

# CURRICULUM STUDIES IN THE TIME OF THE ANTHROPOCENE

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*Guest Editor*

If curriculum studies as a field of thought has been concerned with the subject of time, then a type of time that has been described with numerical precision is life in classrooms. In his conceptualization of a hidden curriculum that demands “institutional conformity,” Jackson (1968/2013, p. 123) explicates the amount of time children spend at school upon completing elementary education. “The magnitude of 7,000 hours spread over six or seven years of a child’s life is difficult to comprehend” (p. 118). To understand the meaning of all those hours logged, Jackson juxtaposes them with other familiar reoccurring activities. Those who attend religious services for one hour a week would need to devote “150 years...inside of a church” (p. 119) in order to become as acquainted with it as a twelve-year-old is with the inside of a school.

Quite differently and more frequently, curricularists have addressed school time in terms of the clockwork efficiency gospel. “Curriculum as assembly line” (Pinar et al., 2004, p. 95) seeks to eliminate waste in education (Bobbitt, 1912). From scripted lessons to scantron tests, the official curriculum is to be dealt with expeditiously. In the first instance, the humdrum minutiae of daily classroom life is described. In the second, every school minute is meant to be maximized. Together, they provide insights into the nature of schooling in modern times.

This introductory article to the special journal issue *Curriculum Studies on the Anthropocene and in an Anthropogenic Context* is similarly interested in the subject of time. However, the kind of time introduced here does not begin by looking at the inside of schools to understand what schooling does. It asks curricularists to step back and forward in time as a way to think about schooling within the context of deep time. As a geological concept, deep time means billions of years. These are not the kind of years curricularists have tended to think about. However, science is learning that human activities are impacting earth systems on deep time scales.

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One of the major human activities, of course, is education. As a key human activity that frequently focuses on transmitting knowledge and developing skill sets in the next generation of people, education has not received the same kind of attention that other major activities have when describing major impacts to the environment. It may be true that the effects of education on earth systems are more difficult to ascertain than are the more tangible activities of agriculture, deforestation, and burning fossil fuels. However, understanding the role that education has played in provoking the Anthropocene is not without warrant. Without the project of education, it seems unlikely that we would have been able to redesign the world as we have been doing now for thousands of years (see Lewis and Maslin, 2015).

Following Edgerton (below), “IT’S ABOUT TIME” that curriculum scholars began thinking about the disturbing relationships that we are now discerning between human time and deep time. Grasping the significance of the relationship between these two time scales poses significant challenges—first and foremost, because time itself is so weird. If the “amount of time children spend in school” (Jackson, 1968/2013, p. 118) makes 7,000 hours seem long and tedious, how is it that at the end of a life long-lived, one may well ask: Where did all the time go?

In the context of the geological time scale, all of human history has occurred within the Holocene epoch, and humans have only existed on the planet for 0.007% of the earth’s history (Oliveira, 2020). While our existence as a species is only a miniscule part of life on earth, human activities are key to understanding the Anthropocene as defined by geoscientists and to appreciating the overlapping “anthropocenes” (Zalasiewicz et al., 2021, p. 3) represented by “over one hundred alternative terms” (p. 19) across different academic disciplines (see also Mentz, 2017). Some of these terms have been invented to criticize the Anthropocene as a concept. Critics argue that it is not the *anthropos* (humanity) itself that is at fault for the “disaster to end all disasters” (Clark, 2014, p. 19). It is a particular way that humans have organized themselves that is the problem.

Despite criticisms, the highly contested “age of humans” (Waters, 2016), as the Anthropocene is also sometimes called, has garnered a great deal of attention in academic discourse and in the public arena. For we, as a species within the context of an estimated 8.7 million other living species, are primarily interested in ourselves. We ponder self-involved matters: What we have done (frequently to each other), what we are doing (to, with, and against each other), and what we aspire to do (here, there, and everywhere). We like contemplating the perennial educational question: “What does it mean to be human?” (Nussbaum, 2018; Biesta, 2006, p. 1). This question never fails to fall out of fashion, even for those who seek to think beyond being human. Even the multidisciplinary *Journal of Posthuman Studies* was developed “to analyze what it is to be

human in an age of rapid technological, scientific, cultural, and social evolution.” The emergence of a “posthuman curriculum studies” (Weaver, 2020) also “introduces new approaches to thinking about humans within the world...” (p. 1). A more appropriate Latin term for *Homo sapiens* (wise man) is said to be “*Homo narcissus*—self-absorbed man...that devastated Earth’s biosphere and thereby drove its own extinction” (Money, 2019, p. 8-9). Never mind that we also drove to extinction Neanderthals and other archaic humans (Kolbert, 2014, p. 246; Longrich, 2019) 40,000 years ago (Wild, 2022) and are anticipated to cause the extinction of one million other species within decades (Tollefson, 2019), many of which have lived on Earth far longer than us.

Evidence of our “culpable obtuseness” (Nussbaum, 2018, para. 2) is recorded in the rocks. Rocks (and fossils) have never been so interesting and so controversial to so many disciplines at one time. However, interest in the Anthropocene, “an epoch in formation” (Moore, 2015, p. 1), as it is playing out from field to field, from study to study, is said to be “great enough to potentially cause significant and widespread confusion and misunderstanding” (Zalasiewicz et al., 2021, p. 19). As such, a brief introduction to it—origins, definitions, and debates—would seem warranted for a curriculum studies readership with varying degrees of familiarity with this “new planetary discourse of our times” (Robin, 2013).

I seek, then, with this opening article to position the Anthropocene as an emerging curricular issue. Though I am hardly equipped to map thoroughly a phenomenon consisting of many phenomena, most of which are only beginning to be understood scientifically. While scholarship on the Anthropocene is proliferating across many disciplines, including the arts and humanities, the focus of this overview highlights scientific debates on the Anthropocene and the backlash that the Anthropocene as a concept has received in the academy, mostly by critical theorists. The Anthropocene’s cause(s), more so than its effects, are also shaping educational thought on the subject, which will be addressed in the conclusion.

### **The Anthropocene: Definitions and debates**

Endorsed by a working group of the International Commission on Stratigraphy, the formal body charged with the keeping of geological time, the Anthropocene epoch/series is characterized by the profound impact that human activities have had on earth systems. Though epochs tend to last several million years, they are relatively short periods within the geological time scale. In other words, and in a blink of an eye, we as a species have acted upon the natural world in such a way that it has become impossible to understand “natural” history as separate from human history. Indeed, these histories are said to have “merged into one story” (Zalasiewicz et al., 2021, p. 5; see also Chakrabarty, 2021).

In defining the Anthropocene geologically, Lewis and Maslin (2015) explicate the breadth and depth of human-induced changes to the environment. These changes likely began with the domestication of fire in the Pleistocene epoch. However, because the use of fire offers only local signatures and the naming of a new epoch requires a clearly dated global marker—a “golden spike”—many argue that other events and activities provide more compelling dividing lines. Arguments have been made for: the multiple independent origins of pre-industrial agriculture and land clearing (Ruddiman, 2013); the year 1610, when the global network of trade and species exchange began (Lewis and Maslin, 2015); and the Industrial Revolution (Crutzen, 2002). At the time of this writing, there seems to be growing consensus among geoscientists on the mid-twentieth century, which is associated with the “Great Acceleration” (Head et al., 2022), when a global dusting of plutonium isotopes from widespread nuclear weapons testing began to settle into the earth’s crust (Waters et al., 2015).

If geoscientists are interested in understanding the “stratigraphic effect” (Zalasiewicz et al., 2021, p. 10) of the Anthropocene, research on and related to the Anthropocene outside the “hard” sciences is generally more concerned with its causes, given that those causes relate to “social relations, human agency, and responsibility” (p. 16). In other words, causes tend to focus on the *who* and the *what* of the Anthropocene, whereas the search for an appropriate marker concerns the *when*. With attention to the latter, the archaeoGLOBE project, which brings together the knowledge of 250 archaeologists from across the world, shows that humans have been altering biodiversity since the late Pleistocene when hunter-gatherers drove many megafauna and other species to extinction. With the help of new technologies, archaeoGLOBE tells a dramatically different story about the transformation of the earth’s biosphere than the one that natural sciences depict, with the latter bolstering the “‘pristine myth’ paradigm” (Stephens, Ellis, and Fuller, 2020, para. 30).

The pristine myth also accounts for why places without contemporary intensive land use are often dubbed ‘wilderness’—such as areas of the Americas depopulated by the great post-Columbian die-off. Such interpretations, perpetuated by scientists, have long supported colonial narratives in which indigenous hunter-gatherer and even agricultural lands are portrayed as unused and ripe for productive use by colonial settlers. (para. 31)

The archaeoGLOBE project suggests that we must go much farther back in time to understand humanity’s relationship with “nature” and the planet. Humans, it is argued, have a deeper entanglement with earth systems than the natural scientists would have us believe. If archaeologists (and some anthropologists) are interested in understanding an “early cause” (Zalasiewicz et al., 2021, p. 10) of the Anthropocene, critical theorists seem

primarily concerned with exploring questions of intervention in a world characterized by global inequalities.

In a paper that promises to critique humanity as a terraforming force, Malm and Hornborg (2014) maintain that “the species category in the Anthropocene narrative...is analytically flawed, as well as inimical to action” (p. 62). To support this critique, they turn their eyes on the “fossil economy” that has caused uneven human impacts. If “advanced capitalist countries or the ‘North’” (p. 64) are most responsible for carbon emissions (the evidence points overwhelming to the United States, with China in a still distant but trending upward second place), then it is the ‘South’ that is paying the price. In “the foreseeable future,” they add, “there *will* be lifeboats for the rich and privileged” (p. 66). Everyone else will drown or die from drought. If a better name for the Anthropocene is the “Capitalocene,” as Moore (2017) posits, then there is still hope. We need but transcend capitalism in order to evade “the planetary crises of the twenty-first century” (p. 1). Ironically, “the resistance of nonhuman ‘nature,’ rather than a rebellion of humanity” (Chandler and Reid, 2019, p. 14) under exploitative capitalism, has said enough is enough. “Nature” has reached its limits.

Human beings as a category are not the problem. The problem is colonialism, racial violence, and the history of plantations that has resulted in the term “Plantationocene” (Haraway et al., 2015). Conceived collectively by a group of mostly anthropologists, the Plantationocene stands for “the devastating transformation of diverse kinds of human-tended farms, pastures, and forests into extractive and enclosed plantations, relying on slave labor and other forms of exploited, alienated, and usually spatially transported labor” (Haraway, 2016, p. 206fn5). Given that plantation (slave) labor predates capitalism (Haraway et al., 2015, p. 22), the Plantationocene is said to better capture the “inflection point for the Anthropocene” (Haraway, 2016, p. 206fn5). It should be pointed out that neither those who emphasize a Capitalocene and/or a Plantationocene over the Anthropocene are concerned with locating a golden spike, which is the work of stratigraphy.

But there must be another story. A way out. Wait, there is. Enter “the Chthulhucene, a story of SF, speculative fabulation, speculative feminism, scientific fact, string figures...[that] must collect up the trash of the Anthropocene, the exterminism of the Capitalocene” (Haraway as cited in Haraway and Kenney, 2013, p. 243). In order to repair the earth, Haraway (2016) gives us the “Children of Compost” (pp. 134-168) — “a story she made up at a speculative narration workshop” (Chandler and Reid, 2020, p. 496; see also Haraway, 2016, p. xii). By working with “human and nonhuman partners” (Haraway, 2016, p. 137) “for resurgence and multispecies flourishing” (p. 145), the planet will erupt with “healing energy and activism.” That the Children of Compost are

“vaguely but not exclusively indigenous” (Chandler and Reid, 2020, p. 494), though, and Haraway is part of “a privileged white Eurocentric academic elite” (p. 485) who appropriates indigenous knowledge in order to find a future that is lost within the Anthropocene seems problematic. The “second ‘Enlightenment’” (Chandler and Reid, 2019, p. 13) comes by way of “the recolonization of indigeneity in critical Western thought” (p. 4). The emergence of a new ontopolitics demands that “whiteness” (p. 13) “become indigenous as a solution to the problems of the Anthropocene” (pp. 8-9). In other words, we do not have to face the Anthropocene—no “requiem for a species” (Hamilton, 2010) is needed—if the “Western academy” (Chandler and Reid, 2019, p. 3) is able to “appreciate indigenous thought and practices” (p. 13). This is what the Children of Compost teach us. For they will never cease the “curious practice of becoming-with others for a habitable, flourishing world” (Haraway, 2016, p. 168). Even amidst all the “extinctions, exterminations, genocides, and immiserations” (p. 137), we still cling to the promise of progress.

Others are less optimistic. In his sweeping history of human biology, Money (2019) describes human beings as a self-destructive animal in which “the climatic apocalypse was stamped into our genes from the moment we disgorged from the Rift Valley” (p. 93). Despite humanity’s unremarkable origins, which have more in common with sponges and mushrooms than they do with plants (pp. 25-27), our evolution has resulted in a misfortunate amount of “brain power [that] has allowed us to feed and breed in ever-increasing numbers” (p. 93). The meat that we must eat is not sustainable for the world’s growing population. Six billion people in 1991. Eight billion in 2022—“a remarkable achievement in human flourishing” (Phillips, 2022)! Our species is projected to reach nearly ten billion by 2050. Money (2019) does not deny that corporations bear culpability for damage to the environment, but the real problem, he says, is the Malthusian catastrophe: “unmitigated human reproduction” (p. 94). His perspective that human overpopulation is the gateway to extinction resonates with Haraway’s (2016) Chthulucene slogan: “Make Kin Not Babies!” (p. 102).

The problem of too many people has not been addressed by feminists, Haraway says, because they fear that this critique could slide “into the muck of racism, classism, nationalism, modernism, and imperialism. But that fear is not good enough...and it cannot be explained away by blaming Capitalism” (pp. 6-7). The population problem has been raised by more than one anti-natalist group since the early 1990s. The (now idle) Church of Euthanasia advocates for a voluntary means of population reduction by choosing not to procreate. They believe that “the concept of childlessness is a vital environmental philosophy” (Korda paraphrased in Harrison, 1995, p. 5) and “recycling is not enough” (Bodock paraphrased in Harrison, 1995, p. 5). Their views are also now supported by climate change mitigation research, which shows that the surest way to

reduce personal carbon emissions is by “having one fewer child” (Wynes and Nicholas, 2017, p. 1). One of the many absurdist slogans coined by the Church of Euthanasia—“Eat People Not Animals”—also speaks to the science that a plant-based diet contributes far more to systemic environmental change than does comprehensive recycling programs.

Though school-based initiatives tend to promote recycling as a way to continue buying into throw away culture, recycling toxic plastic is pretty pointless. Understanding the longevity of the life of plastic—a longevity that has inspired the terms Plasticene and Plasticocene—helps provide deep time perspective on the Anthropocene.

Single-use plastics might seem to disappear when I dispose of it, but it (and therefore I) will nonetheless continue to act on the environments in which it persists for millennia ... Deep time is not an abstract, distant prospect, but a spectral presence in the everyday. The irony of the Anthropocene is that we are conjuring ourselves as ghosts that will haunt the very deep future. (Farrier, 2016, para. 8; para. 10)

With the production of single-use plastic continuing to rise (Stanway, 2023), the Plasticene as a concept will surely have a flourishing future.

Money (2019) is resigned to the fact that “advances in agriculture and medicine ... will lead to the collapse of civilization and our eventual extinction” (p. 102). Our hubris cannot be blamed on one way of being, one form of governance, one religion—though “religious creationists ... are the ultimate egoists” (p. 48)—because the problem is located in our DNA. However, the reality that all human beings are 99.9% genetically the same did not stop scientists from trying to create “overtly *racist* taxonomies” (p. 51), which is yet another “manifestation of our narcissism.” The hierarchies we create are endless. What to do? The best thing we can do as we confront the end of human civilization is to “be kinder to each other and humane toward the rest of nature as it suffers with us on this watery globe” (p. 110). That “[t]he rest of nature will celebrate our departure” (p. 107) provides a sort of *Candide*-like consolation when living in the Anthropocene.

If nothing else, the Anthropocene as a concept gives academics a lot to think about. If those working in the natural and environmental sciences are currently contesting what human activity(ies) started the Anthropocene and when it began, critical theorists seem to be focused on the social, cultural, and political implications of this proposed epoch. The implications regarding who and what is responsible for the sixth extinction have been elevated to a distrust of the science of geology in some areas of the academy. In geophilosophy, a noted argument challenges the *anthropos* of the Anthropocene. “White geology” can be framed “as a historical regime of material power” (Yusuf, 2018, para. 5)

that is implicated in the legacy of racism. In the context of the environmental catastrophe, “distrust of science” (see also Zalasiewicz et al., 2021, p. 18) can also play into the hands of climate change deniers and into the pockets of those who profit from plundering the planet. At the same time, pseudo-sciences such as eugenics are a reminder that some skepticism toward science is not without warrant. Additionally, experimenting on animals in the name of medical research, which has helped extend human life and support the vain quest to remain young, is also problematic from animal rights and human overpopulation perspectives.

As scientific debates on the Anthropocene unfold and as criticisms of the Anthropocene as a concept give birth to more neologisms, the Anthropocene as an “event” or as an “epoch” (depending on what you understand it to be, scientifically speaking) is unfolding, and time marches on. Opposing discourses regarding the Anthropocene have been compared to the warring houses of Westeros in the television series *Game of Thrones* (Chandler and Reid, 2019, p. 14). While the most powerful houses vie for control of the Iron Throne, their battles begin to look increasingly inconsequential as the army of the dead led by the White Walkers comes for the living.

Beyond the academy, at the onset of the Anthropocene, other interests occupy the living. Peter Bruegel the Elder’s painting “Triumph of the Dead” from 1592 may resonate with the situation that we are up against in a more general sense. Behind the many scenes unfolding lies a scorched earth landscape. Moving into the foreground, an army of skeletons descend upon the living. In the bottom righthand corner, a backgammon set and playing cards are in disarray. Close by, a pair of lovers sit together. He plays the lute looking up amorously into her eyes. She gazes down upon him while holding open a leaflet of music. Their heads are turned away from the coming army, oblivious to the doom that awaits them.

### **Time, clockwork, and curriculum**

The Anthropocene has also become a subject of educational inquiry. Educational concerns on it, of course, vary. Farrell (2022) takes an affirmative stance by asking: “What does it mean to educate in a world that is prepared to go on without us?” (p. 1). In his edited volume that attends to the pedagogy of the Anthropocene, Jagodzinski (2018) speaks to the causal question: “the Anthropocene directly equates the agent of incumbent responsibility for the global crisis to the ‘White Man’ of European Enlightenment” (p. 2). Gough (2021) is critical of the Anthropocene as a term because of “the way it hides troublesome differences between humans (including gender and cultural differences) ... and other marginalized groups” (p. 1). As such, she asserts that “[e]ducation in the Anthropocene ... requires learners to critique the Anthropocene as a concept.” The



stances one takes on the Anthropocene in educational research, policies, and practices may well be one of the most important stances one may ever take, if living near the end of times as we know it is to be taken seriously.

With stances in mind, Sutoris (2023) argues that “[e]ducation has never played as critical a role in determining humanity’s future as it does in the Anthropocene” (n.p.). Education, especially in the modern world, has also played a role in getting us to this place called the Anthropocene. In developing their argument that education “is a key apparatus supporting the Anthropocene,” Peim and Stock (2022, p. 251) question the assumption that education in its “natural” state, or a state different from how it operates today could actually combat “the end of the world” (p. 252). They do not assert, as Money (2019) does, that the human-caused existential catastrophe is built into our genes.

However, the catastrophe is buttressed by the “hyperobject” of education. Hyperobjects are non-local objects that cannot be pointed to in the way that one can point to “coffee cups and pencils” (Peim and Stock, 2022, p. 255). Hyperobjects are “uncanny and strange, massive and daunting.” If education is indeed a hyperobject, it is beyond our ability to control it. It is compared to the floating area of plastic trash that is “The Great Pacific Garbage Patch [that] will dominate that part of the ocean long after we have gone” (p. 259). Temporally speaking, if education has a beginning with “civilization itself,” with what is the “oldest school in the world [that]...has been in operation since 597,” then its ending (if there is an ending) goes beyond our wildest notions of what it can do in time and space. The promise of education is a promise that we can count on.

Curriculum theorists who have invested time in critiquing the hidden curriculum of classroom time seem to suggest that if time were to be used differently, schooling could create different kinds of people. Rather than using all those hours in the day to produce “the passive conformist” (Jackson, 1968/2013, p. 125), who is perfectly prepared for work in “The Company,” schools ought to instill curiosity in learners. It is suggested that the “curious person” is similar to, or can one day become, a “scholar [who] must develop the habit of challenging authority and of questioning the value of tradition.” Underlying the many critiques of the factory model of education, of “bureaucratic efficiency in school management and curriculum theory” (Kliebard, 1975) is a faith that education can be different from the way it is pervasively practiced. It can be a force for freedom and salvation if time is used more wisely. Why haven’t we found a new, better way to conceptualize classroom time remains the underlying question.

All that time, all those long hours and dreary routines that constitute school life, all the clockwork efficiency measures that continue to define the curriculum in many contexts, and all the myriad of other ways that time is used in classrooms contributes to a time in

the deep future that may or may not include those whom we care about the most, ourselves.

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