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Beyond the Metacrisis: Educating for the Future World to Come

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Aim of the special issue:

This AJEE special issue is conceptualised as a rhizomatic assemblage (Deleuze & Guattari, 1999) of contributions from diverse authors with complementary expertise and research interests from the field of philosophy of education. The purpose is to learn from the frightening visions of the metacrisis and the existential collapse scenarios it entails. The risk of the metacrisis dissolves our cornucopian fantasies of progressive improvement, leaving a void in the realm of normative future imaginaries (Everth, 2024). Refracting back enables a healthier vision of the present and the future. It brings current conditions, policy, and normative practice into sharper focus and can lead to pathways toward better futures (Heidegger, 1999).

What is the "Metacrisis"?

Humanity is facing a growing list of parallel and accelerating extinction-level threats, including climate change, ecosystem collapse, drought, flooding, soil runoff, resource exhaustion, ocean rise, acidification and warming, plastic pollution, and toxic forever chemicals (Ceballos & Ehrlich, 2023). There are also a rising number of systemic threats from peak oil, nuclear war, increasing inequality, poverty and homelessness, anxiety, suicide, a rapidly growing refugee crisis, artificial intelligence, and the 4th Industrial Revolution. Summarily these crises have been called the 'polycrisis' (Lawrence et al., 2024). These complex and multiple issues have been called a 'perfect storm.' However, a perfect storm implies a short-term event of accidental if monumental proportions. The term polycrisis has a better handle on the entangled, uneven and long-term character of the many issues that are increasingly impacting planetary ecology and global civil society.

The polycrisis is symptomatic of a 'metacrisis' where people are stuck in feelings of guilt and complicity about modern norms and practices, and frustration about not being able to overcome the toxic practices of consumerism and business-as-usual (IPCC, 1990). The metacrisis is "an invisible crisis" (Stein, 2022, p. 8) - that is impacting the psychology of individuals, communities, and the modern political zeitgeist. Crucially, recognising how modernity has created the metacrisis is a vital part of deterritorialising and subsequently reterritorialising healthier futures.

The term 'metacrisis' has been proposed as a way to frame the polycrisis with respect to common underlying dynamics and psychological drivers in the human mind, experience, and cognition (e.g. Cooley et al., 2023; Hedlund, 2023; Hedlund et al., 2015; Milbank & Pabst, 2015; Rowson, 2021; Stein, 2022). Recently, podcasts with Daniel Schmachtenberger introduced the metacrisis framing to a widening audience and provided a useful introduction to the concept (see Schmachtenberger et al., 2023; Schmachtenberger, 2024). The 'metacrisis'-framing highlights the interconnectedness of issues globally and the failure of prevailing modern systems to provide solutions. The concept raises some important and contested ideas. With the best of intentions, on an individual level, people feel that they cannot extricate themselves from the accelerating rat-race (Rosa, 2013). For many, concerns over job security and so on, are more pressing, but the longer-term anxiety of the metacrisis creates a hopeless anomie that is impossible to avoid. Liberal and neoliberal narratives of 'progress,' 'innovation,' and financial 'success' are no longer convincing (Irwin, 2008). All these factors are closely related to withdrawal into virtual spaces and a widening separation of the individuum from the 'real', the socio-ecological fabric that predicates our existence. Stein (2022) proposes that the metacrisis is the result of a "generalised educational crisis" (p. 8) and will require a substantial transformation of *paideia*, the system of education. The metacrisis can be viewed as a confluence of a crisis in sense-making, capability, legitimacy and meaning.

At a deeper level, the metacrisis addresses the role that modernity plays in creating the polycrisis. Never before has a civilisation had such a damaging planetary impact on the ecosystem or social cohesion and equity. Tracking how modern society specifically creates toxic forever chemicals or greenhouse gases is an important component of interrogating Enlightenment assumptions about rational objectivity, mastery, and entitlement, in favour of a more humble, participatory, and integrated relationship with ecological systems (Willems-Brown, 2018). We need a meta-analysis of the crisis; a big picture philosophical critique, that understands how ideas from the Enlightenment and colonialism continue to shape modern normative assumptions and continue to justify an extractive economic system that regards human culture as separate from, and superior to, ecology. A meta-analysis of the metacrisis understands the intra-connection (Barad, 2007) between individual subjects and their ecological context. A meta-analysis may include ideas derived from Indigenous cosmology about the intimate symbiotic relationships that make up the fabric of eco-social society (Mika, 2017; Smith, 2000; Stein et al., 2023; Yunkaporta, 2019).

Addressing the crisis in meaning requires critical reflection on the philosophical and the accelerationist and extractive economic basis of modernity. It opens consideration of alternative philosophies and cultural narratives. Indigenous philosophies do not make the same dualistic alienation between nature and culture, subject and object as lies at the root of modernity. Considering the metacrisis opens up these questions and how a transformation of mores will impact multiple elements of eco-social society. An *eco-social* society recognises how intraconnected humans are with the wider ecological system. That makes all legal, economic, and technological decisions have a different resonance; one that recognises that we are all entwined in the same planetary biota, with all the protective stance that implies.

For modern philosophy, access to the 'real' is tenuous. Ecofeminists such as Carolyn Merchant (2005), Val Plumwood (2005), and others have forged a large volume of work on the dualistic schism that separated modern culture from nature. That dualism underpins the conceptual apparatus of such Idealist, Enlightenment, and proto-modern philosophers as Descartes, Bacon, and Kant, who all developed the abstraction of humanity from the natural environment. These themes underpin modern constructivism and the abstraction of civil society from the finitude of natural resources. Baudrillard (2008) argues the acceleration in abstraction from an early association of truth with the real, ends up with truth residing in a simulacra. Ultimately, Idealism has broken the trusted association of truth with reality (Bostrom, 2003). The modern dissociation of human existence from nature through abstract Idealism, combined with the overwhelming complexity of the metacrisis, makes it difficult to find a coherent framework for understanding and purpose (Irwin, 2008; Henson et al., 2022).

We invite contributions that engage with some or all of the following issues about the 'metacrisis'.

- The polycrisis has synergies, symbioses, and differences. It is not 'one' crisis, but multiple. Yet these multiple crises are interconnected into a self-reinforcing socio-ecological metacrisis. The structure of the metacrisis emerges from Enlightenment concepts and fossil fuel driven industrialisation.
- 2. An unmitigated metacrisis constitutes the finitude of modern civilisation and the current planetary ecosystem. Contributors may wonder how education can tackle concepts of finitude, circular patterns of life, and regeneration through cycles of death of the old and the rise of the new.
- 3. Seeking pathways through the metacrisis can involve reflecting on the rich ideas in Indigenous and pre-modern cultures. Lines of flight out of the metacrisis spiral may connect with and take guidance from past and pre-colonial modes of life. This is a rich topic for education research to explore.
- 4. The modern philosophical premises of Idealism underpins neoliberal politics and economics. It lends itself to a faith in progressive technological innovation that ignores the 'externalities' of environmental and social harm and has justified the polycrisis as inadvertent collateral damage. The contributors may wish to explore lines of flight for education that tangle with the contradictions of 'green technology' as not only a possible saviour but also an enabler of a continuation of techno-social acceleration of growth and related aspects of the polycrisis.
- 5. People do not want this ecosocial polycrisis, however, we are 'thrown' (Heidegger, 1962) into an 'always already' existing modern political culture that makes contribution and participation in the dynamics of the metacrisis impossible to avoid. Contributors may wish to contemplate lines of flight for education that can lead out of the cognitive dissonance dynamics between knowing and acting.
- 6. The metacrisis is also a crisis in meaning that results in alienation. The meta-angle to these crises expresses the existential distress of the overall impact on the human psyche. We each feel stuck on the accelerating treadmill of meaninglessness. Contributors may seek to reconnect with deep questions about life's purpose and modes of collective sensemaking.
- 7. There is nothing essential about humanity as a species that necessarily evolves into a metacrisis. Contributors may seek educational contexts that evoke those qualities of the human psyche that can provide a foundation from which a post-crisis society can emerge.
- Framing the situation as a metacrisis offers a new way of understanding 'business-as-usual' (IPCC, 1990) in modern civilisation. Unmasking business-as-usual and economic growth as the dynamo that drives the metacrisis can lead to critical educational perspectives and form jump-off points for lines of flight beyond the metacrisis.
- 9. Conceptualising the metacrisis provides a unique and powerful opportunity to rethink our modes of ecosocial, ecopolitical, and economic organisation. Contributors may seek ideas on how the metacrisis concept can galvanise an appropriate educational response. Standing at the precipice of existential crises may give license for the germination of ideas for the radical transformation of the educational assemblages.
- 10. Education does not have to explore each specific crisis (such as climate change) but can be guided by the pathways that circumnavigate the finitude of the metacrisis. If unmitigated business-as-usual results in unprecedented levels of extinction, then current education practices are dangerous. Considering how an intra-connected posthumanist society might contextualise the expectations for education makes much more sense. How would this vision shape our education system? Its policy, pedagogy, the hidden curriculum?

Implications of the metacrisis.

One of the significant differences between the metacrisis and similar threats to earlier civilisations is the problem of scale. Earlier civilisations have succumbed to drought, resource exhaustion, or environmental calamity, but these crises and effects have always been localised. The globalised nature of modernity has transported pollution and its impacts all over the globe. The metacrisis is caused by modern consumerism, but it is not limited to one locality or culture. It is affecting the entire planet. There is no corner left to avoid it. At the same time, local communities feel powerlessness to affect how modernity continues to progress towards calamity. But it is at this moment, in the depths of the zone of nihilism, that the questions stimulated by the metacrisis can transform the way we regard onto-epistemology, education, and the future.

Any one of these large-scale threats poses an existential finitude to modern society. We are already in the zone of nihilism, as Heidegger (1999) puts it. The future, as Colebrook (2020) argued, is already deterritorialised. That is to say, the consequences of the polycrisis are already destabilising and bringing to a close modern normative business-as-usual (IPCC, 1990). How that happens and in what time frames it takes place, are not yet clear.

At present, the neoliberal agenda in education is a strong contributing force that maintains the norms of the metacrisis. Within the framework of neoliberal education, it is almost impossible for students or teachers to begin to see alternatives to neoliberal capitalism and business-as usual (Everth, 2024). Rather than address it, this approach to education continues to exacerbate the metacrisis. For education to overcome the illusion of mastery embedded in modernity, important philosophical consideration are sorely needed.

The metacrisis emerges out of the very ideas that transformed modern democracy from its despotic feudal past. Enlightenment ideas about freedom, fraternity, equality, and the popular general will promised to extricate the community from the despotism of mastery and extractive capitalism. But it has never really delivered on its promise. By now, the ruling classes are owners of shares in massive corporations, that meet the requirements of six-monthly profit dividends, rather than address demands for fair working conditions, wages, or ecological safety. Whenever possible, these large corporates externalise any responsibility for those realms to the wider environment. Democracy has relied on rational critical decision making behind the universal franchise. But the short-term election cycle coupled with the gaming of elections, and the power of corporate lobbying is seriously undermining faith in democratic processes. The structural drivers of economic growth and its dynamic balance of employment, inflation, debt, and greenhouse emissions are poorly understood (Irwin 2024, Hickel 2016). The majority of people worldwide are now deeply concerned about climate change and are willing to regulate for emissions reductions (Ritchie & Roser, 2024). But despite large scale protests, multiple litigation, and a plethora of NGOs, there is very little genuine motivation by politicians to do anything very meaningful about climate change and 69% of global school curricula do not even mention climate change (McKenzie & Benavot, 2024). Instead, market solutions are constantly sought.

Technological innovation also sits well with neoliberal narratives about economic growth and progressive market innovation (Smith, 1904). However, it is becoming increasingly questionable that even if every aspect of the technological world was 'green,' emissions would stop increasing if growth in consumerism continues to increase demand. Green technological consumerism is fine and dandy, but it is not a solution on its own. The acceleration of economic growth is clearly connected to the acceleration of planetary warming (Caporale et al., 2021; Irwin, 2024; Hansen et al., 2023; Le Quéré, et al., 2020; Mitić, et al., 2022; Noll, 2023; 2022; Onofrei et al., 2022). Ultimately, it is the normative assumptions of modernity that are producing a powerless population, that is stuck with

lacklustre politicians. The dilemma of growth appears insurmountable and hopeless. We remain stuck in business-as-usual (IPCC, 1990).

The educational project now, needs to deterritorialise the metacrisis itself (Irwin, 2020) and the educational structures designed to maintain the status quo (Everth, 2024). Issues traditionally tied to environmental education are now transcendental throughout education. This involves actively engaging with the reality of the situation and beginning to envision better modes of social normative structures (Albrecht, 2019; Carlin & Wallin, 2014; Holohan, 2023; Irwin, 2013; Rousell, 2017; Rousell et al., 2017; Rousell et al., 2020; Saldanha & Stark, 2016; Stein, 2022). Modernity presents itself in universal terms. But historicising the modern epoch enables a different type of engagement with the techne and concepts that emerged in the modern era. A "respectful anti-colonial engagement" (Rosiek et al., 2020, p. 331) includes taking traces (Derrida, 2016) from modernity (and elsewhere), while rejecting the fundamental ontology that separated subject from object, culture from nature, and assumed a position of anthropocentric mastery.

The idea of nonhuman agency is present in a number of conceptual apparatus, which aim to (re)engage with the intraconnection of things. These include poststructuralism (Foucault 1991; 1980; Lyotard, 1993; St Pierre, 2011; Lather, 2017), agential realism (Barad, 2007), new materialism (MacLure, 2018; Clarke & Mcphie, 2020), posthumanism (Braidotti, 2013), and indigenous cosmologies (Mika, 2017; Smith, 2000; Yunkaporta, 2019) amongst others (Rosiek et al., 2020). The metacrisis presents an opportunity for fundamental change (Irwin, 2022). It can shift perspectives and generate a new sense of purpose through the crafting of fresh narratives rooted in interdependence, compassion, and affirmative ethics.

The role of Environmental Education in the Metacrisis

With all the entangled elements of the metacrisis in mind, the role of environmental education, and education more generally is at a crucial crossroads. We can attempt to continue to situate education as the site for social reproduction, where skills such as reading, writing and arithmetic produce children well suited for a skilled modern workforce where they will become the next generation of voters, workers, and consumers. Or a deeper consideration of the ecological and social crisis in which we find ourselves will raise important questions about the norms of markets, innovation, and growth, about the role of rationality and mastery, and the lack of democratic voice and capture of power by powerful elites, that are reducing the scope for real challenge and change. In contrast to the transcendental universal claims of the Enlightenment, we are looking to better articulate a relational pedagogy that explores "the human/environment assemblage through a metaphysics of immanence" (Everth, 2024, p. 45).

Environmental education has traditionally focussed on specific ecological issues to forge a curriculum. These are important but on their own, are not enough. Tracing individual elements of the polycrisis, such as pollution or greenhouse gas emissions, to the metacrisis can lead to a radical reframing of human entitlement as part of environmental education. Environmental education could ask the difficult questions of what modern norms are compatible with our role within the network of planetary life. Much of our current actions impacting detrimentally on nature and society, and these impacts tend to remain unseen, and externalised. Environmental education can engage with the metacrisis when it makes the careless externalisation of environmental impacts of our actions explicit and internal to all considerations.

Transforming the metacrisis requires acknowledging humanity's interdependence with the morethan-human world. We propose that environmental education - with its long tradition of understanding society in intra-related connection with ecology - is essentially an umbrella term for framing education for a world beyond the metacrisis. Fundamentally, the metacrisis is the result of transcendental Humanist misconstruction of anthropos as superior to the environment - the morethan-human world (Braidotti, 2013). As Mcphie and Clarke (2015) argue, the turn to matter and the more-than-human world in environmental education "decolonializes, dehierarchicalizes, and deterritorialises essentialist conceptions of the human relationship to the environment" (p. 230).

The contributors to this special issue are invited to consider how to deterritorialise Enlightenment concepts, taking the best ideas about equality and fairness, and leaving behind the universal claims of human exceptionalism. We see the contributions to this special issue providing ideas that inspire education, in general, and environmental education, in particular, to reach beyond the catastrophist laments of the metacrisis.

Proposal

Surviving and eventually thriving beyond the 'event horizon' of the metacrisis is a make-or-break challenge for humanity and, implicitly, the ecosphere. Education research needs to respond to this challenge and assume the "driving seat of cultural transformation" (Irwin, 2020 p. 494). This special issue aims to promote this goal.

We invite submissions on a broad array of ideas that engage with the deterritorialisation of the metacrisis, from economics or resources, to philosophy of ideas, individual, community, and social arrangements. Understanding the metacrisis itself is an important step in opening up the looming finitude of modernity. Thinking about the future beyond the metacrisis opens the gates to genuine alternatives, new meaning, and hope. In turn, these ideas will shape the context and content of education.

We hold that education must play a central role in reaching beyond the metacrisis. Contributions to this special issue may explore critical anticipatory pedagogy (Amsler & Facer, 2017) and ways to support students in reflecting deeply on present and alternative worldviews (Kaufman et al., 2019). Contributors may connect with degrowth-pedagogies and explore radical utopian imaginaries (Kallis & March, 2015) for futures where societies dynamically stabilise around growth in conviviality, interconnectedness and solidarity (Kaufman et al., 2019) between humans and with respect to the more than human world that predicates our existence. Contributors may consider the patterns of cognition and languaging that contribute to the metacrisis dynamics and shape its cognitive and emotive shared experience (Deviatnikova, 2023; Hedlund, 2023; Henson et al., 2022).

Thinking 'beyond' the metacrisis requires the deterritorialisation of business-as-usual (IPCC, 1990). Contributing essays could explore the paradox between narratives of finitude and the concepts of progress and growth. The modern faith in exponential economic growth could be opposed to the seasonal cycles of growth and death. Contributors may consider the natural cycles of birth and death and how acceptance of personal and even societal finitude may assist in breaking the delusion of infinite life and growth. The metacrisis is connected to the celebration of individualism and the mechanisms of competition and self-centred growth phantasies. Accepting and contextualising finitude as a condition of renewal and cyclical patterns of life may open educative potentials in environmental education may point to pathways beyond the metacrisis (Lysgaard et al., 2019; Russell, 2017).

The Enlightenment conceives of the individual rational subject contrasted and isolated from natural objects as the basis of economics and education. The posthumanist paradigm shift finds value in posthuman (Braidotti, 2013; Murris, 2016), intra-connection (Kirby, 2007), and Indigenous concepts of *whakapapa* or ecological kinship (Reyes-García et al., 2024; Smith, 2000; Whyte, 2017, 2018, 2021).

Contributors may wish to look at sectors of the socio-ecological polycrisis to help explore the depths of the metacrisis, and how it could be overcome. This might engage with existing educational curriculum, or it may look at the overall context that shapes education, and upon which in turn, education participates and promotes. Importantly, articles will focus on the philosophy and potential direction underpinning a transformation in educational and society norms.

Contributors may want to consider how environmental education has been a springboard for the wider engagement of education with the existential issues of polycrisis. They may also consider the existing silos of education into subjects, faculties and departments as part of the problem that needs to be addressed. Deterritorialising education from the metacrisis is a necessary task for the entire field of education. We look forward to a diversity of responses to these large philosophical questions.

Timeline:

- Call for papers: August 2024
- Abstract proposals due: December 2024
- Manuscripts due: August 2025
- Publication of Special Issue: Volume 41 Issue 5 2025 (manuscripts published on FirstView asap)

Send abstracts emailed to: metacrisised@gmail.com

References:

Albrecht, G. A. (2019). Earth Emotions: New Words for a New World. Cornell University Press.

- Amsler, S., & Facer, K. (2017). Contesting anticipatory regimes in education: Exploring alternative educational orientations to the future. Futures, 94, 6– 14.https://doi.org/10.1016/j.futures.2017.01.001
- Baudrillard, J. (2008). Simulacra and Simulations. In The New Social Theory Reader (2nd ed.). Routledge.
- Bostrom, N. (2003). Are we living in a computer simulation? The Philosophical Quarterly, 53(211), 243–255. https://academic.oup.com/pq/article-abstract/53/211/243/1610975
- Braidotti, R. (2013). The Posthuman. Polity Press.
- Caporale, G. M., Claudio-Quiroga, G., & Gil-Alana, L. A. (2021). Analysing the relationship between CO2 emissions and GDP. Special Issue China: A fractional integration and cointegration approach. Journal of Innovation and Entrepreneurship, 10(1), 32 https://doi.org/10.1186/s13731-021-00173-5
- Carlin, M., & Wallin, J. (Eds.). (2014). Deleuze & Guattari, politics and education: For a people-yet-tocome. Bloomsbury.
- Ceballos, G., & Ehrlich, P. R. (2023). Mutilation of the tree of life via mass extinction of animal genera. *Proceedings of the National Academy of Sciences*, *120*(39), e2306987120. <u>https://doi.org/10.1073/pnas.2306987120</u>
- Clarke, D. A. G., & Mcphie, J. (2020). Tensions, knots, and lines of flight: Themes and directions of travel for new materialisms and environmental education. *Environmental Education Research*, *26*(9–10), 1231–1254. <u>https://doi.org/10.1080/13504622.2020.1825631</u>

- Colebrook, C. (2020). The Future is Already Deterritorialised. In R. Harrison & C. Sterling (Eds.), Deterritorialising the Future: Heritage in, of and after the Anthropocene (pp. 346–383). Open Humanities Press. <u>https://library.oapen.org/handle/20.500.12657/41204</u>
- Cooley, S., Shin, S., Cooley, A., & Avance, R. (2023). *Moloch, the Meta-crisis, and Integrated Nuclear Deterrence*. MESA.
- Deleuze, G. & Guattari. F (1999). *A thousand plateaus; capitalism & schizophrenia,* Brian Massumi (trans.), (orig publ. 1980), Athlone Press.
- Derrida, J. (2016) Of Grammatology, Baltimore: John Hopkins University Press.
- Deviatnikova, K. G. (2023). Permacrisis, Metacrisis, Polycrisis: Determining the Nature of the Phenomena Using Semantic Analysis. Современное Педагогическое Образование, 1, 365– 370. <u>https://cyberleninka.ru/article/n/permacrisis-metacrisis-polycrisis-determining-the-nature-of-the-phenomena-using-semantic-analysis</u>
- Everth, T. (2024). *Teacher identity, activism, and empowerment: Entanglements with Climate in Aotearoa, New Zealand* [PhD Thesis, University of Waikato]. DOI: 10.13140/RG.2.2.13602.85443
- Foucault, M. (1980). *Power/Knowledge: Selected Interviews and other writings 1972-1977,* Colin Gordon, (ed.), BrightonHarvester Press.
- Foucault, M. (1991). Governmentality in Graham Burchell, Colin Gordon & Peter Miller (ed.s). *The Foucault Effect; Studies in Governmentality.* Chicago: University of Chicago Press, 87-104.
- Hansen, James, Makiko Sato, Leon Simons, Larissa Nazarenko, Isabelle Sangha, Karina von Schuckmann, Norman Loeb, Matthew Osman, Qinjian Jin, Pushker Kharecha, George Tselioudis, Eunbi Jeong, Andrew Lacis, Reto Ruedy, Gary Russell, Junjii Cao, Jing Li (2023) Global warming in the pipeline. *Oxford Open Climate Change*. Available at http://www.columbia.edu/~jeh1/Documents/PipelinePaper.2023.07.05.pdf
- Hedlund, N., Esbjörn-Hargens, S., Hartwig, M., & Bhaskar, R. (2015). Introduction: On the deep need for integrative metatheory in the twenty-first century. In *Metatheory for the Twenty-First Century*. Routledge. <u>https://www.taylorfrancis.com/chapters/edit/10.4324/9781315689333-</u> <u>1/introduction-nicholas-hedlund-sean-esbj%C3%B6rn-hargens-mervyn-hartwig-roy-bhaskar</u>
- Hedlund, N. H. (2023). Visionary realism and the emergence of a eudaimonistic society: Metatheory in a time of metacrisis [PhD Thesis, UCL (University College London)]. <u>https://discovery.ucl.ac.uk/id/eprint/10169200/</u>
- Heidegger, M. (1977). *The question concerning technology and other essays.* (W. Lovitt, Trans.). New York: Harper and Row.
- Heidegger, M. (1999). On the Question of Being, *Über "Die Linie*" (orig. 1955). *Pathmarks* (ed. and trans.) William McNeill, Cambridge University Press, pp. 291-322.
- Henson, J., Henson, A., Henson, B., & Henson, S. (2022). Metacrisis of Meaning: Seeking Nature through Symbolic Metalanguage. *Nature: Animal, Moral, Technological*. 2022 Association of Philosophy and Literature Conference, Banff, Alberta, Canada. <u>https://core.ac.uk/download/pdf/533479194.pdf</u>
- Holohan, K. J. (2023). Cartography of the Present: The Meaning Crisis and Maps for the Future. *Journal of Social Justice*, 11.

- IPCC, wg1. (1990). *Policymakers Summary*. IPCC. https://www.ipcc.ch/site/assets/uploads/2018/03/ipcc_far_wg_l_spm.pdf
- Irwin, R. (2008). Heidegger, Politics and Climate Change: Risking It All. (1st ed.). London: Continuum.
- Irwin, R. (2013). Ecological ethics in the context of climate change: Feminist and indigenous critique of modernity. *International Social Science Journal, 64*(211–212), 111–123.
- Irwin, R. (2020) Climate Change and Education. *Educational Philosophy and Theory*, 52(4), pp. 492-507. <u>https://doi.org/10.1080/00131857.2019.1642196</u>
- Irwin, R. (2022). Idealist Individualism or Indigenous Cosmology; Finding Entanglement across Species and Strata. *Religions*, *13*(12), Article 12. <u>https://doi.org/10.3390/rel13121193</u>
- Irwin, R. (2024 forthcoming). *Economic Futures: Climate Change and Modernity*. London: Routledge.
- Kallis, G., &; March, H. (2015). Imaginaries of Hope: The Utopianism of Degrowth. Annals of the Association of American Geographers, 105(2), 360–368. https://doi.org/10.1080/00045608.2014.973803
- Kaufmann, N., Sanders, C., & Wortmann, J. (2019). Building new foundations: The future of education from a degrowth perspective. *Sustainability Science*, 14(4), 931–941. https://doi.org/10.1007/s11625-019-00699-4
- Lather, P. (2017). (Post)critical methodologies: The science possible after the critiques: The selected works of Patti Lather. New York, NY: Taylor & Francis.
- Lawrence, M., Homer-Dixon, T., Janzwood, S., Rockstöm, J., Renn, O., & Donges, J. F. (2024). Global polycrisis: The causal mechanisms of crisis entanglement. *Global Sustainability*, 7, e6. <u>https://doi.org/10.1017/sus.2024.1</u>
- Lim, X. (2021). Microplastics are everywhere—But are they harmful? *Nature*, *593*(7857), 22–25. <u>https://doi.org/10.1038/d41586-021-01143-3</u>
- Lyotard, J-F. (1993). *The Postmodern Condition: a report on knowledge,* Geoff Bennington & Brian Massumi (transl.) (original publ. 1979). Minneapolis: University of Minnesota Press.
- Lysgaard, J. A., Bengtsson, S., & Laugesen, M. H.-L. (2019). *Dark Pedagogy: Education, Horror and the Anthropocene*. Springer International Publishing. <u>https://doi.org/10.1007/978-3-030-19933-3</u>
- MacLure, M. (2018). The "new materialisms": A thorn in the flesh of critical qualitative inquiry? In G.
 S. Cannella, M. S. Pérez, & P. A. Pasque (Eds.), *Critical qualitative inquiry: Foundations and Futures* (pp. 93-112). Walnut Creek, CA: Left Coast Press.
- McKenzie, M., & Benavot, A. (2024). Climate change and sustainability in science and social science secondary school curricula. UNESCO. <u>https://doi.org/10.54675/NDFI7173</u>
- Mcphie, J., & Clarke, D. A. G. (2015). A Walk in the Park: Considering Practice for Outdoor Environmental Education Through an Immanent Take on the Material Turn. *The Journal of Environmental Education*, 46(4), 230–250. <u>https://doi.org/10.1080/00958964.2015.1069250</u>
- Merchant, C. (2005). *Radical Ecology: The Search for a Livable World* (2nd ed.). Routledge. https://doi.org/10.4324/9780203084212

- Mika, C., (2017). *Indigenous Education and the Metaphysics of Presence: A Worlded Philosophy*. Oxon: Routledge.
- Milbank, J., & Pabst, A. (2015). The meta-crisis of secular capitalism. *International Review of Economics*, 62(3), 197–212. <u>https://doi.org/10.1007/s12232-015-0239-7</u>
- Mitić, Peter, Aleksandra Fedajev, Magdalena Radulescu & Abdul Rehman (2022). The relationship between CO₂ emissions, economic growth, available energy, and employment in SEE countries. *Environmental Science and Pollution Research*, *30*, 16140-16155.
- Murris, K. (2016). #Rhodes must fall: A posthumanist orientation to decolonising higher education institutions. *South African Journal of Higher Education*, *30*(3), 274–294. <u>https://doi.org/10.20853/30-3-653</u>
- Noll, M. (2023). Exponential life threatening rise of the global temperature. *Earth ArXiv*, available at <u>https://eartharxiv.org/repository/view/5420/</u>. Downloaded 18/06/2023.
- Onofrei, M., A.F. Vatamanu & E. Cigu. (2022) The Relationship Between Economic Growth and CO₂ Emissions in EU Countries: A Cointegration Analysis. *Frontiers in Environmental Science, 10.*
- Plumwood, V. (2005). Environmental culture: The ecological crisis of reason. Routledge. <u>https://www.taylorfrancis.com/books/mono/10.4324/9780203996430/environmental-</u> <u>culture-val-plumwood</u>
- Reyes-García, V., García-del-Amo, D., Álvarez-Fernández, S., Benyei, P., Calvet-Mir, L., Junqueira, A.
 B., Labeyrie, V., Li, X., Miñarro, S., Porcher, V., Porcuna-Ferrer, A., Schlingmann, A., Schunko,
 C., Soleymani, R., Tofighi-Niaki, A., Abazeri, M., Attoh, E. M. N. A. N., Ayanlade, A., Ávila, J. V.
 D. C., ... Zakari, I. S. (2024). Indigenous Peoples and local communities report ongoing and
 widespread climate change impacts on local social-ecological systems. *Communications Earth & Environment*, 5(1), 1–10. https://doi.org/10.1038/s43247-023-01164-y
- Ritchie, H., & Roser, M. (2024). More people care about climate change than you think. *Our World in Data*. <u>https://ourworldindata.org/climate-change-support</u>
- Rosa, H. (2013). *Social Acceleration: A New Theory of Modernity* (J. Trejo-Mathys, Trans.). Columbia University Press.
- Rosiek, J. L., Snyder, J., & Pratt, S. L. (2020). The New Materialisms and Indigenous Theories of Non-Human Agency: Making the Case for Respectful Anti-Colonial Engagement. *Qualitative Inquiry*, 26(3–4), 331–346. <u>https://doi.org/10.1177/1077800419830135</u>
- Russell, J. (2017). "Everything has to die one day:" children's explorations of the meanings of death in human-animal-nature relationships. *Environmental Education Research*, 23(1), 75–90. https://doi.org/10.1080/13504622.2016.1144175
- Rousell, D., Cutter-Mackenzie, A., & Foster, J. (2017). Children of an Earth to Come: Speculative Fiction, Geophilosophy and Climate Change Education Research. *Educational Studies*, *53*(6), 654–669. <u>https://doi.org/10.1080/00131946.2017.1369086</u>
- Rousell, D., & Cutter-Mackenzie-Knowles, A. (2020). A systematic review of climate change education: Giving children and young people a 'voice' and a 'hand' in redressing climate change. *Children's Geographies*, *18*(2), 191–208. <u>https://doi.org/10.1080/14733285.2019.1614532</u>

- Rowson, J. (2021). *Metacrisis. Perspectiva Press.* <u>https://systems-souls-society.com/wp-content/uploads/2021/02/Tasting-the-Pickle-Ten-Flavours.pdf</u>
- Saldanha, A., & Stark, H. (2016). A New Earth: Deleuze and Guattari in the Anthropocene. *Deleuze Studies*, *10*(4), 427–439. <u>https://doi.org/10.3366/dls.2016.0237</u>
- Schmachtenberger, D., McGilchrist, L., & Vervaeke, J. (2023). *The Psychological Drivers of the Metacrisis* [Interview]. <u>https://www.youtube.com/watch?v=-6V0qmDZ2gg&t=4348s</u>
- Schmachtenberger, D. (2024). A Vision for Betterment (N. Hagens, Interviewer) [Interview]. https://www.youtube.com/watch?v=tmusbHBKW8455
- Smith, Takirirangi (2000) Nga Tini Ahuatanga o Whakapapa Korero. *Educational Philosophy and Theory*, vol. 32, no.1, pp. 53-60.
- Smith, Adam (1904) An Inquiry into the Nature and Causes of the Wealth of Nations ed. Edwin Cannan (orig. 1776) London: Methuen and Co.
- St. Pierre, E. A. (2011). Post qualitative research: The critique and the coming after. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative* research Thousand Oaks, CA: Sage. pp. 611-635.
- Stein, S., Andreotti, V., Ahenakew, C., Suša, R., Valley, W., Huni Kui, N., Tremembé, M., Taylor, L., Siwek, D., Cardoso, C., Duque, C. 'Azul,' Oliveira da Silva Huni Kui, S., Calhoun, B., van Sluys, S., Amsler, S., D'Emilia, D., Pigeau, D., Andreotti, B., Bowness, E., & McIntyre, A. (2023). Beyond colonial futurities in climate education. *Teaching in Higher Education*, *28*(5), 987– 1004. <u>https://doi.org/10.1080/13562517.2023.2193667</u>
- Stein, Z. (2022). Education is the Metacrisis: Why it's Time to see Planetary Crises as a Species-Wide Learning Opportunity. Perspectiva. https://systems-souls-society.com/education-is-the-metacrisis/
- Whyte, K. (2017). Indigenous climate change studies: Indigenising futures, decolonising the Anthropocene. *English Language Notes*, *55*(1), 153–162. <u>https://www.muse.jhu.edu/article/711473</u>
- Whyte, K. (2018). Indigenous science (fiction) for the Anthropocene: Ancestral dystopias and fantasies of climate change crises. *Environment and Planning E: Nature and Space*, 1(1–2), 224–242. <u>https://doi.org/10.1177/2514848618777621</u>
- Whyte, K. (2021). Indigenous Realism and Climate Change. In L. Badia, M. Cetinic, & J. Diamanti (Eds.), *Climate realism: The aesthetics of weather and atmosphere in the Anthropocene*. Routledge, Taylor & Francis Group
- Willems-Braun, B. (Ed.). (2018). Futures: Imagining Socioecological Transformation. Routledge. https://doi.org/10.4324/9781315618548
- Yunkaporta, Tyson. (2019). Sand Talk: How Indigenous Thinking Can Save the World. London: The Text Publishing Company.

Guest Editor Bios

Ruth Irwin has been a Professor of Education at the University of Aberdeen and the University of Fiji. She has published two monographs and three edited collections, along with the joint book *Wild Pedagogies. Heidegger, Politics and Climate Change* was published with Bloomsbury in 2008. The collection *Climate Change and Philosophy* came out with Bloomsbury in 2010. A coedited book with Martin Thrupp called *A Handbook of New Zealand Educational Policy* came out the same year. In 2014, Ruth coedited *Beyond The Free Market,* published with Dunmore Press. Her latest book is in press with Routledge and is titled *Economic Futures: Climate Change and Modernity.* Her next book is called *Nihilism: On Climate Change.* She has written over 60 articles that are published in 4* peer reviewed journals or books.

Thomas Everth obtained a master's degree in Physics in Germany, had a career in the IT-Industry, and worked as a science and mathematics teacher in New Zealand before completing a PhD in Education at the University of Waikato, undertaking research on climate activist secondary school teachers. His research output includes publications on the application of Deluzoguattarian philosophy on climate change education, the assemblages of school leadership, and the application of quantum decoherence theory to Barad's Agential Realism. Thomas is currently a lecturer at EcoQuest, Centre for Indigeneity, Ecology, and Creativity in New Zealand.