



PALGRAVE STUDIES IN
EDUCATIONAL FUTURES

Pedagogy in the Anthropocene

Re-Wilding Education for a New Earth

Edited by
Michael Paulsen · Jan Jagodzinski
Shé M. Hawke

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Palgrave Studies in Educational Futures

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The series Educational Futures would be a call on all aspects of education, not only specific subject specialists, but policy makers, religious education leaders, curriculum theorists, and those involved in shaping the educational imagination through its foundations and both psychoanalytical and psychological investments with youth to address this extraordinary precarity and anxiety that is continually rising as things do not get better but worsen. A global de-territorialization is taking place, and new voices and visions need to be seen and heard. The series would address the following questions and concerns. The three key signifiers of the book series title address this state of risk and emergency:

1. **The Anthropocene:** The ‘human world,’ the world-for-us is drifting toward a global situation where human extinction is not out of the question due to economic industrialization and overdevelopment, as well as the exponential growth of global population. How to we address this ecologically and educationally to still make a difference?
2. **Ecology:** What might be ways of re-thinking our relationships with the non-human forms of existence and in-human forms of artificial intelligence that have emerged? Are there possibilities to rework the ecological imagination educationally from its over-romanticized view of Nature, as many have argued: Nature and culture are no longer tenable separate signifiers. Can teachers and professors address the ideas that surround differentiated subjectivity where agency is no long attributed to the ‘human’ alone?
3. **Aesthetic Imaginaries:** What are the creative responses that can fabricate aesthetic imaginaries that are viable in specific contexts where the emergent ideas, which are able to gather heterogeneous elements together to present projects that address the two former descriptors: the Anthropocene and the every changing modulating ecologies. Can educators drawn on these aesthetic imaginaries to offer exploratory hope for what is a changing globe that is in constant crisis?

The series Educational Futures: Anthropocene, Ecology, and Aesthetic Imaginaries attempts to secure manuscripts that are aware of the precarity that reverberates throughout all life, and attempts to explore and experiment to develop an educational imagination which, at the very least, makes conscious what is a dire situation.

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Editors

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To our children and grandchildren

PREFACE

The idea for this book arose in the spring of 2020. It began when one of us, Michael Paulsen, in December 2019 wanted to join the conference “Anthropocene—Reworking the Wound” in Katowice, Poland on June 17 to June 20, 2020, and offered to chair a panel session on “Pedagogies of the Anthropocene (s)”. The conference organizers, Ania Malinowska and Karolina Lebek, then wrote back affirmatively, after which Michael began to look for researchers to join the panel. The interest was indeed great, and already on January 10, 2020, we registered four panel sessions with a total of 20 researchers from around the world. Everyone was very excited to meet in Katowice. However, then COVID-19 pandemic came—the physical version of the conference was canceled, although some panels continued virtually. However, one of the panelists, Jan Jagodzinski, suggested that we “instead” transmute the panels into a book on Pedagogy and the Anthropocene. There seemed to be enough interest to reach the group that was to appear at the conference sessions. ‘I edit a series for Palgrave press called Educational Futures’, Jan told Michael. Michael agreed to co-edit and wrote to the panelists to garner interest for such a book project. Most responded with a yes! One panelist, Shé Hawke, had been considering editing a Special Journal Issue on the Anthropocene and Inter-disciplinarity, with Reingard Spannring, and offered to consolidate editing energy into one robust and diverse book. As Reingard was now involved in another book, our editing team of three got to work. We drafted a proposal for Palgrave, which led to the publishing contract for us, for which we are extremely grateful. A huge thank you goes to Milana Vernikova, Antony Sami and everyone at Palgrave who helped with the

execution of the book. Many thanks also to both the original panelists and the authors of the 16 chapters of this book. It has been a fantastic journey, with valued commitment from so many good people full of energy and passion for the project. Many of us have yet to meet in person, but we are not strangers to one another's work, or our shared commitment to a 'new earth'.

Odense, Denmark
Edmonton, AB, Canada
Koper, Slovenia
August 2021

Michael Paulsen
jan jagodzinski
Shé M. Hawke

Praise for *Pedagogy in the Anthropocene*

“Much has been written about the Anthropocene but surprising little about its implications for education. This book tackles that fundamental issue head-on. The definitions and interpretations of the Anthropocene are vast, but they all point towards the same formidable challenge—we need to examine who we are and what relationship we should have with the rest of the planet. The next generations will feel the full force of the Anthropocene, so there is nothing more important than preparing them for the uncertain future of the human epoch.”

—Will Steffen, Emeritus Professor, *The Australian National University, Canberra*

“This book, written by authors of passion and conviction, charts pedagogical pathways for an unknown future. The offerings range from those who believe that the future is dark yet hold a flickering torch of hope, others who believe that our hope for the future lies in our ability to re-member, re-new, re-gain our deep relationality to all species, to re-wild and re-pair the extraordinary damage that we have done to the beautiful planet we call home, and those whose call is to re-vitalize our spiritual consciousness and connection to the nonhuman and more-than-human world. Wherever we are on this continuum, this book points to critical pedagogies for a liveable future—for our children, for our grandchildren and for our more-than-human relations. It is a much-needed and magnificent book. I am honored to write its endorsement.”

—Makere Stewart-Harawira, Professor, *Faculty of Education, University of Alberta, Canada*. Dr. Stewart-Harawira is of Māori and Scots descent, her primary iwi affiliation being Waitaha ki Te Waipounamu. She is the author of *The New Imperial Order: Indigenous Responses to Globalization*.

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A Critical Introduction

Michael Paulsen, Jan Jagodzinski, and Shé M. Hawke 

We now live in the geological epoch called the Anthropocene (Crutzen & Stoermer, 2000; Steffen et al., 2011; Zalasiewicz et al., 2008; Steffen et al., 2016; Morton, 2016; Sørlin, 2017; Ellis, 2018). In this age, Anthropos, through human activities, technologies and alterations of the global environment have begun to affect the whole life-critical zone of the Earth more than ever before, and more than anything else (Lin, 2010; Latour, 2017). The consequences are many: “the great acceleration” of technology, industry, agriculture, and an over-use of natural resources (McNeill & Engelke, 2016), mass extinctions (see for example Chap. 2), global warming (Oreskes & Conway, 2011), collapse of eco-systems

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(Steffen et al., 2006), and the spread of pandemics and multi-resistant bacteria. All this promises an ever more impoverished earth if we continue along the prevailing trajectory. Innovative, integrated, achievable, and inclusive pedagogical intervention into climate change and Anthropocene damage, form the two-pronged yet intertwined focus of this collection.

INTEGRATED PEDAGOGY

Let us begin with the pedagogical stream of this collection. The overarching question for this aspect of the book is how transformations in pedagogy and education can change the face of the earth for the better.

We have intentionally invited scholars from pedagogy and beyond, to develop potent intersections with other scientific inquiries, and creative industries. For a more enlightened—or re-enlightened—sustainability praxis in the educational domain, in both the school and with the public, we engage inclusively with cultural and research fields, and ethico-political-critical pedagogy, as a significant focus of this collection of essays. Innovation and integration alongside disruption and challenge, form equally important parts of the book's direction and intention.

Pedagogy, and by extension language, ontology, and epistemology, is predicated by our social, cultural, and geographic situatedness and conjunctions. Even in the western world, the variance in teaching practice and curriculum is vast. But what has been observed in recent decades—partly because of the increase in digital cultures—is that learning and teaching is less-often enacted outside the classroom than in previous decades (Spannring & Hawke, 2021), and less-often cross pollinated with other cultural systems of knowledge. A return to First Nations' invitation to dialogue about cross-cultural sustainability learning practices is now increasing. This has perhaps been provoked by the planetary perils and catastrophes brought on by the Anthropocene Epoch and its hyper-productive agricultural practices, deforestation, and the residual effects of colonization and imperialism (Stewart-Harawira, 2012). While comprehensive cross-cultural engagement with pedagogical practices is beyond the scope of this collection, several chapters reference, and engage deeply with such ontology and pedagogy (see for example Chaps. 3 and 10) from the northern hemisphere to Australia in the deep south. Such critical pedagogies and cartographies of place, add valued dimensions to sustainable pathways in which culture and the environment converge.

THE ANTHROPOCENE

‘The ‘Anthropocene’ ... is the current working term to describe anthropogenic changes since the late Holocene Geological Epoch. It is the language used by scientific and research organizations such as UNEP, and the European Commission, and refers to the current geological age, beginning with the Industrial Revolution’ (Spanning & Hawke, 2021, 3). Yet not all fields agree on the term, its date of birth, or its applied application across the sciences. For purposes of delineation, we outline below some of the challenges and contestations about the term Anthropocene, and its understanding in both scholarly and everyday life, as they relate to the provocations presented in this book.

By manifold anthropogenic effects—including uncontrollable domino-effects, negative feedback loops, and further non-intended consequences (Tønder, 2020)—humankind has ended the geological epoch called “the Holocene”, an unusual climatically stable period beginning about 11,500 years ago, after the last Ice age (Crutzen & Schwägerl, 2011). In the Holocene epoch (the forerunner of the Anthropocene), all human civilization—including cities, agriculture, democracy, science, and capitalism—developed, under climatically favorable conditions, which are now undermined by the very same development and its excessive consequences (see for example Chap. 11). DNA nanotechnology and other new inventions have made it possible to change and reshape the conditions of earthly life, to an incomprehensible and unpredictable extent (see for example Chap. 8). Thus, in all strata of the life-critical zone, from nano to macro global planetary level, human activities now reshape the earthly conditions of life (Zalasiewicz et al., 2016, 2017). This has also led to the collapse of the old western distinction between cultivated land (the world of *nomos* and culture) and uncultivated wild areas (the world of *physis* and nature)—a distinction that has now deconstructed itself (Marris, 2011; Oppermann & Iovino, 2017; Emmett & Nye, 2017; Latour, 2018; Paulsen, 2021a). We now live in a world where the effects of humans can be found everywhere—result: the end of (untouched) nature (e.g., Mckibben, 2006; Morton, 2009) as we have known it.

The key ethical-political-pedagogical question of today is not so much how to change the world, but how to change it less, or in ways that are less harmful to it (see Purdy, 2015); to partner with nature rather than work against it (Spanning & Hawke, 2021)—towards a new earth. In a comparatively short time in Earth history, the zone slightly above and below

the surface of the earth (Latour, 2017) has been reshaped to meet human needs, pointing towards the making of an artificial and human manipulated world; a ‘man’s world’ one could say—the world of *Anthropos*, where a total ecological breakdown, threatens to remove the foundation of this world. Thus, we live in a time of transition and risk, but perhaps also in a world that has moved off the edge of history (Giddens). We are no longer living in a late modern society, in distinction to modern and premodern societies. This self-understanding has become obsolete, because it does not take account of what it set in the background, our interrelatedness and entanglement (for good and for worse) with our environment, i.e., the rest of life’s critical zones, the multi-species and more-than-human world. While the concept of late modernity places us only in human history, seeing ‘nature’ as a mere background as a ‘scene’ for human development, the story of the Anthropocene inscribes our species in a larger earthly history, which opens a whole new view of ourselves, our past, present, and future, here on Earth (Paulsen, 2021b; Spannring & Hawke, 2021). This story tells us that we have become re-shapers of the earth, but with many overwhelmingly negative consequences for the life of the planet, including ourselves.

THE CONTESTED ANTHROPOCENE

Yet, the Anthropocene is a contested concept (see Paulsen, 2021c) and rejected outright by some (e.g., Malm & Hornborg, 2014), while others argue that it is inadequate and needs to be complemented by other stories (Haraway, 2016). Thus, two of the main objections to the Anthropocene story are: (1) that it gives humans/*Man* too big a role in earth history, by focusing on *Anthropos* (Haraway, 2016) and (2) that it blames humanity as such, while some humans and some human activities are much more guilty/damaging than others. For example, the industrialized world and owners of fossil-fuel driven activities (Moore, 2015) (see also Chap. 2). Our retort to the first objection is that it is precisely human industry and activities that have created the negative effects (Morton, 2017). Against the second objection we would extend the contestation to include more-than-humans and marginalized human communities, globally (Spannring & Hawke, 2021). This creates a double entanglement in its specific asymmetrical and contemporary forms, e.g., capitalistic, consumer-oriented, with inequality between both ‘humans and humans’ and ‘humans and

more-than-humans', that makes up the Anthropocene situation we now live in (Braidotti, 2013; Paulsen, 2021b).

The important thing here, however, is not whether some are right, and others are wrong, but rather that different understandings of the Anthropocene and different confirmations and rejections of the story—and so *eo ipso* of the time and situation we now live in—have political, ethical, practical, and pedagogical consequences. Or perhaps better stated: How one responds to the Anthropocene is framed by how one understands the world (and crisis) we live in. Depending on how we understand our current age, past and future, different solutions and paths might come to the fore, as many of the chapters in this collection demonstrate. Some chapters argue for the need of a radical change as a response to the Anthropocene (see for example Chap. 8), while others suggest more moderate rethinking and adjustments of our Holocene institutions (see for example Chap. 16).

There is also the further dimension of shifting away from *being* human-centred to *becoming* more life-centred (Chakrabarty, 2015). Numerous other options are available, such as: the hope we can solve the planetary crisis by advancing green technology, improving the environment-making state and regain our control of the spaceship/spaceship Earth (Parenti, 2015) often found in political rhetoric, which others see as either human hubris or as an outright dystopic image of the world to come, a totally artificial and man-made *Technopolis* (to use a term coined by Postman, 2011). Some of the critics of such control-regimes want to roll back culture and thus “go back to nature”, before we civilized everything (c.f. the re-wild movement); others (still!) deny that climate changes and other planetary calamities are serious problems, thus wanting to keep on with business as usual, in schools and elsewhere (see for example Chap. 15). There is also the backdrop of fossil fuel capitalism being the main driver, which creates the call for a needed solution that is a social revolution (Malm, 2014). Moreover, some of the chapters in this collection are optimistic and project utopias and active hope (see for example Chap. 12) or think that the ‘anthropocene recognition’ might open the space for cultivating and enjoying a wider range of life-possibilities and ways of life than in the late Holocene (see for example Chap. 11); while others are pessimistic and forecast dystopia and catastrophe, which might already have happened: we are ‘in’ it (see for example Chap. 6 and Morton, 2016). Such differences are reflected in the pedagogical responses to the Anthropocene, unfolding within a spectrum from light and optimistic

pedagogies to dark and horror-acknowledging pedagogies (Lysgaard et al., 2019).

The Anthropocene term, despite coming out of geological science, has also spread to other disciplines and areas, including humanities and social science. It has also become a popular concept and attractor outside of academia, for example in creative industry such as art exhibitions (Davis & Turpin, 2015) and in pop music (for example the 2020 album *Miss Anthropocene* by Grimes, and Bjork's 2011 album and app *Biophilia* that turns the focus the other way, to name a few). This means that we cannot take for granted what we understand by the term 'Anthropocene'. One might even conclude that the term is so ambiguous that it is not useful. Or, that we should settle for the geological definition of the Anthropocene only. Yet we take the ambiguity of the concept as an advantage because of its great rhizomatic and transversal capacity. It has become a meeting point of so many different understandings, enterprises, controversies, discussions, and conflicts, both within and across different sciences, and attracted huge attention outside of academia as well (Latour, 2017). The aim of this critical introduction to pedagogy in the Anthropocene is therefore to explicate its immanent complexity. Further, we indicate that different pedagogical responses to the age we are now living in depend on what parts of the Anthropocene story are narrated, accounted for, and legitimated based on different worldviews and outlooks, theoretical and practical inclinations, and preferences. We fulfil this task in the following, by emphasizing four controversies of the Anthropocene.

Controversy # 1: When Did It All Start?

Although there have been forerunners in the late Holocene, it is only now that we really see and acknowledge that we are in an earth-historical border situation, with several phenomena that signify a transition from the Holocene that is ebbing out, to the Anthropocene, which is about to open. It is not "only" about the climate crisis and global warming, but about the entire life zone transformed throughout the Holocene, the great acceleration, the sixth mass extinction, the biodiversity crisis and much more, including its full acknowledgement. Only today, when life is more threatened than ever in the history of mankind, do we begin—more comprehensively—to understand ourselves as also living in an earth zone, and not just as citizens of society. However, a question now arises: When exactly does the Anthropocene era begin?

In one sense, the Anthropocene (understood as man mega-influencing overall life on earth) begins with the agrarian revolution that unfolds at the beginning of the Holocene era. However, the Anthropocene is reinforced with the Industrial Revolution (from 1750) and further with nuclear explosions and the great acceleration (of, among other things, resource consumption from 1945). In a slightly different sense (namely understood as recognition of ourselves as earthly and in the process of destroying all earthly life), one might highlight events such as lunar landings (1969), where we see the earth from the outside and the very naming of the Anthropocene era (2000). For us, however, it is not important to settle upon one exact start date. You can also not set an exact date on the modern or late modern.

More importantly, the belief that we are *now* living in the Anthropocene, is more unshakable than ever before. Most importantly, should we be aware of how different start dates frame different historical understandings, and therefore also understand what has given rise to our current situation? If, for instance, one thinks that the Anthropocene started with the agrarian revolution, the inventing of agrarian religions and what Morton (2018) calls “agricultural civilization” and “agrilogistics”, it most likely implies that the adequate political, practical, ethical, and pedagogical response today will be to cancel and/or rethink monocultural agriculture, including all the societal institutions build around agrilogistical values and worldviews. This, for instance, could also imply a critique of the mainstream western (idea of the) school (including academia) as being understood itself mainly as a kind of agricultural treadmill, treating students as seeds to be cultivated and sorted in artificially made “greenhouses”—schools—as automated instruments, separated from everything else. Here, an understanding of education as taming of what is otherwise ‘wild’ (see for example Chap. 3) becomes apparent.

If, on the other hand, the starting date of the Anthropocene is identified with the industrial revolution and the rise of modern capitalism, from 1750 on onwards, it is more likely that one responds by criticizing capitalistic structures and the tight link between a capitalistic society, the school, and the damaging effects on the environment. This might also include a critique of the industrial view of the school, framing schools as factory halls and students as products produced by the society to meet societal needs, especially in relation to the labor market; transforming human beings into a workforce, human capital, a mere manipulable resource (see for example Chaps. 7 and 8) on a production line of life. Finally, if one sets

the Anthropocene to start around 1945 or early 1950s, with nuclear proliferation and testing and many new technological inventions such as the modern computer (1936), the lunar landings (1969), and so-called modern agriculture, it is more likely to see modern science and technology as the great cause of the anthropogenic effects. This then enacts an option for political, practical, ethical and pedagogical responses that criticize and counter the increasing instrumentalization, technification and scientific management of both humans and the earth, as well as the school (see for example Chaps. 7, 11 and 13).

To agree on one specific start date therefore, is not necessarily the 'most' crucial factor. Rather, it can be an advantage to think and act on the basis of a multi-stranded understanding of history, so that, for example, both agrarian logic, capitalist logic and technical-scientific logic, all of which are important layers in the Holocene, are exposed to criticism and constructive alternatives. These can then be translated into (among other things), better pedagogical practice, supporting future generations to dissolve these Holocene logics, and to replace them with better approaches to life here on earth.

Controversy # 2: The Name of the Game

Two key objections have been raised to *designating* the time we live in as the Anthropocene.

Firstly, it has been objected that not all humans are equally guilty of its negative consequences (Moore, 2015, 2016; Malm, 2016). Global fossil companies and rich people are especially guilty, much like the unequal distribution as to who should take responsibility for the problems. However, objectionists have asserted that it is not fundamentally humanity as such (and thus the species *homo sapiens*) that are the cause of global warming, but a capitalist way of relating to the world that has spread from Europe to the entire globe from around the fifteenth century onwards. The story of the Anthropocene is too superficial, as it does not dive into the specific capitalist relations between humans and the more-than-human world that capitalism exploits. Instead of such a specific mosaic of relationships, Anthropocene history speaks only of an abstract homogeneous acting entity—humanity—facing the great forces of nature. The concept of the Anthropocene therefore implies, critics say, a reductionist narrative in which humanity as a collective actor faces Nature. It means that one conceptualizes the Anthropocene from a catalogue of geological and

biospherical consequences, while what leads to these consequences appears as a black box consisting of categories such as industrialization, urbanization, population growth, and so forth.

These two features: (1) that humanity is abstractly seen as a cause, and (2) the Anthropocene is based on consequences for nature—implies a Cartesian dualism, where the world is divided into separate domains: human activities in one box, and nature in another. Such a narrative has political-pedagogical consequences: it draws attention to technical variables such as population growth and technologies for dealing with the challenges that have arisen. Part of this narrative is that the Anthropocene starts with coal and steam engines in mid-eighteenth century England. If, instead of periodizing based on external consequences, its emergence was placed in relation to capitalist structures and relations, then its decisive beginning is as early as the fifteenth century; politically, its these relations and structures that must be overcome. Having an eye for the origins of capitalism in early modernity and its extraordinary transformation of culture and nature before the steam engine, is therefore politically crucial, as our understanding of the origins of problems affects how we choose to respond pedagogically. Such a critique of capitalism questions the resource and technology determinism embedded in the concept of the Anthropocene. The concept of *the Capitalocene* focuses on the fact that today we live in a time shaped by structures that privilege an endless accumulation of capital. The hope in this critique is that the Anthropocene is not to be conceptualized by and through external consequences, but based on which structures produce these consequences.

We agree in principle—and to some extent—with this critique. *If* the Anthropocene is simply understood as a boxing match between Man and Nature, and viewed from the consequences, then one has both a weak and politically-pedagogically problematic concept of the Anthropocene. We have argued in this collection, one can well thematize that it is not Man abstractly theorized that is the cause, but specific assemblages of unequal and asymmetrical intricacies of ‘humans and humans’ and ‘humans and non-humans’ that result in negative effects. In the above critique, emphasis is placed on the fact that these intricacies have increasingly assumed a capitalist format since the fifteenth century. We do not necessarily disagree with this, but will nevertheless suggest that one should trace the cause a layer deeper, namely down to the underlying human-centred worldview developed especially in western culture, including and perhaps especially in the Renaissance (Paulsen, 2021b) (see further in Chap. 11). The

advantage of such deeper explanations, among other things, is that it becomes possible to explain that structures other than specifically capitalist ones can also rest on the same worldview, and therefore have many similar negative consequences; for instance, the major environmental deficits in the planned economic arrangements in the so-called communist countries. This also makes it clear why a mere critique of capitalism is politically-pedagogically inadequate as it does not really penetrate to the underlying worldview and the need to change it. Yet it must be considered as part of the bigger picture (see for example Chaps. 7 and 8). Furthermore, the concept of the *Capitalocene*—as an alternative term preferred by some to the Anthropocene—has the added problem that it only focuses on intra-human relations. Secondly, the focus on human capital does not open the gaze to the diversity of non-humans, including their potential and capacity for creating symbiotic life and being part of new solutions.

Secondly, it seems inappropriate to name an era of the earth's history as Man's new age—which is what the 'Anthropocene' literally means. Such a designation overemphasizes Man and his role (which is also the case with alternatives like the Capitalocene) (Haraway, 2016). By designating the current epoch of the Earth as the time of Man, the anthropocentrism that some proponents of the concept of the Anthropocene try to do away with is simply confirmed. This is sheer hubris—insofar as the term fortifies an attempt to take control of a geohistory that is being co-authored by cosmological earthly forces (see Chaps. 2 and 7).

It is apparent however, that anthropogenic activities have led to the plastic waste in the oceans, so much so that yet another designation has emerged: Plastocene. The 'Anthropocene' can signify specific arrangements (or entanglements) between humans and non-humans that have begun to play a major role in Earth's overall geobiohistory, which are new and therefore might justify the name. However, if an understanding of the Anthropocene is solely based on the fact that we live in a time where mega-influences of the planet are attributable to humans, then it leans towards a problematic anthropocentrism. Alternatively, incorporating understandings of specific entanglements between humans and non-humans, and developing new dialogical sensitivity to the latter, then this anthropocentrism is countered. Furthermore, it is precisely the ambiguous, ambivalent, and controversial nature of the name that enables this term to do what no other term can currently do; on the one hand, it emphasizes the crucial role of Man, but on the other hand it problematizes this very claim by bringing together the cultural history of Man and