approach revises Jackson and Mazzei by emphasising the significance of the researchers’ diverse subjectivities, and also by engaging more diverse research frameworks in a single study.

For us, just like theoretical concepts and data, the diversity of researcher subjectivities provides important plugs that can collectively assemble a more democratic and sustainable knowledge machine. For this reason, we allowed ourselves to individually ‘choose’ (we acknowledge that the word ‘choose’ here is possibly problematic for postqualitative research because it may recentre the human researcher) a theoretical concept for his/her analysis, rather than collectively plugging in each concept together as Jackson and Mazzei did. This process enabled each author to engage with his/her data-concept-assemblage more personally and meaningfully, and our collective research methodology to engage and account for each individual researcher’s critical subjectivity and interpretation (Nakagawa & Payne, 2019). The dilemma between the less human-centred nonchoosing and the critical (and probably more human-centred) choosing requires further philosophical and methodological attention in environmental education research.

Relatedly, regarding the diverse theoretical frameworks within our version of postqualitative collective research methodology, Misol’s non-poststructuralist and non-posthumanist concept of ‘locus of control’ (LOC; see the later section) provides an important perspective in this article to diverge from Jackson and Mazzei’s (2011) methodology. With the psychological concept of LOC, Misol interprets Kelsey’s psycho-historical factors that may have contributed to her environmental activism using coding. While we acknowledge that the ‘method’ of coding is not congruent with postqualitative research, our inclusion of Misol’s engagement with LOC emphasises that an approach with a theoretical framework other than poststructuralism or posthumanism also actualise *a* reality within postqualitative research methodology, but never *the* reality. If we are to genuinely strive to actualise different realities to the best of our capacity, we must be open to diverse epistemologies, not just poststructuralism and posthumanism. Misol’s contribution is thus valuable for the purpose of thinking about the possible tensions within postqualitative research. An uncritical and undemocratic embrace of poststructuralism and posthumanism could perversely lead to an alternative, yet still hegemonic, normative and dominant, approach to knowledge.

In summary, our reworking of Jackson and Mazzei’s postqualitative research is a unique means for a collective of researchers, with their diverse subjectivities, to partially and temporarily access and address the enigmatic becoming of the researched. The next section describes the details of our research procedure.

## Research procedure

The video we used for our shared data is a 25-minute interview with Kelsey Juliana who, at the time of interview, was an 18-year-old American woman fighting climate change (Moyers & Company, 2014). We purposefully chose this video as our data for this research project because it is small-sized, qualitative, more-than-text and publicly available.

The video was published on YouTube on September 19, 2014, just two days before the People's Climate March of that year. The People's Climate March involved 400,000 people marching in New York, where international leaders were meeting for the United Nations' Climate Summit. Kelsey was participating in an additional march, the Great March for Climate Action, which began on March 1, 2014 in Los Angeles, and was intending to march across the states to Washington D.C. by November, with a detour to New York to join the People's Climate March on Sunday September 21. Kelsey also acted as a plaintiff in a novel legal case in the State of Oregon attempting to hold the U.S. government responsible for climate change using the legal notion of Public Trust Doctrine (Wood, 2013). In the video, Kelsey was interviewed about her motivations and experiences in these two forms of climate activism.

After choosing the video data, we watched it collectively and individually a number of times. Then, each of us individually engaged with the video and its transcript (provided as part of the video) according to his/her particular theoretical concept. This engagement led to each researcher finding particular elements of the interview more relevant, illuminating, interesting or troubling for their approach. Each engagement in the next section outlines what kinds of questions the respective theoretical concepts might ask of the data and then conducts a brief analysis to enact a partial account of Kelsey. Due to limited space, these sections are intended to be indicative of the kinds of processes that might be possible with the selected theoretical concepts, rather than thorough or complete engagements.

One thing that needs to be mentioned here is the audio-visual form of the data, and accordingly, our methodological term of choice of 'engaging'. As we watched the video data many times, we became aware that it consisted of more than just what Kelsey said. The data also includes how Kelsey moved her body, how she changed her facial expressions and voice tones, and how the interview was conducted in the specific setting. Looking for a word that better specifies what we do with the data than performative 'reading', as used by Jackson and Mazzei (2011), we decided to employ 'engage' as a verb to indicate a more-than-textual, thus embodied, research process (Payne, 2005).

In the next section, first, Misol outlines her engagement with the educational psychology concept of 'locus of control' (Rotter, 1990) where she emphasises the significance of Kelsey's motivations for environmental activism. Following this, Yoshi engages with the concept of 'simulacrum' (Baudrillard, 1993) in order to think about possible sociological strategies of Kelsey's environmental activism. And finally, Blanche's engagement with the posthumanist notion of 'intra-action' (Barad, 2007) understands the interview as a relational enactment of climate so as to problematise the Cartesian dualism of the human (Kelsey) and the nonhuman (climate change).

### **Misol: Locus of control (Rotter)**

A great amount of research has reported the gaps between knowledge, values and action in environmental education (Heimlich & Ardoin, 2008). Internal LOC positively relates to variables such as empowerment, intrinsic task motivation (Galvin, Randel, Collins, & Johnson, 2018) and environmentally responsible behaviour (Kollmuss & Agyeman, 2002). Hence, LOC is a useful concept to practically work on the knowledge-value-action gap.

LOC explains and predicts a person's perception about whether or not one's effort will likely lead to their desired outcome. People who have an internal LOC perceive that a behavioural outcome is mainly traceable to their own efforts, skills and abilities (Putrawan, 2015). In contrast, people who have an external LOC believe that the power to make a difference in their lives and in society is primarily attributable to factors largely outside of themselves, such as random events, luck, a deity, or powerful others (Perry, Liu, & Griffin, 2011).

LOC is a psychological construct principally from studies of social learning theory (Rotter, 1975). Social learning theorists understand personality in terms of stable modes of behaviour (Rotter, 1954). Personality and behaviour are fuelled through personal experiences and social

situations. In other words, the theory treats personality (e.g., LOC) and behaviour as things that can be changed through educative experience, and which are (re)narrated and (re)shaped by educational goals, discourses and interventions. In addition, social learning theory assumes that behaviours will differ as contexts change, although there may be a gradient of generalisation from one to another situation (Rotter, 1990). This may be due to how people build expectations about whether or not their actions will be rewarded based on their prior experiences (e.g., experiences rewarded tend to be repeated; Rotter, 1966).

Since being conceptualised more than 50 years ago, LOC has been scrutinised by various researchers. For instance, it is argued that LOC alone is insufficient to explain behaviour, and so other types of concepts such as self-efficacy are required in order to adequately predict behaviour (Zimmerman & Schunk, 2006). Additionally, LOC is considered as having a distal and dispositional influence on behaviour as opposed to more proximal and motivational traits and states (Galvin *et al.*, 2018). Nevertheless, LOC is still actively researched as one of the main predictors of behaviours and action in various research fields, including in environmental and sustainability education where LOC has been researched as a key factor for environmental action (e.g., Ernst, Blood, & Beery, 2017; Putrawan, 2015). Although it was reported that LOC *can* be changed through environmental education (Hungerford & Volk, 1990), little is known about *how* LOC can be formed and changed within environmental education. Therefore, in my engagement with the data, I will explore potential effects of LOC.

### **Questions and method**

By drawing on meaning condensation analysis (Kvale & Brinkmann, 2009), this section will be guided by two questions: *What is Kelsey's LOC (i.e., is it external or internal)?* and *What potentially contributed to shaping her LOC?* Meaning condensation involves a compression of the meanings expressed by interviewees into briefer rephrased statements. In meaning condensation analysis, the researcher interprets, restates and summarises 'natural meaning units', that is, what the research participant says is summarised by the researcher into 'central themes'. I chose meaning condensation analysis because this mode of interpretation mainly focuses on the meaning rather than the specific words stated (Kvale & Brinkmann, 2009). In addition, as the interview was not specifically designed to explore my specific research questions, meaning condensation analysis was helpful for finding semantically relevant units for my theoretical engagement.

### **Engaging with data (1): Kelsey's internal LOC**

Through engaging with data, I found Kelsey to have an internal LOC. In the interview, Kelsey stated her beliefs that her actions and behaviours can influence not only the local environment and people in current and future generations, but also national and global spheres, by referring to the 'domino effect'. In addition, she sought and recognised her power as a young person rather than focusing on the disadvantages of being young. Table 1 lists the natural meaning units that reveal these themes associated with Kelsey's LOC.

### **Engaging with data (2): Potential factors contributing to Kelsey's internal LOC**

Studies have indicated various factors that possibly affect LOC, such as age (Chubb & Fertman, 1997), parents' LOC (McClun & Merrell, 1998) and their parenting style (Hoffman & Teyber, 1979). To date, however, little attention has been paid to investigate factors of LOC in the area of environmental and sustainability education. Therefore, this analysis of the potential factors that may have facilitated Kelsey's internal LOC (Table 2) is mainly exploratory rather than confirmatory.

Kelsey explained in the interview that her parents had a significant influence on her decision to be involved in the legal case. Her parents not only taught her the morals and values of caring for

**Table 1.** Kelsey’s internal locus of control

Natural meaning unit	Central theme
‘The thing that caught with me is, you are doing this to protect natural resources and the environment for your generation, for your friends, and for your future generations.’	Individual behaviour/actions can influence the environment and people
‘The whole theory about having lawsuits and legal actions . . . is that we hope it’ll be what we call a domino effect. You know, a win here will hopefully influence all the wins across the states.’	She believes that these specific actions will have significant influence
‘I think there’s so much power in having youth stand . . . in court and saying, ‘will you please . . . protect this vital resource . . . for me and for my children?’	There is power in being a young person

**Table 2.** Contributing factors for Kelsey’s internal LOC

Natural meaning unit	Central theme
‘How can you not see the importance? How can you not feel compelled to do something? . . . It’s the most relevant issue, social justice, environmental justice issue, of this time.’	Strong concern about justice issues
‘That the atmosphere is just the all-encompassing resource that everything depends on, every life force. So, to kind of not hold that in protection, to let that be exploited and polluted, it goes against our rights.’	Recognising the connection between personal well-being and environmental damages
‘I’ve kind of been raised and brought up with these morals, these values, of putting, you know, the earth on an equal platform as myself, caring for others, caring for, that includes future generations.’	Values are transferred across generations
‘I ask myself, what will this really do? . . . [But] I think the most beautiful thing about the march is that we’re collecting stories . . . from people across the country . . . [and] that we’re going to carry them to DC and stand in front of the White House and say, climate change is an issue . . . And I think that’s very powerful.’	Transition from self-doubt to self-belief by taking action

the environment and other people, but also participated in rallies with her. This implies that her parents’ LOC potentially had an intergenerational impact on her LOC, corresponding to earlier literature about intergenerational impact (Ballantyne, Connell, & Fien, 1998; Hoffman & Teyber, 1979). In addition, having opportunities to participate in action from a very young age may have helped her to realise the impacts of her own behaviour on the environment.

In the interview, Kelsey repeatedly demonstrated her awareness of and high level of care for how environmental degradation influences her personal wellbeing. Her awareness and strong ethics of care for the environment may have facilitated her to take action, and the success of those actions may then have contributed to her internal LOC. This is in line with Arakelian’s (1980) argument that if reinforcements in new social experience change previous patterns of success and failure, LOC orientation can change. Table 2 contains the meaning condensation analysis that explores the potential causes of Kelsey’s internal LOC.

**Summary**

Through engaging with the data, I found that Kelsey demonstrated a strong internal LOC. Kelsey remarked that by taking action her self-doubt had been transformed into a belief that she could

have significant influence on her desired outcomes. This suggests that taking action can potentially change a person's LOC from external to internal. In this regard, environmental education could focus on providing opportunities for students to engage in action. However, it is not guaranteed that having such an opportunity will necessarily lead to an internal LOC. For instance, if a person experiences a failure, it might lead to having an external LOC instead. In summary, I found LOC to be a useful construct to understand a person's belief about their individual power in local and global environmental issues, and how this is related to one's motivation to be an activist.

### Yoshi: Simulacrum (Baudrillard)

Jean Baudrillard (1929–2007) was a French theorist who is often associated with poststructuralism and sociology, although Baudrillard himself denied these labels (Baudrillard, 2007). Indeed, it is difficult to identify who Baudrillard was due to his diverse writings (Butler, 1999), ranging from earlier Marxist critical sociology (e.g., *The Consumer Society*) to later postmodern nihilism (e.g., *The Gulf War Did Not Take Place*) (Kellner, 1989). The later postmodern and nihilistic direction that Baudrillard adopted, according to King (1998), is a contradiction for Baudrillard as a critical theorist and thus perhaps should be rejected for theoretical consistency. However, some Eurocentric, androcentric, and anthropocentric tendencies may be also present in his theorisation, embodying the traditionally privileged point of view from which a series of self-uncritical sociological critiques are conducted (Kaplan, 1996).

'Simulacrum', one of Baudrillard's key theoretical concepts, is highlighted in his masterpiece *Symbolic Exchange and Death* (1976/1993), subsequent to his major Marxist sociological writings. In *Symbolic Exchange and Death*, Baudrillard was an 'ultra-leftist' (Gane, 1991, p. 4) theorist who critiqued the contemporary sign as a structural value form, which is systematically simulated as a commodity for mass consumption. Simulacra are signs, and simulation is a socio-semiotic system that internally reproduces simulacra (Imamura, 1992). The more we consume simulacra and thus legitimise them, the more power the socio-semiotic system gains.

Baudrillard's socio-semiotic critique of the sign is based on Saussurean structuralist linguistics. By hypothesising that a sign is composed of a *signifier* (e.g., 'CAT' as sounds/letters) and a *signified* (e.g., the cat as an idea), Saussure then identified two ways in which a sign becomes meaningful. First, a sign becomes meaningful because the signifier *represents* the signified. Second, a sign becomes meaningful systematically, that is, in relation to other signs (or signifiers, to be precise). The notion of the language as 'a system of differences' is derived from the second principle where signs start functioning without their signified. In *Symbolic Exchange and Death*, Baudrillard argued that the contemporary sign is increasingly functioning by adhering to the second relational principle, which he called 'the third order of simulacra'.

Against systematised/systematising simulacra, Baudrillard imagined a state of things (c.f. signs) that is prior to simulation, which he called 'the symbolic'. In the symbolic, a thing is constantly becoming (or being 'exchanged', in Baudrillard's word), rather than being, without a fixated meaning or value. *Symbolic Exchange and Death* was written in order to sociologically diagnose the systematising effects of simulation and, more importantly, to defend a possible symbolic world prior to the contemporary reign of signs. The symbolic is 'the basis' (Gane, 2010, p. 211) for his poststructuralist critique.

Baudrillard's notion of simulacrum is a useful ecopedagogical tool to critically problematise the environment as we know it (Nakagawa, 2018). The 'environment' in our knowledge, with a lower-case 'e', is a simulacrum — hence, it can be expressed as the *environment-simulacrum*. The environment-simulacrum does not necessarily represent the total reality (or the virtual) of the Environment, with an uppercase 'E', which we probably cannot access in full. The environment-simulacrum via Baudrillard thus points to the epistemic partiality of human knowing of the Environment, and potentially to a less anthropocentric yet critical way of becoming in the world.



In order to imagine the symbolic of the Environment, however, all of us incorporated within the socio-semiotic system of simulation need simulacra as a means of conceptualising what the Environment may be (as the environment-simulacrum). Thus, the environment-simulacrum belongs to the order of 'the real' for us. Therefore, the real, for Baudrillard, embodies the human epistemological limit. The sociological problem of the real for Baudrillard, however, is not this epistemological limitation. Instead, it is about how the contemporary system of simulation pervasively reproduces its own social relations (which Baudrillard called 'capital') to justify the structural violence of capitalism. As long as we accept the terms and conditions of simulacra and its system of simulation, we are contributing to a world that is not ecologically sustainable. Baudrillard urged us to challenge simulacra and simulation theoretically and practically.

Following Baudrillard, for environmental education and its research, an urgent task is to critically challenge the unsustainable environment-simulacrum as we know it. A close reading of *Symbolic Exchange and Death* reveals possible symbolically subversive strategies to do so. Those strategies may be nonexclusively listed (Nakagawa & Payne, 2017) as suicide, enchantment and hyperconformity (see Nakagawa, 2017, for details). Baudrillard's preference over these three potential symbolic strategies was not consistent but remained ambiguous throughout his authorship (Levin, 1996). Due to limited space, I will only briefly elaborate on the strategy of suicide in this article, which is one of Baudrillard's major ultra-leftist emphases in *Symbolic Exchange and Death*.

According to Baudrillard, suicide is a strategy to *reject* simulacra that are given by the social system. The extreme is a rejection of one's life, the most valued simulacrum in bio-humanistic capitalism (Baudrillard, 1993). While Baudrillard did suggest biological suicide as an ultimate counter strategy against the system, this strategy can (or probably should) be understood metaphorically for the educative purpose of environmental education and its research. That is, broadly, suicide is a symbolic strategy to reject the environment-simulacrum given by the capitalistic system as the real space-time-body to be lived as a capitalistic subject. In other words, it is interpreted as a strategy to give up a *lifestyle* that one is environmentally accustomed to.

### **Question and method**

With the above brief clarification of the theoretical concept of simulacrum and, relatedly, the symbolic strategy of suicide, these guiding questions are formed: *Did Kelsey challenge the environment-simulacrum with the symbolic strategy of suicide? If so, in what ways?* With these guiding questions, in the following, I engage with the data, particularly paying attention to what is textually performed regarding what Kelsey did as part of her environmental activism. The variant of the environment-simulacrum is indicated with italics, whereas Kelsey's own words are indicated with quotation marks.

### **Engaging with data**

By engaging with the audio-video data repeatedly, I found a few instances where the symbolic strategy of suicide was applied in order to critique the *environment-simulacra*. For example, Kelsey's participation in the Great March for Climate Action (hereafter the March) across the United States may be interpreted as her rejection of an ordinary lifestyle that socio-ecologically constitutes part of the capitalistic environment-simulacrum, which may be convenient for us now but ecologically problematic in the long run.

In the interview, Kelsey demonstrated her awareness that participating in the March had cost her immediate further formal education at a college. Kelsey explained that *going to college* was 'really gratifying' but a 'really easy' option to take. By taking that easy option, Kelsey felt that her 'other interests' of more significance such as environmental activism would be disrupted and delayed. For Kelsey, participating in the March at the cost of formal education was not only a symbolic suicide for a young aspiring person, but also an performative means of becoming a role

model for younger environmental activists in the future: ‘[If] you’re not going to take the initiative really, like we say walk the talk, to really get uncomfortable and take a stand, how can I expect other people to?’ Here, a subversive act of symbolic suicide was intended for the capitalistic system, including its ‘education’.

As well as her immediate formal education at a college, the March greatly cost her bodily comfort. The typical modern trip from Los Angeles to Washington DC across the United States is an easy *five-hour flight*. Instead, Kelsey chose to ‘walk the talk’. Using her own body in ‘civil disobedience’, she rejected the comfortable trip readily provided by the environment-simulacrum. In the interview, Kelsey emphasised the ‘very tangible’ discomfort of the March: ‘I’m uncomfortable in this very wet tent with a lightning storm going on. And I have to wake up at 4:30 in the morning . . . I’m frustrated. I’m furious.’ By walking slowly instead of flying for five hours, Kelsey ransomed her own body against the environment-simulacrum. The environment-simulacrum lures the capitalistic subjects with capitalistic time-space-body comfort and efficiency. Rejecting them is a form of symbolic suicide. It is also an environmentally educative opportunity for the learner to slowly become something other than the socially capitalised body (Payne, 2014).

### **Summary**

As this limited engagement with Kelsey’s actions has indicated, Kelsey seemed to employ at least a few symbolic strategies of suicide to challenge the environment-simulacrum. Kelsey marched across the United States, which cost her immediate educational and bodily comfort and efficiency otherwise readily granted by the system.

Is challenging the environment-simulacrum ‘really’ good for the ecological system and our future? Would a greater environmental ‘outcome’ have been (re)produced if Kelsey had gone to college straight away and become ‘educationally’ ‘successful’ instead of spending a lot of time participating in the March? These unanswerable ‘real’ questions weigh on us heavily. However, critically and subversively experimenting with social forms of space-time-body other than the familiar capitalistic one may be of symbolic benefit for a critically oriented environmental education and its research.

### **Blanche: Intra-Action (Barad)**

I firmly believe that the idea that humans are separate from nature is one of the root causes of ecological destruction, and because posthumanism seeks to trouble that very idea, I find it a valuable theoretical framework. I have found Barad’s (2007) ‘performative’ form of posthumanism is useful in understanding human-nature relationships. While human-nature relationships are often understood via the ideas of connection or interaction, Barad argues that the term ‘interaction’ assumes that the things or forces in a relation are separate from each other and exist prior to their relationship (2007, p. 33), and the same could be said of ‘connection’. Hence, she develops the term ‘intra-action’ to reconceptualise boundaries, identities, causality — and a range of other philosophical concepts — as relational and never fully separable. She argues that intra-action suggests that *relationships constitute entities*, rather than the other way around: entities do not exist outside of the relationships they are engaged in.

Exploring all the ways that intra-action would enable engagement with the Kelsey climate change interview is beyond the scope of this short section (but see Verlie, 2017, and Verlie & CCR15, 2018, for more detail). The particular affordance of intra-action that I will focus on here is how identities emerge through their intra-action. Barad argues that ‘identity formation is a contingent and contested ongoing material process; “identities” are mutually constituted and (re)configured through one another in dynamic intra-relationship with the iterative (re)configuring of relations of power’ (2007, pp. 240–241).

What this means is that identities are neither *determined* by nature's materiality nor *constructed* through social discourses. Rather, identities are a dynamic *doing* (i.e., performance) that are continuously brought into be(com)ing and reconfigured through the ongoing enfolding of the material and discursive, the human and non-human, the natural and the cultural. This 'posthuman performativity' differs from social constructivism, which sees entities and their identities as constituted through purely social, that is, human, forces; but it also differs from essentialist accounts that understand identities to be determined by biology and therefore to be inherent and static based on the assumption that nature/biology/matter is inert and inanimate. Foregrounding the agency of human and more-than-human materiality (i.e., 'nature') and its role in identity formation, intra-active identities are therefore constantly changing, fluid, and dynamic.

In this case, with this data, intra-action refers to how Kelsey and climate change are not independent, static, enclosed entities but an 'entanglement', a relationship of intense interdependence. Neither of them would exist in exactly the same way without the other, and each is continuously undergoing change due to their relationship with each other. To clarify, 'climate intra-action' attends to: how Kelsey's identity emerges and is performed through relation with climate change; how the climate is also changed through intra-acting with Kelsey; and how the boundaries between Kelsey and the climate move, blur, dissolve and/or are (re)established due to their ongoing intra-action.

### **Question and method**

Thus, one of the relevant research questions for me is: *What emergent climate-Kelsey relationships are becoming enacted through the interview-Kelsey-climate change intra-action?* In this short section, in order to explore how Kelsey and climate change are co-constituted and mutually emergent, I focus on three moments whereby climate change, Kelsey, the interviewer and the larger socio-material context intra-act.

### **Engaging with data**

The interviewer opens the interview by referring to recent extreme weather events and articulating climate change as a massive, global and an increasing issue drawing politicians and activists to New York. In relation to this, he positions Kelsey as somewhat unique, as an exceptional individual: 'But of all the people here for these events, there's one in particular I wanted you to meet. Kelsey Juliana is . . . part of an unusual legal effort to slow down global warming.' However, early in the interview, Kelsey somewhat rejects or reworks this rationally empowered individual identity: 'It's a movement that I'm a part of . . . I'm just a representative.' Here Kelsey intra-acts with climate change as it has emerged in the interview as well as climate change as she has experienced it before — too big to be solved by an individual. Thus, specific actualisations of Kelsey and climate change emerge: climate change emerges as a collective action problem, and Kelsey emerges as part of a collective of like-minded people who take climate action.

*Later, the interviewer asks Kelsey:* 'Why do you think this public trust doctrine applies to the atmosphere?' Kelsey responds: 'I think it makes perfect sense . . . the atmosphere is just the all-encompassing resource that everything depends on, every life force. So to kind of not hold that in protection, to let that be exploited and polluted, it goes against our rights. And it's not just.'

In this moment, we can see that in the intra-action of the interview, Kelsey and climate change perform 'climate change' as a public good, or the commons, vulnerable to exploitation by private interests and therefore demanding protection through legal avenues. This positions climate change as something that can be efficiently managed through such democratic procedures. Co-emerging with this, Kelsey performs the role of an empowered, passionate, rational citizen who can hold government accountable to the people.

However, climate change exceeds human agency and thus destabilises these performances of rational managerialism. In the following part of the interview, the interviewer asks Kelsey what the most important thing that she has learned from marching is, and Kelsey responds:

*Well, you know, . . . the actions I take today are, you know, with my future children in mind . . . I just think, you know, if I'm worried now about having children, I can't imagine 10, 20 years from now like the life that they'll take. The worries that will be on me when I'm a mother will just be incredible . . . Because of climate change.*

In this moment, climate change exerts an affective force that intra-acts with Kelsey's maternal desires (which are also intra-active, posthuman performances — i.e., not socially constructed or biologically determined). This intra-action materialises a climate-human relationship where climate change becomes an issue affecting reproductive choice, family planning and gender performances. Climate change's identity is no longer limited to being an external, geo-scientific object, but becomes enfolded within Kelsey's identity. If or when Kelsey becomes a mother, or even if she does not, climate change is embedded in her relationship with the child-to-be-or-not-to-be. And of course, that child or non-child would (or would not) intra-act with the climate; hence, Kelsey and the potential child are enfolded within what the climate might become. We can thus see that gender performances — of motherhood as a decision or choice that is both rational and emotional, deserving planning — emerge through intra-actions with climate change. Climate change genders us, and gender changes climate; or rather, gender and climate change are coemergent material-discursive entanglements that intra-act.

### **Summary**

We can thus see that the interview is pedagogical, in that through the practice of the interview, 'climate change', 'Kelsey' and their means of entanglement emerge; the interview enables a specific kind of climate-human relationship to be generated. I find this intra-active approach useful for (attempting, but perhaps never fully) understanding how, why and where the borders between students and their environments are established, as well as what kinds of identities (of both students and environments) are being performed in environmental education. This is important if we wish students to consider 'the environment' not as something separate and external to themselves. In order for students to understand that 'environments' and [their student] 'bodies' are intra-actively co-constituted' (Barad, 2007, p. 170), that is, that their bodies are enmeshed within, composed through, and porously open to 'the environment', then as educators we need to be able to conceptualise this ourselves. By bringing attention to what human-environment boundary constitutions are being enacted, thinking with intra-action is an important part of being able to reconfigure student-environment relationships into more sustainable, equitable and/or democratic ones. For example, we might consider the ways in which visual scientific representations of climate change might reinforce the sense of climate as something external to the self and thus explore more artistic and embodied approaches. Of course, educators are also entangled in these relations, and their capacities to effect change 'do not precede, but rather emerge through, their intra-action' (Barad, 2007, p. 33) with the world.

### **Discussion: Towards more sustainable research relationships**

In this article, inspired by the recent postqualitative research movement in educational studies in the context of environmental education and its research, we highlighted a potential methodological benefit of collectively working with multiple theories for more sustainable relationships between the researcher and the researched. In this section, as a way of concluding this article, we discuss potential benefits and limitations of our version of postqualitative collective

methodology for environmental education research by opening up our thoughts, rather than closing them down. This final section discusses three elements in relation to sustainable research relationships: differentiating the researched and how that may contribute to differentiating pedagogies that are particularly relevant for environmental education; the sustainable relationships among the researchers and our learning through this collective research project; and our limitations and recommendations.

### ***Differentiating the researched and pedagogies that differentiate***

To reiterate, in this article, we have collectively demonstrated that ‘any empirical material can be understood in more than one way’ (Alvesson & Sandberg, 2014, p. 34) by uniquely adapting Jackson and Mazzei’s (2011) postqualitative methodology. In this section, as well as summarising the main thread of this article (i.e., ecologising the researcher-researched relationships by differentiating what we partially ‘know’ about the researched with a particular theoretical concept), we highlight how each limited knowing may contribute to a different pedagogy in the context of environmental education.

Misol used the construct of ‘locus of control’ to analyse Kelsey’s statements about her beliefs and perceptions in regard to her environmental activism. Misol chose LOC because she believes that faith in one’s capacity to affect change is essential for people to take actions for sustainability. Misol showed that in Kelsey’s psychological process, Kelsey had begun to recognise the real effects of her own action, which then had further facilitated her activism. Pedagogically, this possibly indicates that taking an action, or participating in activism, may shift people’s LOC from external to internal. In this regard, one plausible approach to environmental education and its research is to provide students with an opportunity to engage in action. However, its effect is uncertain at this stage. If students experience a failure in that process, it might lead them to develop an external LOC instead.

Yoshi used Baudrillard’s theoretical concept of ‘simulacrum’, which encourages us to reject what is (re)presented to us (e.g. the environment), potentially leading to a critical re-imagining of its ethically ‘better’ version. This re-imagining is educative, especially when what we currently know and do as the environment is clearly manifesting serious ecological problems such as climate change. Yoshi engaged with the data by highlighting some ‘suicidal’ strategies Kelsey had used to challenge the environment-simulacrum. Those subversively deconstructive strategies are useful to unlearn the familiar yet ecologically unsustainable environment-simulacrum for the possibly ‘better’, inviting a postmodern critical (or postcritical — see Nakagawa, 2018; Nakagawa & Payne, 2015, 2017, 2019) pedagogical approach to environmental education and its research. However, it is anticipated that its deconstructive approach with the strategy of suicide is experimental and risky, at least initially, because it cannot specify any predetermined cognitive, affective, or practical ‘outcome’ (as may be preferred by some).

Blanche engaged Barad’s concept of intra-action to demonstrate how climate change and Kelsey’s identities were relationally performed throughout the interview. Kelsey at times performed a rational, morally just, progressive identity as a representative of the movement. Simultaneously, ‘climate change’ was performed and enacted into be(com)ing. Climate change became an all-encompassing, global collective action problem worthy of unprecedented legal and political strategies. At other times, Kelsey was affected differently by climate change, which somewhat recomposed the rational, legal ‘Kelsey’ into a more emotionally directed individual concerned with private (but deeply socio-materially gendered) reproductive issues. The boundaries between Kelsey and climate change became differently enacted through these considerations of potential future motherhood. Such an intra-active approach to environmental education can enable educators to attend to the dynamic ways in which student-environment relations are becoming performed, such that we can *educate-with* these always changing climate-student relationships.

While the partial realities of Kelsey that have been actualised in this article are restricted by our choices of theoretical concepts and the data/researched, we hope that our version of postqualitative collective methodology is useful for generating more sustainable research relationships in other environmental education contexts. In actualising our epistemological relationships with the data/researched, we emphasise that each of our individual approaches temporarily and thus partially ‘arrested’ the data/researched (Jackson & Mazzei, 2011), while other silent and absent yet valid realities remain possible and virtual (Payne, 2016). This less anthropocentric and less researcher-centred acknowledgement of the inaccessible virtual, supported by the doubt of epistemologies and/or the epistemologies of doubt (Philippopoulos-Mihalopoulos, 2015) is important in environmental education research where the relationships between the researcher and the researched have significant implications for broader ecological relations. Put simply, our collective methodological approach problematises our human capacity to know by partialising and multiplying our thoughts, and provides an opportunity to reconsider the asymmetrical researcher-researched relationships in a more ecologically humble way.

### ***The researcher’s learning, or becoming a nomadic researcher***

Although the main thread of this article is ecologising the researcher-researched relationships by critiquing human exceptionalism with our version of postqualitative collective methodology, our research has also revealed a strong implication for the relationships among the researchers, as we experienced at first hand.

In actualising multiple partial realities of the data/researched and our epistemological relationships with it, we have tried to treat our theoretical concepts as equally valuable and valid, including Misol’s non-poststructuralist/non-posthumanist concept of LOC, without hegemonically applying a single theoretical framework (c.f. Jackson & Mazzei, 2011). In democratically collective research projects where multiple researcher subjectivities meet, opening ourselves to various onto-epistemic presumptions is not only necessary for research sustainability but also beneficial as a learning process for researchers, novice or experienced.

However, in reality, by having to choose one methodological ‘meta-framework’ to make the paper work as a whole, and by choosing a postqualitative one closely associated with poststructuralism and/or posthumanism, which not every author in this paper agreed with, this has in practice validated some of our individual approaches more than others. This was a significant methodological and interpersonal challenge we faced, revealing complexities and even paradoxes of combining postqualitative research methodologies and diverse researcher subjectivities (Nakagawa & Payne, 2019). For this reason, our collective methodology may differ from what Jackson and Mazzei (2011) mean by postqualitative research methodology. However, we appreciate the learning the process has generated for us because of these ‘postcritical’ challenges.

The following paragraphs articulate our individual learnings from this collective project. Of note, we were amazed about how we have different ideas about ‘learning’ and how individual learning takes a different form for each of us. Misol’s learning is about how LOC may be practically reconceptualised and thus reinforced as a theoretical concept. Yoshi’s learning is theoretical in that he questions his own approach through the others’ approaches. Blanche’s learning entails an ethical aspect of onto-epistemologically accepting otherness in a collective inquiry.

*Misol: Engaging data with the concept of locus of control mainly focuses on each individual’s belief about whether their actions matter for society. However, my engagement with locus of control doesn’t directly address the role of social structures even though such concerns are a crucial element of environmental education. Therefore, Yoshi’s problematisation of being in a capitalistic system and challenging that with different strategies compensates for what is missed in my theoretical engagement. Blanche’s engagement with intra-action criticizes*

the human/nature dualism which I personally agree with. Blanche's engagement also stresses the status of becoming rather than being so that it argues that people's behaviour should be understood together with their context. The concept of locus of control somehow differentiates individuals from their environment. However, I believe that an awareness of the strong connection between human-nature(environment) might intensify an internal locus of control because people would therefore be aware that their actions or behaviours cannot be separated from the environment. Additionally, it would be interesting to see how locus of control might be changed in different social-material contexts which my engagement didn't pay particular attention to.

*Yoshi:* My limitation with simulacrum is the impossibility of positively identifying who the learners should be and for what they learn. Misol's approach, although possibly presupposing traditionally individualist education which I critique, rationally provides a 'safe' additional approach to my rather risky deconstructive pedagogy. What have I learnt? I think both accounts, decentring and recentring of the human, are needed, because we really need to be careful with and for the now fragile environment. But does this send a mixed and perhaps 'confusing' educational message to the learner? In relation to Blanche-Barad, my theoretical approach with simulacrum presupposes a privileged critical location of the researcher-subject from which the environmental-simulacrum is problematised. Blanche-Barad would say that such a special location itself is a still-humanist illusion. But can we say something is wrong and do something about it if we are totally inside the simulation? To do so requires at least a temporarily arresting moment of transcendence, if illusional, from the inside (Philippopoulos-Mihalopoulos, 2015)? The data is arrested to take a form, in Jackson and Mazzei's (2011) terms. So, is the researcher and his/her subjectivity also arrested? Working with Misol and Blanche, both with different theoretical backgrounds from mine, provided me with many opportunities to question and develop my own theoretical understandings.

*Blanche:* Misol's engagement speaks to Kelsey's experience of personal agency, empowerment, efficacy and control. Yoshi's informs us about the strategies that Kelsey employs in order to be effective within that broad and complex network/entanglement. My approach does not tell me much about Kelsey's internal/psychological experience, nor about whether she is effective at taking action and caring for climate. Thus, without Misol's and Yoshi's, I now feel that mine is very partial and incomplete, and leaves out important and useful ways of understanding what is going on. Reading both of these different approaches to the Kelsey-climate-interview, given that I find great value in both, I am reminded to be humble and not to engage in delusions of theoretical grandeur. Working together and considering the value of each other's approaches has been important for me in remembering and reinforcing that my way is not the only nor the best way, although it might contribute different and important considerations. I think this is really important if we want environmental educators to work together, which feels incredibly important given the urgent and global scale of ecological crisis.

Importantly, these differentiated learnings may also indicate that the three of us did not necessarily agree with each 'other', revealing persisting interdisciplinary challenges even in this dialogically and ecologically oriented collective project (Newton, 2007). Our collective remark on the relationships among the researchers, perhaps related to the above dilemma, is on the practical necessity of making a meaningful shape of the collective Deleuzian 'flow' (Jackson & Mazzei, 2011, p. 139) of the researched. That is, actualising different realities of Kelsey with different theoretical concepts raised the following questions: So what? and What do we do with this?

To methodologically address these questions, we chose to engage with Jackson and Mazzei's (2011) performative plugging-in as a meta-theory with which those different realities could be 'agreeable' with each 'other', to frame the paper as a whole. In this case, the meta-theory

we selected was the most closely associated with Blanche's onto-epistemic presumptions. For Misol, however, the meta-theory is not grounded or practical enough to address problems in the real world, and potentially the psychologically positivistic concept of notion of LOC is not congruent with the postqualitative research paradigm. For Yoshi, ethically, the meta-theory does not appear to be critical enough to emphasise the real human responsibility for the ecological consequences now referred to as the Anthropocene (Noys, 2014). However, our methodological experiment-activism with different theoretical concepts derived from different theoretical frameworks did enable us to think about multiple Kelseys, and to think about more sustainable relationships in environmental education and its research. At the same time, this collective research project involving researchers with diverse subjectivities also revealed tensions in post-qualitative research methodology.

### **Limitations and recommendations**

As a final note, we would like to point out that individual researchers must be accountable for the partial realities they enact with the theoretical concepts they choose, and cannot hide under the cover of the collective or epistemological relativism. This is particularly relevant, as our collective endeavour indicated, when our theoretical engagements are not free of researcher subjectivity, whether theoretical or methodological, no matter how postqualitative research may scrutinise the notion of 'critical'. Therefore, perhaps one additional consideration needed is regarding the role of the researcher's critical reflexivity and responsibility in 'choosing' and engaging with theory (McKenzie, 2005) and how that aligns with their espoused political ends (Hart, 2005).

On the other hand, however, we also wish to briefly make the point that the critical idea of a researcher 'choosing' theory in a rational sense can also be researcher-centred and anthropocentric from a postqualitative research point of view (Taylor, 2013). The (post)human researcher is somewhat entangled and/or co-emergent with his/her 'theory of choice' (see Blanche's section); that is, rather than, or as well as, the researcher choosing the theory, perhaps the theory chooses the researcher.

The above remarks reveal possible gaps between subjectivity and objectivity, critical theory and new materialism, being and becoming, and responsibility and modesty, which all need to be methodologically addressed in environmental education research in the Anthropocene (Nakagawa & Payne, 2019). Due to limited space, our major limitation in this article is therefore that we could not fully consider and address those gaps, particularly the relationship between postqualitative research methodology and individually critical researchers with their particular historicities. This issue is not limited to collective research projects like ours, and their relationships need to be reworked if postqualitative research methodology is to gain a wider consensus in the environmental education research community that pursues the improvement of the current ecological conditions. This reworking is particularly important if postqualitative research methodology aims to be critically becoming, rather than diffractively remaining the same.

**Acknowledgments.** We thank Dr Phillip Payne for his constructive feedback at the initial stage of conceptualisation. We also thank the anonymous reviewers for their helpful suggestions to refine our manuscript. We acknowledge that this journal article was written on Wurundjeri Country in which Melbourne now is located.

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**Cite this article:** Nakagawa Y, Verlie B, and Kim M (2020). Collectively engaging with theory in environmental education research. *Australian Journal of Environmental Education* 36, 1–19. <https://doi.org/10.1017/aee.2020.6>