

2 A BITTERSWEET LANDSCAPE

Contemporary environmental education . . . has the revolutionary purpose of transforming the values that underlie our decision making . . . This contrasts with the traditional purpose of schools . . . of conserving the existing social order by reproducing the norms and values that currently dominate environmental decision making.

—R. Stevenson, “Schooling and environmental education: Contradictions in purpose and practice,” p. 145

Witnessing the scenes of the Tehri Dam and South Durban made the Anthropocene’s environmental multicrisis seem palpable, prompting me to wonder how we got to this point. To achieve harmony and agreement on what is to be done with the Earth and its resources across so many countries, cultures, and languages is a feat that makes the Roman Empire’s range seem trivial. The science and the engineering skill behind the megaprojects of modernity owe much to the phenomenon of mass schooling, as does the cultural sculpting that has been necessary to convert very different groups of people to a single gospel—that of endless economic growth within the context of neoliberal capitalism.¹ Formal education is not the only reason we are where we are, but it certainly is one of the main reasons.

Looking over the register of people considered to be the most influential thinkers on the subject of education,² I wonder who called for formal education to help jumpstart the Anthropocene? Was it Socrates, with his dictum that the unexamined life is not worth living (Rembert, 1995, p. 98)? Immanuel Kant in his conception of moral education (Moran, 2009)?

Friedrich Nietzsche, who believed that education is meant to bring us “above the decadent values of mass culture” (Johnston, 1998, p. 74)? We could consider many such examples, but the pattern is clear: none of these ideas points in the direction of the environmental destruction unleashed on the planet in the last two centuries. All these thinkers would likely be horrified to see the Anthropocene we have created.

Still, we should not give up on education as one of the forces capable of transforming the future. That is this chapter’s central argument. As much as education may have indeed been one of the main culprits in molding a “human monoculture” (M. S. Prakash & Esteva, 2008, p. 24) that is at the root of the unfolding environmental destruction, many of the ideas and practices associated with education—both within formal schooling systems and in noninstitutional spaces—show considerable promise in charting a different path forward. For all the bureaucratization and alignment with neoliberal (neo)colonial ideologies, the field also contains many gems of ideas and practices that can inspire a shift toward “educating for the Anthropocene.” In this chapter, I explore this bittersweet, self-contradictory landscape to help us contextualize the ethnographic narrative that follows, to identify the points of resonance and dissonance between the stories of Pashulok and Wentworth and the existing research, debates, and theoretical frameworks. It is not necessary to read this chapter for the ethnographic narrative of the following chapters to make sense, and readers not interested in theory can feel free to skip ahead to chapter 3. However, I believe these ideas are helpful thinking tools for exploring the ways in which the story of Pashulok and Wentworth helps us understand what education in the Anthropocene may mean.

It is beyond this book’s scope to provide a comprehensive overview of all the literature and theory pertinent to educating for the Anthropocene, and neither is this my goal. This book tells a story rather than providing a theoretical treatise, and I focus on several strands of research and theoretical thinking that are particularly relevant to this story and its wider implications. The first section highlights the contradiction between the expectation that education is a key part of the solution of the environmental multicrisis and a depoliticized, instrumentalized mainstream definition of sustainability. The second section considers the proposed alternatives, including critical

perspectives about (de)politicization among ESE scholars, research about activist educators, ecopedagogy (an ESE alternative with roots in Paulo Freire’s pedagogy of liberation), as well as deschooling and Indigenous knowledge. The third, final section ventures into deeper philosophical waters and builds on the discussion of the relevance of Hannah Arendt and Paul Ricœur’s thought to the study of ESE in the Anthropocene. The section outlines ideas of historical responsibility and the “debt to the dead” and “debt to the unborn,” which are, I argue, helpful theoretical frameworks for us to think with as we ponder the (de)politicizing effects of schooling and activism in Pashulok, Wentworth, and beyond. Together, these three sections can be read as a manifesto for the need for us to focus on how we educate in the Anthropocene, underscoring the relevance and urgency of the story told in the remaining chapters of this book.

THE PARADOX OF SUSTAINABILITY AND EDUCATION IN THE ANTHROPOCENE

How do we “fix” the environmental crises at the heart of the Anthropocene? Although scholars have proposed different solutions to different aspects of this multicrisis—climate change,³ biodiversity loss, the acidification of the oceans—there are areas of agreement. Substantial changes in education systems underpin the theory of change of most proposed solutions, from curbing consumption (Ivanova et al., 2016; Wackernagel & Rees, 1998; Young et al., 2010), replacing economic growth by de-growth (Alier, 2009; Hickel, 2020b; Kallis, 2011; Kallis et al., 2020; Schneider et al., 2010)⁴ and drastic population control (Dukes, 2011), to “ecosystemic reflexivity” of institutions (Dryzek, 2016, p. 937),⁵ geoengineering (Crutzen & Stoermer, 2000; Vaughan & Lenton, 2011; Wigley, 2006), fostering “circular economies” (Lieder & Rashid, 2016), and inspiring a “fourth industrial revolution” aimed at creating more sustainable technologies (Schwab, 2016).⁶ All these ideas rely on changing our methods for educating future generations. As Robert Stratford (2019, p. 149) said, “[I]n the process of more carefully considering our interconnected natural, social and intellectual systems [in the Anthropocene], it seems likely that new approaches to education need to be part of this process.”

While the central role of education is indeed enshrined in the United Nations (UN) Sustainable Development Goals (SDGs)—a set of targets shaping much of the governmental, intergovernmental, philanthropic, and for-profit development work around the globe (United Nations, 2018)—this is not necessarily good news. Although the SDGs are often uncritically accepted among policy-makers and scholars alike as the desirable global direction of travel, they in fact represent a form of technocratic instrumentalization and bureaucratized rationality that can get in the way of educating for the Anthropocene. Their focus on largely predetermined, quantifiable outcomes mirrors the testing regimes that have come to dominate the global education landscape. As Derek Hodson said, such regimes are “philosophically unsound (because they are rarely, if ever, based on a valid model of science or scientific literacy), educationally worthless (because they trivialize teaching and learning), pedagogically dangerous (because they foster bad teaching), professionally debasing (because they de-skill teachers), socially undesirable (because they project a number of powerful messages about control and compliance) and morally repugnant (because they objectify people, regard knowledge as a commodity to be traded for marks)” (2011, p. 303). These are just some of the reasons why the SDGs, under whose banner these testing regimes are often promoted, are at odds with educating for the Anthropocene.

A key factor behind this fundamental incompatibility is the definition of “sustainability” at the root of the SDGs. While many earlier understandings of the concept reflected in religion and Indigenous cultures emphasized the importance of living in harmony with nature and preserving the natural environment (Mebratu, 1998, p. 498), such understandings of sustainability would be considered radical by many of today’s standards. The 1987 Brundtland Commission’s report, “Our Common Future,” defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (The World Commission on Environment and Development, 1987) and called for a “5–10-fold increase in gross world industrial activity over the next century to meet the needs of the poor” (J. Robinson, 2004, p. 372). This definition, which departs from earlier ideas of environmental sustainability and calls for increased production rather than redistribution as a solution

to inequality, continues to be influential well into the twenty-first century (Griggs et al., 2013; Sneddon et al., 2006).⁷ Without a notion of sustainability that “accepts that there are critical ecological limitations that must be addressed, the crucial potential of education is missed because, under the weaker notion, nearly every status quo can be defended as sustainable” (Holfelder, 2019, p. 950)—and this is exactly what the SDGs are enabling.

The current SDG framework defines sustainability as relying on three pillars—“economic growth, social inclusion and environmental protection” (United Nations, 2015). Yet a close reading of the SDGs points to the primacy of the economic over the environmental and the social in the accepted notion of sustainability. As Hannah Weber (2017, p. 400) has argued, “the implementation of highly contested neoliberal policies is itself part of the explicit goals of the SDG framework,” as reflected, for example, in SDG 10, whose targets are “revealing about the centrality accorded to economic growth—rather than a commitment to redistribution—as the means to reducing inequality” (p. 404). SDG 4, which concerns education, has been criticized along the same lines. According to Elena VanderDussen Toukan (2017, p. 296), “The language of ‘quality education’ and ‘lifelong learning opportunities’ is left ambiguous in the SDGs, seemingly open to interpretation.” This is problematic, since, “as standardized testing regimes are justified as the primary indicator for ‘quality’ . . . measuring and ranking content proficiency belies any claim to curricular neutrality. Erosion of local systems, processes, possibilities—and education’s role in it—continues today” (VanderDussen Toukan, 2017, p. 306). In other words, SDG 4 opens the door to (and offers a justification for) using education as a tool to maintain and reproduce a global economic (neoliberal) regime at the expense of the social and the environmental.

Education within the context of SDGs is thus paradoxical in that it claims to be aiming for a sociopolitical transformation but in fact reinforces the status quo. Or, as Richard Kahn, a scholar of ecopedagogy (about whose work I say more below), writes, environmental literacy has “in an Orwellian turn . . . come to stand in actuality for a real illiteracy about the nature of ecological catastrophe, its causes, and possible solutions” (2010, p. 9). As Smith (2005) points out, in the context of neoliberal sustainability,

“the ‘responsibilities’ we are called on to exercise . . . involve little out of the ordinary—drive a few miles less, recycle plastic containers, compost organic waste, and so on. These ‘acts’ are, in fact, largely apolitical in an Arendtian sense . . . They usually do not initiate anything new, nor offer any real possibility for the individual to change the world; rather they become a means for ameliorating some of modernity’s excesses” (p. 58).

Within the confines of “apolitical” ESE, these acts take place through an “individualization of responsibility.” As Maniates (2001, p. 33) writes, “when responsibility for environmental problems is individualized, there is little room to ponder institutions, the nature and exercise of political power, or ways of collectively changing the distribution of power and influence in society—to, in other words, ‘think institutionally.’” The transformative potential of education is subdued by recognizing only nonradical, individualized action as worth striving for, thus placing constraints on young people’s imaginations of both their present and future political agency.

In light of these arguments, it is hard not to see the idea of sustainable development, in its SDG variety, as an oxymoron (Caradonna, 2017). If the goal of development is to convert all national economies to the gospel of endless economic growth and sustainability is disconnected from social and intergenerational justice, then the natural environment (and the socio-cultural fabric of humanity) cannot be sustained under a “sustainable development” regime. This was made clear in the Club of Rome’s 1972 seminal report, *The Limits to Growth* (Meadows, 1972), and in countless publications since (F. Hirsch, 1977; N. Klein, 2014; Meadows et al., 2006; Steffen et al., 2007, 2015), including Foster’s (2002, p. 26) call to end the “ecological tyranny of the bottom line.”⁸ Echoes of a critical approach to the political and economic status quo can also be found in the Belgrade Charter of 1975, one of the foundational documents of ESE (United Nations Environment Programme, 1975).⁹

Current levels of consumption are unsustainable, suggesting that a net *degrowth* of the global economy is needed to bring the world closer to sustainability (in its older, “radical” definition). Bond and Hollowes (2002, p. 30) made the issue with sustainable development clear: “Occasionally . . . this strand of thinking does actually grapple with capitalism’s ability to

consume and accumulate beyond the limits of the biosphere. Yet the main point behind the sustainable development thesis is a technical and reformist one, namely that environmental externalities such as pollution should, in the classical example, be brought into the marketplace.” The advent of the “human age” makes such logic harder and harder to sustain. As Bonneuil and Fressoz (2017, p. 20) argue, “the concept of the Anthropocene challenges this separation [of growth and nature] and the promise to perpetuate our economic system by modifying it at the margin. In place of ‘environment,’ there is now the Earth system.” The oxymoronic nature of the accepted notion of sustainable development, and the underlying neoliberal dynamics it aims to cover up, are growing ever more discernible.

What might an alternative to this global political regime look like, and what is the role of education in bringing it about? Much of the “radical” writing on the environmental crisis calls for “eco-socialism” (Angus, 2016; Barkdull & Harris, 2015) or a left turn in politics (Chomsky, 2016) as a solution. But the problem is not so trivial as to be fixed by simply replacing one economic system by another, as Shrivastava and Kothari (2012) aptly point out. Their argument is “not just against market capitalism, in which TNCs (Trans-National Corporations) compete for political influence and economic dominance. We stand as much against state socialism, in which nation states compete for economic influence and political dominance. Under the competitive conditions of industrial modernity, the race towards a socialist utopia paves the way to ecological dystopia no less than the paradise dreamt up by enthusiastic neo-liberals. The ecological debris left behind by the carcass of Soviet communism after its official end in 1990 stands as a testimony to this” (Shrivastava & Kothari, 2012, p. 243).¹⁰ Socialism is not the antidote for capitalism, at least when it comes to anthropogenic slow violence.

This conclusion brings us to a larger point—educating for the Anthropocene is not about promoting any particular political regime. As Holfelder has argued, much of the mainstream ESE sees the future as “something which you cannot shape but which acts on you [. . .] rather than something formable which would give individuals an alternative other than submission” (Holfelder, 2019, p. 948). A necessary step toward educating for the Anthropocene is a departure from this fatalistic perception and seeing the future

as “open” instead of “closed”; this means “tak[ing] current educational systems and today’s society with their non-sustainable future-building practices into account, because otherwise ESD would not make any difference to the educational and societal status quo” (Holfelder, 2019, p. 943).

Another clue to possible alternatives can be found in a recent empirical study whose findings suggest that individualism gets in the way of actions that might help to “fix” the Anthropocene. Komatsu, Rappleye, and Silova (2019) showed that “individualistic” societies—that is, those where a belief in independent selfhood/autonomous competitive citizens is dominant, particularly Anglo-American countries—contribute to environmental decay more than less individualistic societies—those where a belief in interdependent selfhood prevails, such as some of the countries in Asia and Latin America.¹¹ The study also reported statistically significant findings confirming its subhypotheses: that people in more individualistic societies tend to believe less in human (anthropogenic) causes of environmental degradation, that this prevents people living in such societies from consciously organizing proenvironmental behavior, and that even among countries with similar levels of anthropogenic perception, the more individualistic ones have a larger negative environmental impact “due to less self-control when facing trade-offs between individual and social benefits” (Komatsu et al., 2019, p. 1). The study points to a potentially significant relationship between a society’s cultural beliefs and practices and the way it deals with slow violence. While Komatsu et al. (2019) did not prove a causal effect of culture, they suggested that in less individualistic countries a perception of interdependence between people may extend to a recognition of interdependence between humanity and the natural environment. In such countries, they also suggested, deliberation and dialogue may be fostered more than in more individualistic societies, potentially making it easier to identify and address environmental issues.

This is consistent with Bruno Latour’s contention that “the critic is not the one who lifts the rugs from under the feet of the naïve believers, but the one who offers the participants arenas in which to gather” (Latour, 2004, p. 246). Cultivating such arenas calls for “an understanding of how the political becomes pedagogical, particularly in terms of how private issues

are connected to larger social conditions and collective force—that is, how the very processes of learning constitute the political mechanisms through which identities are shaped and desires mobilized” (Giroux, 2004, p. 62).¹² Arendt (1998, p. 188) asserts that it is in such spaces—and only in such spaces—that “action” emerges: “Action . . . is never possible in isolation; to be isolated is to be deprived of the capacity to act.” Put differently, action is only possible through the multiplicity of perspectives inherent in the shared human condition. Cultivating the capacity to act—not in an instrumental sense with the aim of any predefined outcomes but with an openness to the promise of politics—whether through schooling, activism, or other modalities of education, has the potential to help us reimagine (and transform) the Anthropocene.

A TAPESTRY OF CRITICAL PERSPECTIVES

The idea that education is a key component of charting a different future resonates with scholarship across several areas. In this section, I will explore the work of ESE scholars, the research about activist educators, ecopedagogy, and the ideas of deschooling and Indigenous knowledge. The concept of “educating for the Anthropocene” builds on the insights from all of these fields, even as it seeks to chart a slightly different trajectory from each of the authors who have contributed to this “tapestry of critical perspectives” about environmental learning at a time of environmental multicrisis.

(De)Politicization of the Environment and ESE Research

A concern with politics has long resonated with the work of scholars who have theorized the interface between education and sustainability. Stephen Sterling argued in 1996 that education for sustainability that is suited to twenty-first-century challenges must be “ideologically aware and socially critical” (p. 23). A decade later, Vare and Scott (2007) made a distinction between “ESD (Education for Sustainable Development) 1,” which promotes behavioral change among students, and “ESD 2,” which lies in “building capacity to think critically about [and beyond] what experts say and to test sustainable development ideas . . . exploring the contradictions inherent in sustainable living” (p. 194). According to these authors, the two

approaches must be combined if ESD programs are to be effective. They argue that a dominance of ESD 1 approaches has, in fact, undermined the sustainability agenda—a view echoed by Sund and Ohman (2014), who argue that “unmasking the political dimension” (p. 639) of sustainability discourse is necessary for ESE to succeed. McKenzie (2012) goes further in her critique, pointing to the need to interrogate critically the influence of advanced neoliberalism on articulations of sustainability policy, including the SDGs and ESE. Recognizing the diverse understandings of “politics” in this literature, Håkansson, Östman, and Van Poeck (2018) developed a typology of four different categories of what they call the political tendency in ESE—democratic participation, political reflection, political deliberation, and political moment.

Several of these categories—political deliberation in particular—align with Arendt’s definition of the “political.” Levy and Zint (2013) suggest that the ESE field can learn from established research in political science and education in “prepar[ing] students to participate in political processes to address major environmental problems” (p. 568), a notion that supports civic equality and which Arendt emphasizes as a precondition for political action. Focusing less on participation and more on awareness, Rätzl and Uzzell (2009) argue for educating young people about the power structures underlying global production and consumption. This idea, too, would resonate with Arendt, who suggests that “the more we think of the political realm as concerned with matters of subsistence and material reproduction, the more likely we are to accept hierarchy in place of civic equality” (Villa, 2000, p. 10). Another concern prevalent in the ESE literature is the importance of conflict, disagreement, and dissonance in educating learners about the paradoxes of sustainability (Lundegård & Wickman, 2007; Sund & Ohman, 2014)—a theme aligned with Arendt’s emphasis on agonistic pluralism. This literature recognizes many aspects of the kind of politics that I argue is necessary for ESE to contribute to environmental sustainability.

Much of recent ESE scholarship has focused on transformative social learning (Macintyre et al., 2018), which calls for varied modalities and transgressive pedagogies within education (Lotz-Sisitka et al., 2015, 2016). These larger themes within ESE resonate with critiques of the depoliticization

of the field. Stevenson (2007), quoted in the opening of this chapter, has argued that the historical antecedents of contemporary school-based ESE—“nature study” and “conservation education”—were not intended to challenge the political status quo, which made them easily compatible with the social reproduction at the heart of schooling. This historically determined approach to ESE is in line with the “fact-based tradition” (Säfström & Östman, 2020): “This tradition is built upon the conviction that environmental and sustainability issues can be discovered and cured by scientific knowledge alone, although with the help of technology. The ethical-political dimension of these problems is perceived as something subjective and non-rational that should be avoided” (p. 991).

The fact-based tradition and socially reproductive, status-quo-preserving schooling systems go hand in hand with what Säfström & Östman (2020) call instrumentalization. What they mean by this term is “the tendency to treat the child as a student on which the nation-state projects its desires and goals regardless of how the student understands his or her own life: The student is thus understood as a means to achieve something other than what concerns the student him or herself” (Säfström & Östman, 2020, p. 992). This way, the child becomes a cog in a country’s development machinery, with both the development of the child and of the country following linear, predictable trajectories toward end points based on “Western” discourses (cf. Sriprakash et al., 2019). What this literature teaches us is that projecting a set of desired outcomes that children do not themselves actively participate in defining is both unethical and unlikely to achieve those outcomes.

The traps of instrumentalization, fact-based tradition, and social reproduction that ESE can fall into are not necessarily intentional. They can be the consequences of bureaucratization that accompanies trends like “evidence-based education” and the increased use of testing regimes and easily quantifiable, measurable benchmarks in education systems. These policy trends rely on standardization of curricula and pedagogic practices that lead to “order” and predictable, linear learning in which a teacher’s individual approach (or a student’s uniqueness) play little role. Alternative approaches to ESE, in which teaching and learning processes involve “difficulty, ambiguity, contradiction, autonomy, and cognitive and psychological uneasiness[,] suggest a

recipe for classroom disorder rather than classroom order” (Stevenson, 2007, p. 149). Consequently, “environmental education, which is often necessarily interdisciplinary, problem centered, and emergent, is often marginalized or becomes non-existent” (Hursh et al., 2015, p. 307). One antidote proposed by Säfström & Östman is a focus on creativity and artistic activities “through a transactive teaching approach that can extend grievability to all Life on our planet” (2020, p. 1000). The participatory filmmaking with young people explored in chapter 4 is one attempt at such an approach.

The ESE literature also teaches us that global changes in technology and culture of the last decades too have contributed to a fertile ground for depoliticization and bureaucratization. In his book *To Know The World*, the environmental educator Mitchell Thomashow has argued that the Anthropocene represents “the convergence of accelerating natural resource extraction and global communication networks” and that “the dynamic pace of these processes has profound implications for how the psyche perceives the biosphere” (2020, p. 71). Along with “global capitalist expansion,” these developments cast what Thomashow calls a “collective spell,” thus “creat[ing] proliferating demands for our immediate attention, yielding a quest for ubiquitous novelty.” The challenge of environmental learning in the Anthropocene is to understand how the collective spell affects our perception of the natural world. The perceptual dynamics identified by Thomashow are, I would argue, a further factor in enabling slow violence and bureaucratization and another reason to pay close attention to how we do education in the Anthropocene.

But Thomashow also sees the Anthropocene as an opportunity for educators. This new era “can also be envisioned as a time of human awakening, an era when scientific knowledge and the prospects for global awareness are unprecedented, and a period for learning opportunities and discovery,” he argues (Thomashow, 2020, p. 63). Others have made similar observations. According to Karen Litfin, “the dawning of the Anthropocene seems to compel us to ask ourselves not only, ‘What on Earth are we doing’ but even more fundamentally, ‘What on Earth *are* we?’ If nothing else, the new geological era highlights our species’ paradoxical relationship to the rest of creation” (2016, p. 119). She suggests that humanity in the Anthropocene is less of a “cancerous scourge” and more of “an intriguing puzzle, a riddle whose

solution must emerge from a place beyond business as usual. Surely a puzzle of this depth is antithetical to a quick fix,” Litfin muses, “surely it is worthy of earnest contemplation. And surely, since we are (despite our varying levels of privilege and culpability) in the same boat, our reflections should have an intersubjective dimension—all the more so because the truly effective responses will be matters of collective action. . . . Contemplative inquiry is therefore the yin to the yang of collective action” (Litfin, 2016, p. 120). What Thomashow and Litfin seem to be suggesting is that the Anthropocene presents us with an opportunity to redefine what we mean by education.

Michael Maniates also considers what we can learn from the limitations of current educational practices as we move further into the Anthropocene. He identifies ways in which ESE can fuel despair and fatalism about the future. “[O]ur attention gravitates to political struggle at the national level, where the price of entry into the conversation seems impossibly high and environmental concerns are too often an afterthought,” Maniates notes (2016, p. 139). He offers an alternative: “We must remember that complex systems also offer positive feedback loops and thresholds that can transform small and strategic interventions into large and positive systems changes” (Maniates, 2016, p. 140). Like Thomashow and Litfin, Maniates points to the potential of education to help us transform the Anthropocene, in spite of its (at best) patchy track record.

Activist Education

Another area of research that is important for us to consider is the literature about activist educators. While the dual focus on schooling and activism in Pashulok and Wentworth emerged organically through my ethnographic immersion in these communities, the two modalities of education have been previously researched together in the context of the environmental multicrisis. This literature offers both normative ideas about charting new directions for formal education and examples of practice we can look to for inspiration as we ponder the idea of “educating for the Anthropocene.”

The Science, Technology, Society and Environment (STSE) field is one of the spaces where activist education has been discussed for decades. Within this field, we find a focus on politicization, debureaucratization, and action.

Teacher training is also a frequent subject of research. As Derek Hodson has pointed out, “if we are to politicize students we need to politicize teachers, too. Because teachers hold a pivotal position between the state, parental influence, media power and the dictates of institutional norms, they have enormous opportunities to foster the development of democratic values and influence the attitudes of students” (2011, p. 300). Hodson suggests that teachers’ role is to be what Henry Giroux (1988) refers to as *transformative intellectuals*: “Central to the category of transformative intellectual is the necessity of making the pedagogical more political and the political more pedagogical. Making the pedagogical more political means inserting schooling directly into the political sphere by arguing that schooling represents both a struggle to define meaning and a struggle over power relationships” (Giroux, as cited in Hodson, 2011, p. 302). According to Hodson, this would in turn help students become what Mark Elam and Margareta Bertilsson call *radical scientific citizens*: “The radical scientific citizen is fully prepared to participate in demonstrations . . . street marches, boycotts, and sit-ins and other means of publicly confronting those ruling over science and technology . . . While the scientific citizen as activist may be taking a partisan position in defence of a particular individual or group in society, they are also understood as assuming a moral stance in defence of general ethico-political principles . . . which are accepted as existing through many different and conflicting interpretations . . . and subjecting them to continuous contestation” (Elam & Bertilsson, as cited in Hodson, 2014, p. 69).

Many of these ideas are reflected in the STEPWISE (Science and Technology Education Promoting Wellbeing for Individuals, Societies and Environments) education framework developed by Larry Bencze at the University of Ontario. This framework focuses on guiding students through “apprenticeship” lessons designed to enable them to self-direct research-informed projects that address harms they identify in STSE relationships (Bencze & Carter, 2020, p. 65). This approach also relies on actor-network theory to unpack power relationships and address the underlying sociopolitical causes by the issues identified by students. The theme of power relations is perhaps nowhere more present than in ecopedagogy, another approach that has a lot to teach us when trying to reimagine education in the Anthropocene.

Ecopedagogy

Rooted in the ideas of Paulo Freire and activist movements of Latin America, ecopedagogy focuses on the links between environmental decay and social conflict. “All environmental pedagogies advocate environmental change, but ecopedagogical models, through a problem-posing method, focus on the politics behind environmentally harmful actions, the normative system and structures of society guiding these actions, and the deeper, transformative steps needed to end these actions” (Misiaszek, 2016, p. 590).¹³ One of the central tenets of ecopedagogy is deconstructing the idea of “progress” and its convergences and divergences with the Western-influenced models of development (Misiaszek, 2016, p. 596).

As the ecopedagogy scholar Richard Kahn points out, “Environmental movements engage pedagogically with society, with their own membership and with other movements. They thereby generate theories, new strategic possibilities, and emergent forms of identity that can be accepted, rejected, or otherwise co-opted by dominant institutional power” (2010, p. 27). This is where, according to Kahn, ecopedagogy meets activism in line with Herbert Marcuse’s theory of “politics *as* education” (2010, p. 128). According to Kahn, “Education and revolution were largely synonymous forces, which struggled against their reified forms as one-dimensionalizing political apparatuses, corrupting professions, and dehumanizing cultural forms” (2010, pp. 137–138). Education, in the form of ecopedagogy, could therefore be seen, in Marcusian terms, as an activist reaction to the repressive tolerance of the political status quo (Marcuse, 1965).

While these ideas share much with the ingredients of educating for the Anthropocene explored in this book—radical imagination, agonistic pluralism, and intergenerational dialogue—I chose not to couch the discussion in ecopedagogical terms. I see ecopedagogy as somewhat of a normative model of education, and, as I explained in the introduction, my goal in this book is not to tell teachers or activists how to approach education but take the reader on an ethnographic journey. Nevertheless, the material in this book resonates strongly with many of ecopedagogy’s key tenets, and it is helpful to think with ecopedagogy when we think about educating for the Anthropocene.

Deschooling and Indigenous Perspectives

While Indigenous peoples' "traditional ecological knowledge" is, according to Richard Kahn, one of the key elements of ecopedagogy (2010, p. 105), it is in fact also central to a number of other critiques of education and sustainability. As Thomashow points out, "Indigenous peoples live in tropical forests, boreal forests, deserts, and snow as well as on tundra, savannas, prairies, islands, and mountains, and occupy every remaining complex biotic community (or 'biome') on the planet. They are stewards of about 80 percent of the world's remaining biological diversity and account for 90 percent of its cultural diversity" (2020, p. 141). As many of the world's Indigenous peoples sustained their ways of life by learning to live within the boundaries of their ecological environments, sometimes over centuries, a return to these lifestyles can appear as a potential solution to the environmental crises of the Anthropocene.

Madhu Prakash and Gustavo Esteva are among the most vocal critics of mainstream education who highlight the importance of Indigenous knowledge transmitted outside institutionalized settings. Their work builds on the concept of deschooling advanced by Ivan Illich (2018), who saw the very idea of universal education through schooling as undesirable and detrimental. "Authentic cultural practices are necessarily taught outside the classroom," Prakash and Esteva write (2008, p. 25). In contrast, within the modern school, "The emphasis is on earning money in a provisional future that has nothing to do with place, commons, or community" (p. 3). They point out that all universalisms, "including the different brands or breeds of education—are nothing but arrogant particularisms" (p. 2). The idea of universal schooling, enforced as a human right by the state, is particularly problematic in that it often conflicts with local knowledge and culture, uprooting young people from their communities. Prakash and Esteva believe that, as a result, "monocultures of learning and living destroy the rich pluriverse of the diverse cultures of the social majorities" (2008, p. 24). The solution they point to is deschooling—decoupling learning from institutionalized education and helping young people learn in the world outside the classroom.

These arguments resonate with this book's focus on community activism and intergenerational transmission of knowledge as forms of environmental

learning. It is, however, important to remember that not all communities have a strong activist presence and what Kahn (2010, p. 105) calls “traditional ecological knowledge” has not been preserved in all societies. It is also not clear whether such knowledge could in all cases serve as a model for facing the environmental challenges of the high Anthropocene. Simply put, we need to be mindful of romanticizing and instrumentalizing Indigenous knowledge as a solution to the complex problems faced by humanity. And while the arguments presented in this book certainly call for elements of “deschooling,” a wholesale abolition of schooling does not appear to be warranted based on the data presented here. The idea of institutionalized learning does not seem to be, by itself, responsible for the problematic aspects of schooling discussed in the chapters that follow; rather, overarching cultural and political forces (e.g., coloniality, neoliberalism, consumerism) seem responsible. These forces are also present outside of schools and would likely still affect young people’s learning even if schools were abolished. Nevertheless, the concerns raised by this literature are helpful in thinking about what educating for the Anthropocene may mean, particularly in contexts outside the school.

THINKING WITH ARENDT AND RICŒUR ABOUT EDUCATING FOR THE ANTHROPOCENE

These strands of criticism—the critique of depoliticization within ESE, activist education, ecopedagogy, Indigenous education, and deschooling—all resonate with the theoretical work of Hannah Arendt. Her ideas help us find the “common denominator” between these approaches and provide a language helpful to imagining what an alternative to education in the Anthropocene may look like. The instrumentalized nomenclatures of SDGs, ESD/ESE, and development discussed in the first part of this chapter are arguably unhelpful in thinking about educating for the Anthropocene; they represent a technocratic obfuscation of politics. We need to think with different concepts—ones that take us past the Anthropocene’s scientism and that we can put to work in the field. In the introduction, we encountered Hannah Arendt’s concepts of bureaucratization, agonistic pluralism, and politics. Before we launch into the ethnographic narrative proper in chapter 3,

I would like to introduce one more related idea—historical responsibility, as conceptualized by Paul Ricœur—which will help us understand the ways in which young people in Pashulok and Wentworth make sense of the past and the future as they navigate life on the high Anthropocene’s frontier.

While many different definitions of historical responsibility have been proposed (Tillmanns, 2009), a particularly helpful way to think about this concept in the context of ESE is to engage Paul Ricœur’s (1984) notion of debt. We can conceptualize human contribution to environmental decay in the form of a “debt to the dead” to be carried by future generations. Ricœur first articulated his theory of debt in *Time and Narrative* in the context of describing the process of writing history: “The historian’s constructions have the ambition of being reconstructions, more or less fitting with what one day was ‘real.’ Everything takes place as though historians knew themselves to be bound by a debt to people from earlier times, to the dead” (p. 100). To the extent that all people are historians engaged in the task of interpreting past events, all are also bound by the recognition that we carry a debt to the dead or to people from the past we may never have known. Following this logic, we can conceptualize environmental degradation, caused by the pursuit of modernity at the expense of future generations, as a form of debt to the not-yet-born—a debt impossible to repay.

The theme of historicity, which lies at the root of ESE, links it to our imagination of the future. The “surplus of meaning,” a core concept in Ricœur’s hermeneutics, is key to the logic behind ESE interventions: by becoming aware of the historical causes of environmental degradation, we simultaneously become aware of the likely effects our actions will have on the future environment—our debt to those we will never know. ESE may therefore be seen as relying upon a “temporal arc” that links the past with the future through the present: “The temporal arc of our lives is such that the past (as collected in the present) throws a deep shadow over our future, and so the primarily retrospective (or recollective) character of narrating does not prevent it from having [a] prospective, indeed truly self-transformative, effect” (Dunne, 2007, p. 152). This idea of the “storied self” (Dunne, 2007) is especially applicable to ESE interventions: “Given the radically unsustainable nature of our current systems, environmentalism is

first and foremost a critical endeavour. In criticizing an unsustainable status quo, environmentalists are engaged in imagining an alternative, even when they do not fully elaborate the proposed alternative” (Treanor, 2013, p. 161).

Global aspirations for development and modernity also carry burdens of history, but they must be conceptualized in different ways. Traces of colonial encounters and their legacies, as they shape education practice, often have meant that such aspirations are uneven and unpredictable, particularly among populations subjected to slow violence. The sacrifices previous generations made to achieve better living standards, particularly in the context of the (neo)colonial histories of many communities in the “Global South,” act as a burden on those now alive and may not easily translate into the practical application of often utopian perspectives on ESE. The incompleteness of the development narrative, the belief that “we are still developing,” seeks to render the present the latest stage in the struggle for development—a struggle whose temporal dimension is greater than individual lives, in which not participating means being seen to betray the moral and political obligation of honoring the dead. To understand the ways ESE interventions shape the perception of sustainable development among young people, it is first necessary to understand how such interventions interact with existing notions of historical responsibility that have been shaped by the cultural, political, and economic landscapes in the target communities. What “horizons of the possible” do young learners see for themselves and how do ESE interventions change these perceptions?

Neither debt—the debt of environmental degradation to the unborn or the debt to the dead of continuing the struggle for development—can be fully paid off. Ricœur (1984) addresses this insolvency paradox relative to historians, whose constructions “aim at being *reconstructions* of the past. Through documents and their critical examination of documents, historians are subject to what once was. They owe a debt to the past, a debt of recognition to the dead, that makes them insolvent debtors” (p. 142). Yet, as Ernst Gerhardt (2004) noted in his analysis of *Time and Narrative*, Ricœur “does not consider insolvency a function of a structural impossibility as doing so would negate any ethical force the debt might possess” (p. 246). Not being able to *fully* repay the debt thus does not mean one lacks the ability

to imagine oneself as a capable, willing subject; indeed, it means that the process of reconstructing narratives of empowerment is a lifelong project. Importantly, Ricœur (2010) does assume that we are capable of such acts of reconstruction and ought to be empowered to assert our capability.

Examining the concepts of environmental sustainability and the related concept of development through Ricœur's lens allows us to explore such questions as these: To what extent do young people envision their impact on the environment as a "burden of history" to be carried by future generations? How does ESE alter their perception of their personal and historical responsibility vis-à-vis the environment, as well as their obligation to reimagine the future, the dead, or the unborn? These questions link phenomenology with ethics in examining how students see the exteriority of their lives—their impact on imagined others—and the extent to which the production of subjectivities in ESE classrooms is influenced by positive projections into the future that are rooted in cultural learning about the past.

The debt to the unborn of sustainability and debt to the dead of material progress are not necessarily at odds with each other. The very concept of sustainable development at the heart of ESE assumes that the two debts are in tune; pursuing development does not have to come at the expense of future generations. However, the particular definition of sustainable development operationalized by the SDGs is oxymoronic, as we have seen in this chapter, and pits the debts against one another.

Promoting this paradigm as a sustainable form of human "progress" or failing to challenge its fundamentally unsustainable nature while engaging in the individualization of sustainability is where ESE can become a form of greenwashing. In the remaining chapters, we will consider the ways in which schools come to spread such antieducation for the Anthropocene and what we can learn from activism in articulating an alternative vision for education at this time of unprecedented crisis.

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Educating for the Anthropocene

Schooling and Activism in the Face of Slow Violence

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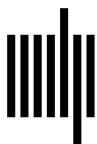
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