

She Blinded Me with Science

Post-Curriculum and the New Scientific Education

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IN THIS ARTICLE, WE RE-EXAMINE THE HISTORY OF CURRICULUM STUDIES based on its relationship with the role of science. We are not concerned with science education *per se* but what Rasoul Nejadmehr (2020) calls “scientific education,” or the elements of a science of education, specifically as it relates to curriculum. In the now classic text, Kliebard’s (1986/2004) *The Struggle for the American Curriculum* occupies a privileged place in the field of curriculum studies. Kliebard presents four strong “currents” (as opposed to pendulum swings) in the stream of curriculum scholarship: humanism, child developmentalism, social meliorism, and social efficiency (p. 208). Kliebard characterizes the four frames and their proponents as struggling with each other to become the guiding norm that drives school practice. Likewise captured by Kuhn’s (1970) study of paradigms, they compete for the status of normal science in curriculum studies, against which all other perspectives are measured. Now part of the nomenclature in the academy, paradigms are more than perspectives that scholars happen to accept or reject. Paradigms exert pressure, in the cognitive and political sense, as we attempt to make sense of social phenomena. They provide a schema through which certain patterns are discerned or, just as important, are rendered invisible because they do not fit the normal case. More profoundly, many scientists—now including social scientists and curriculum scholars—do not merely position themselves *against* the dominant paradigm but labor to replace it by crafting *the new paradigm*. Kliebard (1992) provides one of the most useful histories of curriculum thought that contemporary curriculum scholars may leverage. But he does not focus on the role and evolution of science in what he calls the *Forging of the American Curriculum*. We argue that the central role of science mediates the otherwise complete and almost timeless feel of *The Struggle*.

The period of classical curriculum studies marks its beginning as a subdiscipline. Arguably born from the first book that bears the name in its title, Bobbitt’s (1918) *The Curriculum*, curriculum studies touched the academic enterprise from psychology to philosophy, the humanities to social sciences. Nowhere is science’s influence more felt than the formalization of curriculum studies as a bona fide specialization. As a discourse in Foucault’s (1972) sense, from the mid-1950s on, curriculum studies developed a specialized language and a scientific form of

intelligibility that eventually dominated the field. But by the late 1970s and early 80s, a science of curriculum gave way to the cultural politics of knowledge. In other words, curriculum scholars shifted the attention away from the role of science as arbiter of truth toward the politics of truth, as science became a target of ideology critique.

We pivot towards what we describe as “post-curriculum” scholarship or a radical questioning about the guarantees of a science of curriculum. Here, we present an interpretation of the “post” in general post-theorizing as a place of ambivalence rather than a temporal indication of an “after” or sense of disinvestment in science. Finally, our turn to “new science” is not a rejection of scientific thought and method *per se* as much as it asserts the skepticism central to the scientific endeavor itself. We speculate what post-curriculum thought and the new science have to offer education, curriculum thought specifically, in a time of radical upheaval in the United States and across the globe.

An Abbreviated History of Curriculum Studies: From the Science of Curriculum to the Cultural Politics of Knowledge

By the time that Dewey’s academic life and long and illustrious career were nearing their end, the curriculum field was well established. Its debt to Dewey (e.g., see 1916, 1938) and the early curriculum scholars cannot be overstated. Born was a new specialization in education traceable to Latin origins meaning “racecourse,” as curriculum sprinted to the front of the discipline to take notice. It was led by scholars who were in touch with practitioners and school districts, thinkers and doers at the same time (Pinar, 1981). As curriculum scholarship matured, its community of intellectuals became organized as an academic force. Several generations of curriculum thinkers had gone through the educational pipeline and followed their mentors’ teachings, traditions, victories, and defeats. Curriculum became a science, and a Copernican revolution of sorts put the heavens in order.

A new cadre of names and set of discourses spread over the field, central to which was the continuing role of science in curriculum studies. Schwab, Popham, Beauchamp, and Tyler, to name a few, would replace the giants of Dewey, Counts, Harris, and Bobbitt. The city of Chicago was proudly home to two prominent Phil Jacksons, one at the University, the other an eventual coach of Michael Jordan. Although we do not want to overstate the complete dominance of science in the advancement of curriculum thought, such that curriculum as dramaturgical (Schwab, 1981) or artistic (Eisner, 2005) competed for paradigmatic status, the hold of scientific discourse over curriculum became formidable. Mainly cognitive and empiricist in orientation, the heyday of curriculum scholarship became fertile ground for new scientific distinctions and terminologies, as “vocabulary is still one of the chief problems in curriculum theory” (Johnson, 1981, p. 71). For example, Jackson’s (1968/1994) helpful concept of the “hidden curriculum,” or information often invisible or unintentionally taught and values implicitly endorsed, gave rise to other concepts like the “null,” “void,” or “enacted” curriculum. We could say that the overt curriculum is the medium, and the hidden curriculum is the message. At the structural level, Macdonald (as cited by Johnson, 1981) asserts that a scientific study of the curriculum does not involve studying people (p. 72), just as Saussure (1983) once claimed that a scientific appreciation of language is to understand it independent of humans. In other words, a systematic knowledge of curriculum apprehends its structure as an object of study. If this is correct, then scholars understand what a curriculum is rather than what it should be, what it consists of rather than what it does or accomplishes. The

latter belongs, properly speaking, to instruction when curricular content crosses the threshold to teaching.

In the search for a science of curriculum, the Tyler Rationale was one of the most successful translations of curriculum scholarship for the world of practice. Ralph Tyler (1969) published a short manual for understanding curriculum as made up of four constitutive parts: objectives, learning experiences, organization of said experiences, and evaluation. Deceptively simple, the Tyler Rationale influenced an entire generation of scholars and practitioners, whose echoes are still heard today. Its language was at once concerned with a conception and practice of curriculum—the first a theoretical apparatus for practice, the second a practical form of theory. At least through the 1960s and into the 70s, the influence of curriculum scholars was felt at the center of the discipline of education, with science leading as the dominant frame through which scholars enter the conversation. Graduate schools of education would have been remiss to neglect having a curriculum scholar grace their roster.

But an intellectual storm was brewing, and curriculum scholarship was caught without an umbrella. Asking what a “critical rationale” might look like, the new Left was developing, influenced by Marxist studies, Cultural Studies, postmodernism, anti-foundationalism, and anti-racism and feminism. Dewey was slowly being eclipsed by Derrida and Du Bois. By the mid 1970s and surely by the 1980s, the intellectual landscape had experienced profound shifts, including curriculum studies. One of the targets of critique was the status of science. From early to mid 20th century, the role of science in curricular thought provided a coherence even among intellectual adversaries and animators. Despite the fierce debates between the Reconstructionists and Progressives at the turn of the century and the parsing of curricular definitions by Eisner (1996) and Jackson (1968/1994), it would have been considered heretical to question radically the function of science and *still remain at the center of the curricular stage*. But with the rising influence of the Frankfurt School’s analysis of science as a form of instrumental ideology (see Horkheimer and Adorno, 1976), feminist and anti-racist critiques of eugenics and standard androcentrism in science (Martin, 1992; Stepan, 1990), and the arrival of Foucauldian (1980) studies of science as a “regime of truth” (p. 132), curriculum scholarship records a similar period of radical questioning regarding the scientific enterprise. Turning away from a science of the curriculum and toward the political economy of knowledge (Huebner, 1981), a new appreciation for theories of ideology (Apple, 1979/2019), cultural politics of subjectivity (Giroux, 1981), aesthetics (Pinar, 1998), *carrere* (Pinar, 1975), and biography (Grumet, 1988), curriculum reconceptualization cast a skeptical, if not also critical, eye on “traditional” curriculum scholarship and its unstated fetishization of science. In this new and “critical” generation, some preferred Marx’s Hegelianism over Dewey’s; instead of Frederick Taylor (1911) and Fordism, some sided with the Canadian social theorist, Charles Taylor, while others found purchase in Gramsci’s (1971) outline of a post-Fordist economy; and without objecting outright the Tyler Rationale, some wondered what a critical rationale might look like. This does not suggest that these new scholars were anti-science as much as they were embracing anti-scientism—less a rejection of scientific practice than an unveiling of its ideological excesses and fetishes, the influence of Althusser’s (1971) scientific Marxism notwithstanding. Finally, it would be fair to characterize the curriculum scholars of the new Left as having as wide a difference among them as the preceding generation. The turn away from science in curriculum studies by the 1980s was a turn toward cultural politics. Curriculum had become more than a collection of works—the “stuff”—and the teaching approaches accompanying them. It was, as Giroux (1983) argued elegantly, an introduction to a particular way of life.

Curriculum setting had become a vision of a possible society, a utopia, in one sense, or a segregation of bodies, including bodies of knowledge, in another sense. Scientific thinking was no longer seen as the objective march of more accurate knowledge away from provincialism without proper accounting for its role in empire (Nejadmehr, 2020). Like curriculum, science came to be understood not only as a cognitive or epistemological enterprise but, like other ideologies, able to construct, or better yet invent, the “human.” This did not equate scientific knowledge with other ideologies, like religion, but acknowledged that science builds an instrumental worldview that produces concomitant consequences, not the least of which is the cut within the category of human with European whites on the scientific human side and African blacks derogated to the zone of non-being (Fanon, 1952/2008; see also Wynter, 2001). In the U.S., Eurocentric curriculum came under intense questioning in the “culture wars” by the multiculturalist Left led by James Banks (1994/2002), Sonia Nieto (1991/2003), Geneva Gay (2000), and Carl Grant (2014) well past the 1990s. In addition, a science of curriculum that has little appreciation for education’s share in the reproduction of the conditions of production was deemed to be at risk of turning Johnny into a technical learner (of reading, writing, and arithmetic) while neglecting his social conditions. Finally, a science of curriculum that fails to notice who cleans up after the scientists had been framed as one that would reproduce patriarchy and a weak form of objectivity that hopelessly represents a partial and segregated truth (see Harding, 1991).

The turn toward critical curriculum studies marked a new theoretical relationship between scholars, the knowledge they produce, and the sociality they encourage. In an abridged representation of Mauritz Johnson’s (1981) schema of the curriculum (see Appendix A), there is a clear attempt to scientize or mathematize curricular understanding. One might consider Johnson’s uncovered exclusion of “indigenous cultural content” as a precursor to the curricular movement of “inclusion as enclosure in Native culture-based education” (Richardson, 2011, p. 332). Although Johnson’s model may not represent other traditional forms of curriculum scholarship or his contemporaries, it is instructive because it exposes a tendency, a *style*, as Nejadmehr (2020) might suggest, which runs through the intellectual edifice of the subdiscipline’s center and now comes under scrutiny.

Decolonizing the (Kantian) Curriculum: From *Enlightenment* to *Endarkenment*

Rasoul Nejadmehr’s (2020) critical engagement of Kantianism in modern education is decisive in our understanding of scientific education’s role in curriculum scholarship. In *Kantian Genesis of the Problem of Scientific Education* (2020), preceded by *Education, Science and Truth* (2009), Nejadmehr performs a critical genealogy of scientific education as inaugurated by Kant and thereafter sustained by mainstream educational scholars, including those studying curriculum. Systematized by Kant, scientific education was the problematic reduction of knowledge to Western notions of rationality that disparaged non-Western ways of knowing as already irrational. This Western style is captured by Nejadmehr’s (2020) interrogation of scientific education as such:

Science education refers to daily school practices such as lessons, examinations and assessments. These practices occur against a background that assigns them meaning and marks them as educational, a general orientation that leads them in the same direction and a foundation that makes them possible. Scientific education signifies this constitutive background, this orientation and foundation of educational practices and procedures. It is

about unarticulated values, norms, discourses and educational presumptions that are taken for granted as well as the educational apparatus that puts them into action beyond school boundaries. Although this layer of education is extremely important for education, it works invisibly; it signifies something of which educators can become aware rather than something of which they always are aware. ... In this sense, scientific education is a genealogical and descriptive notion. (p. 1)

Nejadmehr goes at length to describe Western scientific education, specifically Kantianism, as a certain system of thought that is taken for granted as the tape that measures human worth, without which other traditions and people are not taken seriously or are regarded simply as illegible. What became a Kantian revolution in knowledge and consequently asserted as universal, transformed into common sense—in a manner that is hidden but constitutive—for curriculum scholars from Dewey on.

Once established, the problem is less Kant than a Kantianism that rarely has to be articulated but is almost always assumed as part of normal science in curriculum thought. Deserving to be quoted at length, Nejadmehr (2020) explains,

Kantianism is not necessarily limited to what Kant has said, written and done; rather, it goes far beyond it, and though it may remain related and faithful to Kant's style of thought and the kind of views he withheld, it encompasses the way in which his heirs as well as his opponents carried on his ideas and the implications of Kant's ideas for the world after him. In this regard Kant's ideas are prototypes or proto-ideas, as Ludwik Fleck (1979) would say, embryonic and undeveloped versions of their posterity. This is to say that Kant inaugurated a tradition that lasted beyond himself [and] greater than Kantianism. Thus, in dealing with the genesis of scientific education in Kant, we have to do with issues such as Kant's point of departure in laying a ground for scientific education, the way he carried it out, the originality of this foundation and how this foundation endured and become the tacit intellectual infrastructure of current education. My concern is neither Kant nor Kantianism as such; I use both to understand the actuality of education in our time. (p. 5)

For Nejadmehr, the project of what we, here, call “post-curriculum” entails not so much a rejection of Kant/ianism as much as decolonizing its Eurocentric excesses, of provoking another revolution of knowledge through anti-racist science by joining Dillard's (2000) call for an “endarkened feminist epistemology” (see also, Wright, 2003; Hurtado, 2003). By saying this, replacing *Enlightenment* with *Endarkenment* is not dependent on an essential racial subject but a racial project, a curriculum agenda centering the history of knowledge from the unique perspective and historical experience of racio-colonial communities. This is tantamount to suggesting, with Frantz Fanon (1952/2008) and his interlocutor and critic Sylvia Wynter (1987), that Enlightenment or humanism is not the property of Europeans, henceforth, deposed by a certain humanism of the other, or Endarkenment. Wynter (1987) writes,

For our proposed new objects of knowledge to be receivable, we accordingly need to go beyond the ontology of the figure of man and the empowering normalizing discourses with which this “figure,” as the projected model/criterion of being of the globally dominant Western-European bourgeoisie, is still enchantedly constituted-now dangerously, in the context of our post-atomic environment. (p. 208)

The figure of European summer is here exchanged for black winter's enchanted subject. This move inaugurates a more human/e universalism replacing the Kantianism that has underwritten curriculum scholarship's history, toward a new science of the human. It is insufficient simply to reject Kantianism but requires engaging Kant's ideas in light of their consequences for modern education. Nejadmehr's (2020) intervention is more profound than an exercise in refutation because

given Kant's systematic manner and style of thought, a line-by-line reading of him is anti-Kantian, a misreading of him and limited in scope. It is a micro-perspective and misses the overall picture. My strategy is to read Kant organically, as Kant himself invites us to do. (p. 13)

We join Nejadmehr in reading Kant against his own philosophical excesses.

Highlighting this racio-colonial difference, compare Johnson's (1981) schema with Beyer and Apple's (1988) list of questions (see Appendix B) that curriculum scholars from the 1980s and on ought to take up. Even absent a nuanced content analysis, the radical difference between Johnson's (1981) and Beyer and Apple's (1988) priorities is obvious and palpable. Favoring technique, Johnson turns curriculum into an object of study in the literal sense. It is objectified, surveyed, and reduced to defining characteristics typical of a traditional and cognitivist science of the curriculum. In contrast to Johnson's binary between "disciplinary" vs. "non-disciplinary" knowledge, Beyer and Apple recruit an interdisciplinary approach that zooms out before it can dive into the heart of curriculum matters. It demands a reckoning with social conditions, power, and subjective agency. It is comparable to the shift from the rhetoric of effects, which is positivist and hierarchical, to the rhetoric of cultural production as described by Gaztambide-Fernández (2013) in the context of arts in education (p. 211). Furthermore, new curriculum studies (called Reconceptualism elsewhere) is not anti-science as much as it asks science to serve the social good through education. And while Beyer and Apple may call on science, they do not fetishize it. Along with the new Left, we may argue that a new scientific education emerges, which is the topic of the next section. Having thus introduced our problematic, we sketch the outlines of a decolonized science of curriculum.

Bringing Curriculum Studies into the *Post* with a Pluralistic New Science

In the history of curriculum studies, one could observe how the systematization of scientific management is expressed as a fetishized, absolute science. Meanwhile, the sciences diverge and evolve independently from the absolute science crystallized in early 20th century U.S. curriculum theory. The history of science and science philosophy, along with Science Technology Studies and the social studies of science, have the potential to shape the "world of sciences" today (Harding, 2011, p. 9). Here, we focus on the anti-traditionalism that was and still is a part of the sciences. Iterative paradigm shifts make up the history and future in our conception of a new science, which provide an impetus for a comparable movement in the history and future of curriculum theory. The transdisciplinary critique of absolute science generates a new science, which converges in the curriculum field at a place of ambivalence: post-curriculum.

Note that "post" is a theoretical marking that is spatial, not only temporal. Although "post" is often used as a prefix to imply something temporal, the term used here has deeper etymological

roots that are spatial (for more on “post,” see Leonardo, 2010, 2013, 2020). Post can be a marker or pole used to indicate a starting or finishing point of a horse race, forming a parallel with the etymology of “curriculum,” or racecourse. Public notices are adhered (or “posted”) to a post. In the early 21st century, the term “post” endures for messages delivered by the postal service and by electronic message boards on social media platforms where we post announcements. The spatial and communicative elements of “post” reiterate that our claim is not that curriculum studies is necessarily “moribund” (Schwab, 1969/2013). Rather than being *in the past*, curriculum studies is *in the post*.

To conceptualize a new science, we first consider a cultural representation of traditional, absolute science. “She Blinded me with Science” is the title of Thomas Dolby’s one-hit wonder of the 1980s. As Agosto et al. (2019) problematize the use of deficit-laden terms in academic literature, one may challenge the deficit-paradigm implied by the song title: “A critique that tears at the limits of the paradigms that threaten to [“blind”] bind us, we hope to spur work(s) and study/studies that ... welcome dis/orderly and dis/orienting reflection.” (p. 37). Dis-orienting reflection will involve being critical, indeed self-critical, to evade the trap of the convenience of re-producing Western regimes of thought. One may re-locate the Western regimes of scientific education of curriculum theory precisely by locating them in a broader discourse of post-curriculum. We focus our self-critical concern of scientific education in a pluralistic new science, or “world of sciences” (Harding, 2011, p. 9), in subsequent sections.

An ideal scientific process is iteratively self-skeptical and self-correcting. To be “blinded” by science may elevate science to the status of absolute truth, inferring that human-constructed knowledge may exist outside social worlds. While focusing on how to make the curriculum more scientific, traditional curricularists may have lost sight of how the practice of science is thoroughly social. Using Nejadmehr’s (2009, 2020) conception of “scientific education,” the next section uncovers how science was crystallized in curriculum studies.

Scientific Education

Nejadmehr (2009, 2020) offers the distinction between scientific education and science education. Science education is disciplinary and content-focused, whereas scientific education is the conception of distinct subject areas, all of which could be taught scientifically or not, and “signified by the rational systematisation of knowledge and schematised and routinised methods of learning” (Nejadmehr, 2009, p. 27). Efficiency is key, or as Jean-François Lyotard (1984) describes it, high *performativity* with a low input to high output ratio. In schools, this may amount to fewer teachers and more students or one standardized test and more scores in order to sort and track students more efficiently.

Scientific education pervades all subjects across curriculum history. With the conception, uptake, and domination of a scientific worldview or instrumental ideology, the social construction of reality by religions and myths was “forced to cope” (Berger & Luckmann, 1966/1967, p. 106). During the European Enlightenment, people developing early theories of science opposed religious authority with “ecclesiastical scholasticism” (Nejadmehr, 2009, p. 32). However, as an affront to faith-based knowledge, the historical roots of science do not prevent scientific education from dominating in a comparable, authoritative fashion. It would be too much to call science the new religion, for this would conflate faith with empiricism, two radically different ways of constructing the world. That said, during the Enlightenment, science was slowly replacing religion as the

dominant worldview about origin, meaning, and truth. The expectation of scientific education is, as Nejadmehr (2009) describes, “based on the article of faith that there is a single world ... an absolute reality that is one and the same for all” (p. 34). This conception of scientific education as an absolute reality appears to be crystallized – permanently fixed – in the foundations of U.S. curriculum theory.

Once adapted for curriculum theory, scientific education elevates the status of “experts.” With the elevation of the expert, “The ‘lay’ member of society no longer knows how his universe is to be conceptually maintained, although, of course, he still knows who the specialists of universe-maintenance are presumed to be” (Berger & Luckmann, 1966/1967, p. 130). The study of the social construction of knowledge deems scientific knowledge and its constructors (or charlatans) as more credible than faith-based, local, or “lay” knowledge (Berger & Luckmann, 1966/1967, p. 135). However, throughout the “whitestream” history of settler colonialism, there are examples of how white settlers claim and exploit knowledge of “the other” and, subsequently, how Indigenous knowledge is repurposed as multiculturalism in curriculum studies (Tuck & Gaztambide-Fernández, 2013, p. 82). Consider the scientific experts at the genesis of U.S. curriculum studies, set in the historical context of eugenics. People regarded as scientists at the time used measurable phenotypic characteristics to justify racist ideology. Efficiencyists harnessed the self-proclaimed prowess of scientific quantification and applied it to measure intelligence: “‘Science’ became the rhetorical, though often unconscious, cloak to cover conservative social and educational decisions Bobbitt and others increasingly codified their arguments in scientific terms” (Apple, 1979/2019, p. 75). As arguments for social efficiency became codified in scientific rhetoric, social control became justified and associated with the language of science, ultimately promoting a nature-based and deterministic view of learning. Of course, these assumptions of what science seemed to offer curriculum studies concealed what was guaranteed: the self-preservation of an absolute science, sourced from white settlers of European-*Enlightenment* descent as “experts.”

Consequently, the “experts” upholding racist ideologies maintained the status quo by sorting people based on the meaning ascribed to “measurable” human differences. Remnants of this science adopted by efficiencyists persist today in the form of standardized testing, which implicitly assumes that measured intelligence can be used to track students and which disproportionately impacts students of color (Oakes, 2005). It would be inappropriate to measure children’s skulls today, so the eugenics of the past is translated to the testocracy of today. This test-steroid infused science is now under intense scrutiny as colleges and universities question the predictive utility of the SAT, GRE, and other entrance exams.

Absolute science was the soil in which scientific education germinated. Apple (1979/2019) specified that “educators have borrowed only the language, often on the surface language and have, hence, pulled the terminology out of its self-correcting context” (p. 116). As curriculum studies became scientized, it became self-legitimized as objective, and yet this absolute science was devoid of the critique of science. As curriculum studies developed into a recognized subdiscipline, the sciences evolved in parallel with their own self-correcting processes, independent from scientific curriculum studies. The dialectical relationship is severed when the concept of “science” is integrated into curriculum studies. It diverges from the evolving social reality of scientific practice. Epistemological absolutism came to dominate curricular thought.

Academic expectations for scientific education reinforce the assimilation of curricularists to the performance of scientific supremacy. The science to which they aspire is based on an illusion: “Curriculum workers’ ties to a sought-after reference group—here, the scientific

community, and ... a misperceived scientific community at that” (Apple, 1979/2019, p. 119). In aspiring to be scientific, traditional curricularists pursued absolute knowledge detached from the messiness of human affairs, or at worst a dehumanizing absolute knowledge. Dehumanization, or the separation between humans and their participation in the construction of knowledge, culminates in what Nejadmehr (2009, 2020) describes as relations of alienation or estrangement (pp. 36–37 & pp. 183–184, respectively).

As an alternative to the dehumanized and “unquestionable ground of knowledge” protected by absolutism (Nejadmehr, 2009, p. 17), rehumanization makes human participation in the production of knowledge explicit. Curriculum theory is rehumanized through social critique. The claims for truth made with the “technocratic model of curriculum” resulted in “truncated forms of inquiry” that disregarded other forms of knowledge production (Giroux, 1981, p. 100). By valorizing the scientific approach, the technocratic model of curriculum neglected the differing and, at times, contradictory perspectives within the scientific community itself (Giroux, 1981, p. 102). Curriculum Reconceptualists, like Giroux, critiqued the reified absolute science of scientific education. Meanwhile, the philosophy and sociology of science offered a self-correcting context for the world of sciences. At the turn of the 20th century, W. E. B. Du Bois (as cited by Morris, 2015) “believed that scientific knowledge could help liberate blacks in America” (p. 21). Decades later, along with the emergence of the politics of curriculum, science philosopher and historian Thomas Kuhn (1970) identified patterns in the development, acceptance, and refutation of scientific knowledge, and sociologist Robert K. Merton (1973) described norms of the scientific community. Sandra Harding (1991) and Dorothy Smith (1987) offered a feminist critique of science. Anne Fausto-Sterling (2012) deconstructs how gender and sexuality are understood in biological and medical contexts, and scientists themselves have quantified sex bias in research (Beery & Zucker, 2011) and advocated for the economic benefits of sex inclusion in basic research (Klein et al., 2015). Postcolonial critique of science and technology (Harding, 2011) has taken place along with critics of orientalism, such as Edward Said (1979) and Laura Nader (2014, 2015). Race reification in science has been investigated in genetics by Troy Duster (2005) and in physics by Chanda Prescod-Weinstein (2020). Countless other social scientists and philosophers have contributed to unmasking scientists as subjective human agents, as faces hidden behind the authority of scientific expertise. Nejadmehr (2020) describes the value of “Western self-criticism” (p. 146) of the Kantian genesis of scientific education. The aforementioned philosophers, sociologists, and scientists also critique science from the vantage point of the Western tradition as a form of self-correction.

Another option Nejadmehr (2020) describes is “criticism from an external perspective” (p. 154). By inviting intellectual contributions from all parts of the world using frameworks developed outside the Kantian paradigm of Western Enlightenment, such as decolonial and subaltern methods, educators could develop “a new global state of mind” (Nejadmehr, 2020, p. 162). A world of sciences can provincialize, or place into its historical context (Chakrabarty, 2008), the European absolute science embedded in U.S. curriculum theory. By doing so, we locate it within the particular history that interpellates it against its absolutist ambitions. Beyer and Apple (1988) ask questions, discussed in the previous section of this article, that rehumanize and historicize the absolute science informing curriculum studies. However, once the questions are asked, can established curricularists embedded in white settler colonialism listen to the criticism from an external perspective? Tuck and Gaztambide-Fernández (2013) describe “Browning” as “a move that deliberately seeks to uncover and highlight the myriad of complicated ways in which white supremacy and colonization constantly manifest themselves in curriculum scholarship” (p. 83) and

is “anti-paradigmatic to curriculum studies” (p. 84), providing an example of how white affect was (and is) implemented to dis/engage with “Indigenous, queer, critical race, and post-, anti-, and decolonial perspectives” (p. 84). In a way, it seems that relativism could be used either to challenge or maintain the status quo in curriculum studies.

What are alternatives to absolutism and relativism in curriculum studies, education, and knowledge? A tension exists between the local, context-dependent nature of education and the proclaimed universality of absolute truth efficiently embedded in U.S. curriculum scholarship. Critiques of perpetual relativism, without alternatives, foreclose the possibility of a pluralistic world of sciences. Because the social constructivism of science was wielded as a means of challenging scientific authority, unintended consequences leave Bruno Latour critiquing such critique itself. In an interview, Latour argues, “We will have to regain some of the authority of science. That is the complete opposite from where we started doing science studies. But the solution is the same: You need to present science as science in action” (de Vrieze, 2017, para. 14). In our attempt to rehabilitate the science of curriculum, our caveat is that it is questionable that a dialectical return to the “authority of science” can or should be accomplished. Considering scientific education as a form of absolutism and the caricature of the Reconceptualists of curriculum as relativists, one may find both of these approaches to be dead ends, for “absolutism demands consensus and assimilation of all perspectives into a single one and relativism disperses humanity into scattered paradigms incapable of communicating and agreeing on things” (Nejadmehr, 2009, p. 21). Our challenge is to explore an alternative social re-construction of science as a new science and to reconcile universalist and relativist curriculum theories in our conception of post-curriculum.

Prerequisites for Post-curriculum and the New Scientific Education

Post-curriculum is a reclamation of place and communication as prerequisites for multi-disciplinary and cross-cultural connection for ongoing issues in curriculum studies. It recognizes the travelers in the field of curriculum studies as wearing “a set of spectacles that allow certain parts of the field to be seen more or less than others, always depending on the vantage point from which one looks” (Gaztambide-Fernández, 2009, p. 237). Furthermore, post-curriculum can serve as a complementary alternative to standpoint epistemology. As described by Harding (2011), standpoint epistemology is a

geographical metaphor [that] directs attention to a location, a site in social relations, from which a disadvantaged group learns to observe and speak for itself and to the advantaged group about how unjust and oppressive social relations affect their lives. (p. 19)

Instead of merely being a perspective, standpoints are “intellectual and political achievements in that a group has to work together to figure out how to arrive at them,” and these achievements come with a synthesis of a “scientific study of everyday life” and “political struggles to gain access to sites” (e.g., boardrooms, policy circles, etc.) (Harding, 2011, p. 19).

Once we have gathered at post-curriculum, a meeting point, how can we broach the topic of scientific education in curricular discourse? The trap of convenience and the promise of scientific education may limit our creative collective consciousness to alternatives. To escape this trap, let us imagine a new science, encompassing a world of sciences in an on-going inquiry of

“*What’s next?*” Within a post-curricular formation, we do not uphold science as a bearer of truth and marginalize other sources of knowledge. Consider empiricism at the level of the individual, as offered by Berger and Luckmann (1966/1967): “The validity of my knowledge of everyday life is taken for granted by myself and by others until further notice, that is, until a problem arises that cannot be solved in terms of it” (p. 58). “My” knowledge may or may not align with scientific knowledge, and yet both function as truth and both are subject to modification. It is incumbent upon the individuals to self-reflect on their knowledge and to seek to understand perspectives that are different from their own, without falling to relativism and in a contrapuntal relationship with knowledge, as Said (2004) would argue. Likewise, Nejadmehr (2009) describes “a strong notion of the individual,” who can, “look at one’s own perspective through the prism of others,” “possess a rigorous form of argumentation,” and “resist manipulative powers of collectives and states” (p. 172). This is reminiscent of Harding’s (1991) insistence on a strong form of objectivity in science, which intentionally includes perspectives of marginalized groups for a broader objectivity and a larger slice of truth. A new science as proposed here would shift the focus from science as truth to individuals as the creators and modifiers of knowledge. One may wonder if a possible mechanism to fostering a strong notion of the individual, and their positionalities with/in culture, could be through multidimensional autobiography with *currere* (Pinar, 1975).

Although a new science validates knowledge as experience at the individual level until further notice, what about the authoritative aspect of science in institutions? To address this, let us consider new science as a dereified science. Dereification is described as a “collapse of institutional orders, the contact between previously segregated societies, and the important phenomenon of social marginality” (Berger & Luckmann, 1966/1967, p. 109). However, a “collapse of institutional orders” does not occur passively, especially when there are beneficiaries who are advantaged by keeping institutional orders as they are. For “a strong notion of the individual” to resist institutional orders imposed by science, the individual must be aware of the institutional orders and seek to understand their impact on marginalized people and perspectives. Nejadmehr (2009) suggests an “awareness of the real conditions of life” (p. 172) as well as “a strong culture” that “encourages marginalized perspectives to take an active part in the production and use of knowledge.” (p. 179). For societies with persisting racial, ethnic, and socio-economic strife, the oppressors’ “tolerance” of oppressed “others” can be seen as a patronizing move, what Paulo Freire (1968/1993) calls “false charity” (p. 27).

Therefore, dereifying science may require what Nejadmehr (2009) refers to as a “cognitive democracy,” which “establishes equality between different perspectives and maintains inclusion as a principal cognitive norm” (p. 166). A cognitive democracy of strong individuals, self-reflecting and encouraging of a multitude of perspectives on institutional orders, fosters an equally strong culture that challenges the authoritative aspect of science and would serve to create an ever-changing new science. In subsequent work, Nejadmehr (2020) describes *homo polytropos* as one who may “view non-whites’ experiences as part of a new global intellectual alliance, where Western self-criticism is united with criticisms from the perspectives of oppressed people” (p. 187). He emphasizes the need to create a counter-education of counter-narratives to “rethink and delink whiteness from privileges” (p. 187). By including a diversity of perspectives as the basic premise of truth, and not limiting truth to the empiricism of institutionally-ordained experts, a new global intellectual alliance becomes an imperative to understanding our world.

Challenges of Post-Curriculum and the New Scientific Education

The ideals of Harding's (2011) "world of sciences" (p. 9) or Nejadmehr's "cognitive democracy" (2009, p. 166) and "new global intellectual alliance" (2020, p. 187) are aspirational alternatives to the scientific education of traditional curricularists. However, a formidable status quo maintains the inequitable distribution of resources and educational access. For example, in the United States, with every step towards progress, a co-evolving force finds yet another way to avoid social responsibility and suppress transformation. When people who were enslaved were prohibited from and punished for learning to read, a fugitive pedagogy was established to create opportunities to learn. When the descendants of enslaved people experienced how their churches and schools as places of learning were vulnerable to white violence and destruction without retribution, the Black community established other ways and places to educate. When their descendants could only attend under-resourced and segregated schools under the guise of white benefactors, Black teachers would lecture from a, literally, hidden curriculum of Black-centered texts (Givens, 2021). When their descendants faced violent protests fueled by white supremacy in the wake of legal enforcement of racial desegregation of schools, Black students and teachers continued to advocate for an equitable distribution of resources and protection (Kluger, 1975). As their descendants continue to be disproportionately suspended from school and subjected to surveillance yet develop "organic capital" in response to criminalization (Rios, 2011, p. 102), the subsequent call for curriculum that explores the impacts of systemic racism is met, in some places, with vehement rejection. The patterns of white oppression and Black resistance perpetuate in ways that make social transformation at even the local level, let alone the ideal of a global intellectual alliance that decenters Western white supremacy, seem like a distant fantasy.

In addition to the Red Queen effect of oppression and resistance in education, another challenge to surmount in achieving a new global intellectual alliance is the issue of decolonizing the mind and decolonizing languages. Nejadmehr (2009) describes the value of cultural interactions informed by translational universalization, instead of imperial universalism that is shaped by Western domination. However, the nuances of language render the task of translation as easier said than done. For example, Ngũgĩ wa Thiong'o (1992) describes the process and challenge of African languages gaining recognition as a language of teaching and learning in the wake of decades of criminalization and erasure. Further, we must consider what it means to discover the realities of the world and who shapes and interprets new knowledge emerging from research. Decolonizing methodologies has focused on predominantly social sciences (Smith, 2012). Decolonizing science has its own complexities, as much of the language of Enlightenment science derives from European languages. In an article featuring Wanga Zembe-Mkabile, a scientist who grew up through the apartheid of South Africa, the author writes, "In Xhosa, Zembe-Mkabile's home language, there isn't even a word for research. The best approximation, she says, is *ukuphanda*, which has negative connotations. 'It means to search for a bad thing, like a police investigation,' she says" (Nordling, 2018, p. 160). These are just a couple of examples that highlight that the challenges of translational universalization in practice. If this is a prerequisite for a new global intellectual alliance, then serious consideration must be given to the value and need for decolonizing language planning as a prerequisite for a decolonized science of curriculum.

Conclusion

As a community of practice, science cannot only be accountable to itself. Outsiders can and should dismantle the authoritative elements of European Enlightenment science to foster a global, cognitive democracy. A new science calls for actively centering different ways of knowing—non-Western, non-European, and non-white. A new science serves to deconstruct the absolute science, from the outside and inside, and overcome the historical subjection of curriculum studies to science. Expanded beyond the definitional boundaries of Western rationality, a new science can unveil aspects of our lived experiences and social realities that have historically been suppressed. Rather than a fixed universal paradigm, a new scientific education is an iterative process of translational universalization. It is highlighting subaltern methods (Nejadmehr, 2020) and “Browning” the curriculum (Tuck & Gaztambide-Fernández, 2013) in the age of Endarkenment (Wynter, 1987). Post-curriculum creates more than the Kantian conditions of possibility to resist, transgress, and transform education—it sets forth an ethical imperative to foster “a world of sciences” (Harding, 2011, p. 9), a “cognitive democracy” (Nejadmehr, 2009, p. 166), a “new global intellectual alliance” (Nejadmehr, 2020), and equitable co-authorship of post-curriculum studies.

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Appendix A. From Johnson’s (1981) *Schema for Curriculum*

1. A curriculum is a structured series of intended learning outcomes.
 - Corollary: Curriculum does not consist of planned learning experiences.
 - Corollary: Curriculum is not a system but the output of one system and an input into another.
 - 1.1 Learning outcomes consist of three classes:
 - 1.11 Knowledge
 - 1.111 Facts: items of verifiable information.
 - 1.112 Concepts: mental constructs epitomizing facts about particular referents.
 - 1.113 Generalizations: (including laws, principles, rules) statements of relationship among two or more concepts.
 - 1.12 Techniques (processes, skills, abilities)
 - 1.121 Cognitive: methods of operating on knowledge intellectually
 - 1.122 Psychomotor: methods of manipulating the body and material things effectively with respect to purposes.
 - 1.13 Values (affects)
 - 1.131 Norms: societal prescriptions and preferences regarding belief and conduct.
 - 1.132 Predilections: individual preferential dispositions (attitudes interests, appreciations, aversions).
 - 1.2 Whenever a curriculum is used in instruction, the intention (to achieve the outcomes) is implicit regardless of the curriculum's origin or sanction. Selection is an essential aspect of curriculum formulation.
 - 2.1 The source from which curriculum is selected is the available culture.
 - Corollary: Societal problems and the needs and interests of children are not sources of curriculum.

- 2.11 Modern communication makes available cultural content that is not indigenous to the society in which the curriculum is formulated
- 2.12 Some indigenous cultural content may be unavailable due to the secrecy of those in possession of it.

(Johnson, 1981, page 80)

Appendix B. Beyer and Apple's (1988) List of Questions

1. Epistemological: What should count as knowledge? As knowing? Should we take a behavioral position and one that divides knowledge and knowing into cognitive, affective, and psychomotor areas, or do we need a less reductive and more integrated picture of knowledge and the mind, one that stresses knowledge as process?
2. Political: Who shall control the selection and distribution of knowledge. Through what institutions?
3. Economic: How is the control of knowledge linked to the existing and distribution of power, goods, and services in society?
4. Ideological: What knowledge is of most worth? Whose knowledge is it?
5. Technical: How shall curricular knowledge be made accessible to students?
6. Aesthetics: How do we link the curriculum knowledge to the biography and personal meanings of the student? How do we act "artfully" as curriculum designers and teachers in doing this?
7. Ethics: How shall we treat others responsibly and justly in education? What ideas of moral conduct and community serve as the underpinnings of the ways students and teachers are treated?
8. Historical: What traditions in the field already exist to help us answer these questions? What other resources do we need to go further? (p. 5)



Pedagogies of Attending and Mourning Posthumanism, Death, and Affirmative Ethics

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Death and Curriculum

IN HIS CHAPTER, “CRIES AND WHISPERS,” William F. Pinar (1992) called for conversations around death to become normative in education. Stemming from the Reconceptualist Movement’s phenomenological foundations, Pinar drew on Heidegger’s philosophical work on the idea of being to suggest that meditation on death might call life into sharper focus. Since then, Pinar has remained a formative presence in the complicated conversation of curriculum theory, as have the Reconceptualist Movement’s roots in phenomenology, feminism, psychoanalysis, and autobiography (Pinar & Grumet, 2015). Pinar’s call to discuss death in curriculum theory and education, however, has gone more or less unanswered. There are a few exceptions to this trend. For example, a recent article on gothic novels (Janicki, 2019), a response to the SARS epidemic (Moore, 2005), a poetic meditation (Leggo, 2017), and a personal reflection (Daspit, 1999) on loss all engage death in some way. Additionally, an article recently published in *Journal of Curriculum and Pedagogy* argued for the importance of interdisciplinarity in teaching about death (Lerum, 2021). The general rule, however, stays true: curriculum theory is more focused on life than death.

There are, of course, those who do think about death in relation to education. A whole literature has emerged around death education in the field of thanatology (e.g., Wass, 2004). That literature, however, suffers the same fate as much educational research—it is too lodged within the paradigms of Western, empirical developmental psychology to recognize its own limitations (Wu, 2022; see also Wittkowski et al., 2015). A survey of 1550 studies published between 1990 and 2010 in the two top thanatology journals recognized death education as a focus in only 3% of the total articles. The same survey suggested that theoretical engagements with death were steadily on the decrease in favor of empirical and qualitative research projects (Wittkowski et al., 2015). In curriculum theory, the Reconceptualist Movement reacted to this same trend in educational research; it carved out space for the personal, the literary, the poetic, and the theoretical in a landscape that was quickly becoming dominated by the empirical. Just as few in curriculum theory have considered death, then, few who study death have considered curriculum theory.

Pinar’s call to engage in complicated curricular conversation around death takes on new meaning and urgency today amid the COVID-19 pandemic and more broadly in the current socio-political and environmental moment. After posthumanist philosopher, Rosi Braidotti (2013, 2019, 2022), upon whose work I draw extensively in this paper, I think of this moment as the posthuman convergence. This convergence is of two factors: on one hand, the Anthropocene, a name given to this time marked by the human effect on the natural world (also called the Sixth Extinction Event), and on the other hand the Fourth Industrial Revolution (Schwab, 2015), a name given to the alacrity of technological change experienced today, which is both facilitated and driven by advanced capitalism. Environmentally, the effects of climate change are more apparent each year in the form of forest fires, draughts, heat waves, floods, and pandemics. Technologically, each new year brings faster and more capable machines that demand we¹ keep pace. Indeed, far from being a panacea pedagogically or socially, technological change often elicits an affective response of exhaustion and anxiety (Braidotti, 2019). Importantly, we do not all experience the effects of these converging forces in the same way. Indeed, Braidotti has become known for the statement “we-are-(all)-in-this-together-but-we-are-not-one-and-the-same” (Braidotti, 2019, p. 52). While the effects of the posthuman convergence pervade the planet, those effects do not erase social difference nor marginalization, and those most adversely affected are routinely BIPOC folks, LGBTQ+ folks, folks with disabilities, and those living in poverty, as the COVID-19 pandemic has shown. One extension offered by posthumanism is to include non-human others (e.g., plants, animals, the earth, rivers) in this cartography of marginalization. Death is everywhere today—not just human deaths, though those are certainly prevalent, but also those more-than-human and other-than-human fatalities that often go unseen or unnoticed. Thinking, teaching, and learning death becomes an imperative amid such circumstance; such is the project of this paper.

In this article, I reengage with Pinar’s call to bring death into curricular conversations. Where Pinar (1992) and many philosophers have studied death from phenomenological perspectives (Barry, 2007; Fairfield, 2015), my engagement is through a posthumanist lens—specifically, though not exclusively, Braidotti’s (2013, 2019, 2022) critical posthumanism. Structurally, I begin by discussing the fragility of life and the necessity of death as a way of introducing the topic and posthumanism. I then apply that posthuman lens to the posthumous—the corpse. My attention to the corpse as a site of inquiry leads to a wider discussion of waste, societal engagement with it, and an emergent environmental ethic. Next, I share two intra-related pedagogical concepts—mourning and attending. I conclude this paper by offering an evocation of Braidotti’s affirmative ethics as a way of moving forward in the current moment of imminent socio-environmental collapse.

Fragility, Necessity, and Posthumanism

Life is fragile, and death is necessary. The current COVID-19 pandemic has shown our global society the former with frightening clarity. The latter, however, is still a question for many. The Silicon Valley transhumanists, those blindly optimistic about the potential of the digital age who propose that the limitations of the human form can be overcome through technology, seem particularly critical of the necessity of death (Braidotti, 2013). Their attempts to conceptually overcome the temporal limits of human life, however, should be understood as a manifestation of a wider societal aversion to death—the often-cited death-denying ethos of Western society (Becker, 1973; see also Barry, 2007; Northcott & Wilson, 2017). This death-denying ethos can be

thought of as “the common tendency for people to try to live their lives as if they are immortal, to push death and dying largely out of the picture” (Cox & Thompson, 2021, p. 31) and a general reluctance of some folks to have conversations about death (Kortes-Miller, 2018). Recently, this death-denying culture has been dismantled with more frequency. Kortes-Miller (2014) and Durant (2018), for example, have highlighted the affective significance of talking about death with both the dying and the grieving.

The surge of human population coupled with the species extinctions of the Anthropocene have also led to discussions of human death from an ecological perspective. Although some deep ecologists were perhaps the most radical of this spectrum in their calls for humans to die so that the Earth could live (Bookchin & Foreman, 1991),² many others are also aware of the necessity of human death to sustainability (Haraway, 2016). Under the surface of these grim and uncomfortable conversations, however, is an ecological view of death, where life more broadly defined than the human but encompassing of it—*zoe* (Braidotti, 2019)—cannot be without the limiting force of death (Braidotti, 2013; Rose, 2012). From this ecological view, “death is a necessary partner” (Rose, 2012, p. 127) in life.

Recent theorizing of the ecological has taken many forms, but much has happened under the moniker of “new materialism”—“new” to differentiate it from Marxist feminism, and “materialism” to highlight the emphasis on physical reality. While there is a plurality of new materialisms, the general thrust of the literature asserts that matter is agentive (Barad, 2007) and/or alive (Bennet, 2010). Braidotti’s (2013, 2019, 2022) critical posthumanism draws on these new materialisms in combination with the deconstructive tools of postmodernism and the Spinozian logics of monism to move beyond the human in myriad ways—beyond anthropocentrism or the centering of the human, beyond the Cartesian separation of body and mind, and beyond enlightenment liberal humanism, all of which have permeated Western thought as a whole. Unlike some posthumanists who see this dismantling of “the human” as an opportunity to ignore social distinctions and marginalizations by focusing on the object to the exclusion of the subject, Braidotti (2013, 2019) centers the subject in her inquiry, naming it as a transversal assemblage. The subject is an assemblage of geological, technological, and biological entities, which are acted upon by psychological forces from below and social forces from above (Braidotti, 2019). In other words, “we” are not the unitary but fragmented consciousness of transcendental reason, but rather a collection of actors co-present in the network of the subject being acted upon by the psychological and the social.

Stepping back to the ecological for a moment, there is a clear critique of anthropocentrism here: if all matter is alive, the matter that makes up the human is no different from the matter that comprises non-humans; there can be no certainty of where the human ends and where the non-human begins. As a counter to the elevation of the human, Braidotti (2013) centers *zoe* rather than *bios*. *Zoe* is a notion of life expanded beyond the human, or *bios* (Braidotti, 2013). Under the logic of vital materialism, *zoe* extends to all matter, and while it may be an easy conceptual leap to see the life of plants and animals, Braidotti’s posthumanism, vital materialism, and *zoe* extend the notion of life to technology as well (see also Bennett, 2010). The computer on which I write this essay has a life of its own that is deeply interconnected with my own life both on the level of our subject-assemblage and my sub-subjective psychic space (see also Downey, 2021).

Braidotti (2013) takes this one step further through the idea of ontological pacifism—that because everything is alive, we should act in such a way as to minimize interference with and harm to other beings. Judith Butler’s (2020) recent book, *The Force of Nonviolence*, also engages this notion through the idea that we cannot harm anything else without also harming ourselves; we are

all interconnected. Ontological pacifism, like much emergent from “new” materialisms, is nothing new; Indigenous folks the world over have held these views for millennia (Gerrard et al., 2017; Murriss, 2018; Todd, 2016). Indeed, contemporary Indigenous scholarship also emerges from a pervasive notion of life and life’s inherent interrelatedness (e.g., Wilson, 2008). Cherokee scholar Daniel Heath Justice (2018), for example, iterates the essential essence of what Braidotti calls ontological pacifism with reference to an Indigenous relationship with Ancestors: “giving proper respect to the Ancestors isn’t just good manners, it’s also good sense for the course of one’s own life, as any harm introduced into the network of relationships will affect every participant, living and dead alike” (p. 124).³

The fragility of human life (*bios*) and the necessity of death present a compelling reason to study death. Understanding and coming to terms with our own mortality is one thing, but living-with the imminence of that mortality is another—one that can perhaps help move us beyond understandings of human existence as somehow special or unique (i.e., beyond anthropocentrism). Indeed, life’s fragility is not something to be raged against—Dylan Thomas poems aside—but rather something to be appreciated in complex, localized, specific, and nuanced ways, both in terms of the human and in terms of the non-human others who co-habit the agentive assemblages that form our subjectivity in life and in death. This “living-with” mortality, non-human and more-than-human others, and the mortality of those others, requires active attention—attending and mourning, as suggested later in this paper.

While posthuman death remains a necessary condition for the survival of *bios* (lest we fall victim to the megalomania of the transhumanists discussed above), posthuman life is anything but fragile. *Zoe* is an unstoppable force second to no other (Braidotti, 2013). Even the seemingly inexhaustible technologies of the third millennium, whose blunt thinking power vastly exceeds our own, whose energy seems boundless, and whose presence seems relentless, fall short in comparison to the power of *zoe* (Braidotti, 2013). Though *bios* is rightfully limited temporally and spatially, *zoe* is boundless. Even in death, *zoe* shows relentless continuance through generational renewal (Rose, 2012) and the agency of the assemblage that forms the corpse (Edwards, 2018)—a signifier of *bios*’ absence replete with *zoe*.

The Corpse

The notion of *zoe* suggests that, when humans die, life continues; “death ... is not final, as *zoe* carries on, relentlessly” (Braidotti, 2013, p. 130). As noted above, the potential of *zoe* vastly exceeds the human and its co-present biological, geological, and technological others. In that, *zoe* carries the potential to do harm—“*zoe* is always too much for the specific slab of enfleshed existence that constitutes single subjects” (p. 130)—and we can only try to catch a ride on the boundless cosmic energy of *zoe*. Death is the posthuman subject’s transition to becoming-corpse (Edwards, 2018), a vital corpse (Braidotti, 2013) replete with *zoe*. Remembering that the posthuman subject is not the unitary, fragmented subject of psychoanalysis (and much of curriculum theory for that matter), but rather an agentic assemblage, it becomes possible to imagine the ways our interconnections with other living matter might continue after death. In the specific material instance of the human corpse, life continues through the human microbiome and particularly gut bacteria, which proliferate after death and contribute to the body’s decomposition and, ultimately, the liquification of flesh, organs, and other soft tissues (DeBruyn & Hauther, 2017). While anthropocentric bias does not often allow for understanding human bodies in this

way, the function of bodily decomposition to the wider ecological world suggests that the remains of animals and insects serve as valuable sources of nutrients for plant life (Metcalf et al., 2016)—so too does the human corpse (Deloria, 1994). In this way, the relentlessness of *zoe* can harm through its demand for death, but again, this is not something that can be raged against, as death is written into the core of us as genetically mortal beings.

Ego haunts this conversation of death. Surely, I—the author, the teacher, the human—am more important than life of an eggplant! Braidotti (2013) responds through the Deleuzian distinction between personal death as an arresting of the ego (the end of “I”) and impersonal death as a temporal threshold to the capacity to become. The former is obviously a marker of anthropocentric visions of life—that “I” am somehow unique or special, and my death is significant. The latter, however, is a vision of death more in tune with posthumanism via the acknowledgement that our perceptual end is not an end at all, but rather a transition to different forms of life. Indeed, with playfulness, Braidotti (2013) suggests that life itself is a gift, not a right or something to which we are entitled: “Life is passing and we do not own it; *we just inhabit it*, not unlike a timeshare location” (p. 133, emphasis added). Posthumanism, then, acknowledges the impersonal nature of death not as a sacred call for the death of the ego as alleviation of suffering (see Kumar & Downey, 2018), but as a manifestation of the ontologically immanent relationship between the posthuman subject and vital matter more broadly (Braidotti, 2013). This does not mean that death is a return to the body’s natural state, but rather an overflowing of potential becoming:

Death is the becoming-imperceptible of the posthuman subject and as such it is part of the cycles of becoming, yet another form of interconnectedness, a vital relationship that links one with other, multiple forces. The impersonal is life and death as *bios/zoe* in us—the ultimate outside as the frontier of the incorporeal: becoming-imperceptible. (Braidotti, 2013, p. 137)

Posthumanism’s impersonal death is a becoming-imperceptible (Braidotti, 2006, 2013)—a material and affective blending of our human body into the humus of life (Haraway, 2016). All things will eventually give way to the power of *zoe*; all things will eventually become indistinguishable from *zoe*. We will eventually cross this threshold of becoming. The cosmic roar of life will eventually bring us into new being (and subsequently new becoming), and we are only along for the ride.

This inexhaustible quality of life, the inevitability of it overrunning our human form, and the continuation of life through our corpse offer an appreciation of the simultaneous significance and insignificance of our material remains. The corpse, historically speaking, has been—when deemed human—treated with the utmost respect and reverence (significance), despite being materially indistinct from that which we deem waste (insignificant). This is, I think, because of the liminal status of the corpse as having been human. Kristeva (1982) said the liminality of the corpse brings about discomfort and uncertainty around it, but a socio-historical reading such as Laqueur’s (2015), for example, supports the notion that the corpse’s liminality acts as a sort of corpse-power, compelling the living to attend to it with care and reverence. The corpse is treated as waste, but as a special waste that was once alive—once “ourselves”. When this reading is introduced to the logic of vital materialism, which decenters the human, as well as ontological pacifism (Braidotti, 2013), which encourages us to do no damage to any life (see also Butler, 2020; Justice, 2018), care and

reverence for the corpse is intuitively extended to waste more broadly, not just to that which is considered *human* remains.

Indeed, troubling the category of the human in this particular way opens up the possibility of pervasive grievability (Butler, 2020). Grievability is the capacity for a loss to be marked as a loss, and access to that grievability is socially unequal. Not all humans experience death in the same ways; some losses cannot be felt, and those losses are routinely from communities marginalized for their gender, sexuality, or race. Examples abound: unmarked graves, lost cemeteries, and desecrated bodies. To be ungrieved in the way described by Butler (2020) is a form of dehumanization, and it answers the question, “What happens when a corpse isn’t seen as human?” As above, however, when the category of the human is disrupted, grievability becomes pervasive. We can begin to mark losses not previously felt, human and otherwise.

Here my focus is on the otherwise. In this frame, the human corpse and our socio-historical attention to it offers a precise model of an environmental ethic—a model of attending to waste. Simply put, our historical attention to and attending of the “human” corpse shows us how we ought to engage with waste. In the subsequent section, I will elaborate this environmental ethic and the practice of attending to waste.

Attending to Waste and an Environmental Ethic

One definition of dirt is the idea that it is “matter out of place” (Douglas, 2013, p. 44; Liboiron, 2019, para. 1). In my reading, this notion opens up the possibility of a non-judgmental understanding of dirt. In the doxa of Western society, if something is dirty, it is read in a negative context—dirt ought to be cleaned or gotten rid of. But to me, the notion of dirt as matter out of place invites a consideration of dirt as simply, and non-judgmentally, something where it ought not to be. It would be all too easy to say that waste can also be thought of as matter out of place, that the corpse is a waste matter that we have an ethical duty to put in its place, and that we ought to follow the same logic with *all* our waste. But waste is not matter out of place—at least not uncomplicatedly so.

Liboiron (2019) identifies three different uses of the phrase “matter out of place” within the emerging literature of discard studies: uses related to the spatial, the material, and social power. A consideration of social power calls to mind the waste-making function of advanced capitalism (Bauman, 2007); “where there is a system of power, there are necessarily rejected elements (or dirt)” (Liboiron 2019, para. 13). The material usage is complicated by social power through society’s normalization and legalization of particular “dirty” practices: “Things that appear merely technical, procedural, or material may be either dirt or anti-dirt, depending on their relations to existing power structures” (Liboiron, 2019, para. 22). Pollution serves as a clear example of something that can be alternatively viewed as “dirty” or “clean” based on individual perspectives; ironically, the same could be said for the material facts of an environmental protest. Here, it is necessary to state that capitalism, colonialism, patriarchy, and other power structures have a consumptive and appropriative quality, where that which is originally intended to be subversive can be brought into the fold of the system under less threatening guises. The capitalist commodification of punk culture evident through the emergence of *Hot Topic* and related brands is one noted example (Hanks, 2018); the institutionalization and instrumentalization of anti-racist, Indigenous, and critical pedagogies is another (i.e., Tuck & Gaztambide-Fernández, 2013). In the context of the material usage of “matter out of place,” waste can be seen as an anti-dirt; a form of

dirt the system deems acceptable in order to keep itself in power. To quote Liboiron (2019) again: “environmental pollution and other forms of uneven material distribution are not an accidental by-product of capitalism, colonialism, and other power structures, but central to maintaining them as the systems that they are: the creators of anti-dirt” (para. 24). Likewise, the spatial use of “matter out of place” can also serve the interests of the systems that hold oppression in place. Litter, for example, seems by definition to be matter out of place, yet as Liboiron points out, litter is a spatial category for waste that gives it a place—a place that takes focus away from the issue of industrial production of non-biodegradable disposable goods. For Liboiron, waste is not matter out of place—at least not when it is given a place within systems of domination.

With this critique sustained, I think waste can still be seen as matter out of place, provided the systems of oppression that hold space for waste in order to sustain themselves are defamiliarized (Braidotti, 2013, 2019). By this I mean that if the spatial and material categories into which waste can be placed are made to feel odd by deconstructing the contexts and systems that legitimize them, all waste is out of place. This becomes particularly clear given a vital materialist understanding of matter—which Liboiron denounces in passing. Under vital materialism, all matter, including waste matter, is alive and, given the relationality and ontological pacifism forwarded by Braidotti (2013, 2019), we, the complex assemblage of vital matter that comprises the posthuman subject, have a relational obligation to the matter of our waste. Indeed, this relational ethic begs us not to see it as waste at all, but rather as matter out of place meant in my original, non-judgemental sense—as something that demands our attention, our understanding, and action on our part. We must carry our waste to its place—not in the neglectful doxa of Western society, where we flush or dump away our waste into what we experience phenomenologically as a sort of ecological netherworld (see also Žižek, 2006), but rather in a relationally accountable sense, where the life of our waste is respected and where we attend to its various stages of becoming. We should observe, be compelled by, and be affected by its compost-ing, to borrow Haraway’s (2016) terminology. We ought to be becoming-*with* waste rather than simply becoming it.

Furthermore, I would suggest that, just as the corpse has a sort of political and affective corpse-power that works on the human world, waste has a similar sort of power—waste-power—which has been diminished by way of its perceived inanimacy, just as the corpse-power of those (wrongfully) deemed inhuman is diminished. In my thinking, the current movement toward ontological pacifism (Braidotti, 2013; see also Butler, 2020; Justice, 2018) is a call to acknowledge waste-power—to attend to it and to be compelled by it. As above, waste-power can teach us all sorts of things about our unconscious habits and biases through a sort of defamiliarization of our discard practices. This attention to waste-power, then, offers a direction to environmental curricula—and an environmental direction to curricula as well. As above, a close socio-historical reading of our treatment of the corpse (e.g., Laqueur, 2015) can form a model of how we ought to engage with our waste—in blanket terms: with relationality, respect, and reverence.

I recognize that this is rather impractical—or at least profoundly uncomfortable—but it is significant precisely for that reason. This moment demands a project of curricular futurity in the face of imminent precarity. What is needed today is creative response-ability, dreaming, and the envisionment of new curricular possibilities. We need creative, speculative theorizing. The above discussion of attending to the corpse and attending to waste, then, is just that: a materialization through language of a dreamed curricular future—far beyond the present reality, but intimately responsive to it.

Having now gestured toward the environmental ethic emergent from posthuman attention to the corpse, as well as elaborated what I call waste-power and encouraged a deep attention to our discard practices, I now turn toward the curriculum of change. At this point, my discussion has been rather abstract and rooted in theory outside of curriculum. Toward engaging more directly in curriculum theory, I discuss two intra-related pedagogical ideas emergent from the preceding discussion: mourning and attending.

Mourning and Attending

When I began working with undergraduate students, I was often asked if attendance at a particular class or event was mandatory. What was not said in the question spoke louder than what was. With the experience of having taught a few courses, I began to address the issue of attendance before being asked. Attendance is mandatory, I told them. But more than that, attendance is a privilege, and it comes with responsibilities. Attendance does not mean showing up. That is just the first step. Attendance demands active attention—attention as an ongoing verb: attending. Attending, in my usage, implies an active engagement with the generative and transformative possibilities of a conversation, a moment, an event, a person, a relationship, or a phenomenon. Carl Leggo and Rita Irwin (2018), in one of the last pieces published before Carl's death, "Ways of Attending: Art and Poetry," demonstrate this notion of attending through ekphrastic conversation. Carl poetically attended to Rita's photography; Rita photographically attended to Carl's poetry. They were moved and changed by what they saw in the other, but this could only happen because of the trust, reciprocity, and openness of their relationship. I think of this as a relational aesthetic⁴—the beauty held in the space of relationship, beauty that can only exist within that intimacy—and this is what I offer to, and ask of, the students with whom I work.

Others engage this idea of attending from their own perspectives. Taylor and Pacini-Ketchabaw (2015) encourage educators to be attentive to various intra-actions and particularly those on a smaller scale; teachers ought not to attend solely to the very big interactions of humans, but also to the small, microbial ones. Attending asks for the *active* capacity and willingness to be changed by what we encounter; it is an openness to the intra-actions of life manifest both internally and externally. What I call "attending," Haraway (2012, 2016) might name our capacity to "stay" with those negative feelings of uncertainty and call it a form of response-ability—the capacity for care and response. Indeed, the notion of response-ability is helpful as well, in that it reminds educators to be open, vulnerable, and capable of responding to what is in front of us not with answers, but with curiosity and care.

This active attending is modeled in our socio-historical engagement with the corpse through burial practices. Think of the Western funeral as an example: The recently departed is venerated, elevated, and exposed through a viewing; the living are invited to speak of the departed and share memories; those who remain are expected to "say goodbye." These rituals have profound affective power for the living; they are transformative moments of reflection on what has been and what will be. At their best, funerals are charged moments of honest vulnerability—moments of extreme intra-activity (Barad, 2007). They change us. These are the moments that attending seeks—moments of openness to being affected and affecting others (Davies, 2014). Personal change is at the heart of curriculum theory (Pinar & Grumet, 2015), and many have acknowledged the potential violence associated with such change (e.g., Biesta, 2006; Boler, 1999; Christou &

Wearing, 2015; Nellis, 2018). Indeed, as Nellis (2018) notes, in change there is loss; loss demands mourning.

Robert Nellis (2009) states that “meaningful learning becomes a process of aporetic mourning” (p. 124). Nellis’ characterization of mourning as *aporia*, an unresolvable logical tension, moves mourning outside fixed temporality into the Derridean realm of existence and non-existence, where neither is true, both are true, and each is haunted by the other. Mourning is impossible “in the sense that we bear the ghosts of our mourning with us forever, just as our mournings bear us with them” (p. 130), but in as much as it is impossible, it is haunted by possibility, even inevitability: “Change calls for impossible mourning, and such mourning calls for patience” (p. 130). If attending asks us to open ourselves up to the possibilities of being changed, mourning reminds us that such changes are painful and that that to which we say goodbye in change never really leaves us. Like trauma, the specters of old selves recur in unpredictable moments, and Nellis advises that “one response is to learn to live with [our] ghosts” (p. 130). The language of haunting and the language of mourning have taken on negative connotations, but there is nothing inherently negative about either experience. These hauntings are not the ghost stories of youth, but the excitement of new possibilities and ways of being with/in the world. Our mournings are markers of the capacity for radical hope (Lear, 2006)—the capacity to find meaning after all that one knows as possible has ceased to exist. The new will always be haunted by the old, but this is no reason to become stuck in nostalgia. Mourning is moving forward but doing so in a way that honours that which we carry with us.

Attending, then, is an active seeking of change, and mourning is its haunting other that demands we say goodbye to the old when embracing the new.⁵ The two work together in moments of change, and I think we forget that. Learning is often seen as a positive. Whether through progressive education, developmentalism, or even emancipatory education, there is always an expectation that learning will yield desirable results. Nellis (2018), however, reminds us that “if I am to open my mind, heart, and arms to new possibilities, I am called upon to change, to say hello to new selves and goodbye to old. This is a loss, and loss calls for mourning” (p. 55). There can be no change without loss. There can be no learning without loss. Attending, through its closeness to mourning, sees this inevitability and seeks change anyway. Attending is a becoming-imperceptible and a seeking of authentic relationship with the non-human others co-present within the subject. It is stepping into the cosmic force of *zoe*, watching “I” melt away in favour of an embodied, embedded, and entangled “we”. It is terrifying, yet we must continue. In this way, it is something of an affirmative pedagogy. In order to capture that, I will conclude this paper by discussing Braidotti’s (2019) notion of affirmative ethics.

Affirmative Ethics

I began this article by highlighting the fragility of human life, and the necessity of death to the ecological world but also to the continuity of human life as we know it. I have also suggested that the force of *zoe* is exponentially greater than the human capacity to experience life and that we are only able to catch a brief ride on its inexhaustible flow (Braidotti, 2013). I have discussed the precarity of human existence in the current socio-environmental moment and the affective exhaustion caused by accelerating technological change. This all may paint a rather bleak picture of contemporary life and, by extension, may beg the haunting question of how we can continue to teach—how we can carry on—in these precarious times.

While we all have personal responses to the above and my own change frequently, the one I forward here is inspired by, but not necessarily beholden to, Braidotti's (2013, 2019) notion of affirmative ethics. Spinoza's formation of monism was initially a response to Cartesian duality and was later revived by poststructuralists as a way of escaping the binaries and dialectic of Hegel and Marx, whose work formed something of a doxa within the intellectual trends of the moment (Braidotti, 2013). Braidotti (2013, 2019), in my reading, picks up on this philosophical positioning of monism with regard to ethics and, from that position, escapes the duality between negativity and positivity by way of the affirmative.

I think negativity has its place as a part of the affirmative. If we attend actively to it, negativity drives an understanding of the state of things as they are, particularly social processes of marginalization. Negativity, however, need not dominate our perspective, even as critical theorists. That which is generally perceived as negative can be reframed in the affirmative as a part of the reality to which we must respond. We need not judge the negative, but rather acknowledge it as it is and "get on with it," where "it" is the work of building something better. There is a resilience or endurance embedded in this notion, but affirmative ethics is relational in nature and driven by creativity, collaboration, and humility as well. Where the phrase "ontological pacifism" used above may suggest a sort of neutrality and inaction, affirmative ethics is an active and collaborative envisioning of something beyond, but responsive to, what is; it is a form of response-ability marked by attending to and modulating negativity.

This notion of affirmative ethics is particularly clear in discussions of the conditions of advanced capitalism. While there are many sound critiques of capitalism, in the context of curriculum theory, neoliberal ideological intrusion into schooling is particularly problematic:

Neoliberalism is one of the most insidious incarnations of capitalist logic which informs social, economic, and educational policies in most parts of the contemporary world. With its emphasis on prescriptive and scripted curricula, standardized testing, and corporatization of public education, it has proven itself extremely deleterious to a rich and meaningful educational experience for students and their teachers. (Kumar, 2019, p. 235)

While Kumar and many others are completely dismissive of Western neoliberal capitalism with good reason, the affirmative, in my reading, asks us to be *both* highly critical of and willing to work with (to move beyond) the constraints of advanced capitalism; the affirmative aims to be both realistic and hopeful, critical *and* creative. Here, I read Braidotti's acknowledgement of the problems with the posthuman convergence alongside her seemingly relentless willingness to continue in the face of those problems, rather than becoming resigned to their conditions, as a definitive example of the affirmative ethics she envisions.

I suspect teachers will find this affirmative ethic inviting because it offers agency regarding social issues often seen as insurmountable. I also worry that in endorsing it widely, the profession will take it up as a blindness to critical issues endemic to the fabric of Western society and as a justification for continuing with the status quo. As noted earlier, social structures (e.g., capitalism, patriarchy, settler colonialism) can consume subversive ideologies, acts, or cultures making certain versions of them acceptable. This happens continuously in education, where theories meant to critique the system are taken up by it in ways that work only to sustain the system itself (see Tuck & Gaztambide-Fernández, 2013). In my view, this has been the trap into which both the social reconceptualization of curriculum theory and the related field of critical pedagogy have fallen and is perhaps a source of the theory fatigue manifest in Western society broadly (Braidotti, 2019) and

education specifically. To me, affirmative ethics does not mean we are not critical, nor that we continue with the status quo—indeed, the exact opposite is true. It means we understand and spend time with (attend to) the messy, sticky, complex problems of injustice, oppression, and inequality and remain willing to work with them. It is not a turning away from issues, but rather a turning toward them with a persistent willingness to envision something better.

Amid the changing world of the COVID-19 pandemic, where the fragility of human life is on full display, we are faced with the uncomfortably imminent possibility of death. The inequality endemic to Western society fueled by advanced capitalism as a global organizing structure comes into sharp relief in examining the possibility of death. Those deemed as waste, those considered or made superfluous to the mechanisms of global production, are by far the most likely to die (Bauman, 2007). We, as a collectivity of transversal subject assemblages (Braidotti, 2013), are called upon to respond through our teaching, our theorizing, and our living.

Our responses must be affirmative. We cannot afford to become immobilized by fear, exhaustion, anxiety, and anger. We cannot become so critical as to slip into cynical nihilism or apathy. The students with whom we work cannot afford it either. The affirmative asks us to “[stay] with the trouble” (Haraway, 2016, title) of our times and turn toward our collective social discomfort *together*, in solidarity: attending our differences and mourning each other lost. We are not here for a long time, but we are here—a life. We can acknowledge the reality of our death and work within that limit to envision new realities—new forms of living-with and becoming-with the life all around us.

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Notes

1. My usage of “we” is not meant to erase or minimize the multiple differences experienced by human beings. In this paper, “we” denotes variously comprised heterogeneous assemblages inclusive of the multiplicity of posthuman subjectivity. It aims toward “... a collective subject as the ‘we’ who are not one and the same, [but who] are in *this* posthuman predicament together” (Braidotti, 2022, p. 13).
2. Not all deep ecologists were so bold. Many simply respected nature on its own terms, not through the lens of the human. Furthermore, some of the more radical deep ecologists were blatantly racist in their assertions of who should die (Bookchin & Foreman, 1991).
3. The critique of new materialisms, that they offer a Western appropriation of Indigenous thought without paying due respect (Todd, 2016), has also been levied at curriculum theory (Tuck & Gaztambide-Fernández, 2013; Sabzalian, 2018). Despite the emphasis Braidotti (2022) gives to Indigenous feminisms in her recent work, this critique remains a sticking point for me in my alignment with both posthumanism and curriculum theory, with which I have attempted to wrestle in other writing (see Downey, 2022b).
4. My usage of this term is not directly related, but is in some ways responsive, to the term “relational aesthetics” put forward by French curator Nicholas Bourriaud in the 1990s. Bourriaud defines his use of the term as such: “A set of artistic practices which take as their theoretical and practical point of departure the whole of human relations and their social context, rather than an independent and private space” (Bourriaud, 2002, p. 113). My characterization above seems less rigid, to me.
5. For related discussions of mourning, see my other writing on the subject (Downey, 2020, 2022a).

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Schools of the Walking Dead

Schools, Societies, Smartness, and Educational Sanctuary

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THERE IS A POINT IN *THE WALKING DEAD*¹ when the characters, desperate and starving, weary from months of wandering and hiding, living almost moment to moment, find a more permanent respite in a seemingly abandoned prison. After the harsh life of “out there,” the characters can do something other than scavenge and survive. At least slightly, their torpor fades as they establish routines that exceed zombie hoards and persistent questions of existing in this new world. What, they consider, is to be done with this added time and space? Hoping to sustain, and perhaps begin to build a new life, they take on specific roles. One character creates a small farm in the prison courtyard. Others focus on securing the borders of the prison from outside attacks. Romances and relationships that had little room for expression outside the prison blossom with drama and curiosity. Among these developments, Carol, a supreme badass, uses the remnants of the prison library to start a kind of micro school.

The school aims to occupy the younger members of the group. The group collectively assumes Carol will focus on reading with the children. She is in fact forbidden from teaching otherwise. Educations essential to living outside the prison walls are banished in this new school, leaving the children with an education relatively impractical in this new world. And yet, Carol finds moments of rebellion. When other adults are not there to observe her, she teaches about knives, techniques for killing the undead, and general lessons on how to live in a world of roaming zombies. Arguing for her curriculum a bit later, Carol explains to an older child, hoping he will not tell his father, “I have to keep teaching those kids to survive” (Kang, n.p.). The other curriculum, the one everyone else assumes she will take up, one often familiar in contemporary worlds, appears useless and dated. Those wanting Carol to teach reading seem to cling to a society that will never return. At the same time, Carol’s bluntness in teaching about killing reveals a cruelty that feels incompatible with the hopes and aspirations entangled with children and schools. It appears brusquely utilitarian against the joys of reading. The only lesson that seems to interest Carol is how to stay alive, not individually, but collectively. Regardless of the “rightness” of one curriculum or another, a school built in a society dominated by zombies raises old questions of the

role of schools in society, what it means to be “smart,” and the function and position of schooling and educatedness in different societal configurations.

Undertaking these questions through a close examination of the world of *The Walking Dead*, this paper explores the relationship of what is taught and learned in schools to the structure of a society. Oft-cited notions of these relations help frame the broad conceptions of school as within, produced by, and producing society. The paper additionally looks at what knowledges and skills would be most useful or reflective of the society the survivors occupy in *The Walking Dead*. Looking at the “traditional” curriculum and pedagogy the survivors hope for, the paper interrogates both the consequences of this educational model in a zombie-filled world and the potential logics behind it. Beyond arguments of antiquated models of schooling, affective attachments lead to a school focused more on reading than zombie killing. Once the paper thoroughly depicts the school the survivors want as outmoded, useless, and lifeless, it shifts to examine the productive possibilities of maintaining a school that sits slightly outside society. Though conceptual in nature, the paper concludes by drawing on a brief ethnographic vignette, one that depicts school as a different kind of place. Ultimately, exploring education in *The Walking Dead* shows that schools can be about functioning within and constructing a society. At the same time, schools can be about sanctuary, playfulness, and experimentation without direct purpose.

Schools and Societies

Looking in many directions, schools and societies are intimately bound together. There is, at first, a persistent idea that schools can and should reflect society and make education directly relevant to life within that society. To offer a notable example, Durkheim (1905/2013) suggested that, in the 19th century, as education moved away from the abstract, a felt need emerged “to educate [children] in the school of reality” (p. 292). Education would no longer just be an academic exercise, but a formal project grounded in the ongoing needs of society. For Durkheim, education “is a function of the social organization of society” (Pickering, 2013, p. 99). Education as a practice and school as an institution thus serve to sustain society. From this conception, education is less about individuals acquiring things (such as skills or knowledge) and more about a social whole. Moreover, Durkheim intimately links education with society’s existence. “Education is, then,” Durkheim (1922/1956) wrote, “only the means by which society prepares within the children, the essential conditions of its very existence” (p. 71). School’s relevance to world beyond the school doors sustains society as a whole.

School not only reflects and sustains society; it also produces it. From perspectives of critical pedagogy or a Deweyan framework, schools can likewise serve aspirational ideas of what societies might yet become. School can be a critical place on which to build better societies. It reflects not what is but what can become. Or, school can be a site to actively maintain the social order. Beyond sustaining society as a whole, it is a place to ensure that everyone in the social order remains in place (Anyon, 1980; Bowles & Gintis, 2011). There are other conceptions as well, but reflecting, maintaining, and producing are the dominant understandings of the relationship between school and society. Throughout, education is a process, and school is a technology used to remind that society must be defended. If children’s “social beings” (to use Durkheim’s term) occupy a kind of society that emphasizes scavenging for food and zombie killing, then the conditions of society’s existence take on a new shape. It is debatable whether or not the world of *The Walking Dead* can be deemed “society.”² The point, though, is that Durkheim and others set

the stage to inextricably link the educational activities children encounter with the world they occupy.

Within societies, schools also frequently have a difficult time changing.³ According to Tyack and Cuban (2009), a persistent structuring—a grammar of schooling—governs and influences the changes possible for schools and school systems. It is not that schools cannot change; historical, cultural, and political factors converge and exert influence so that only incremental changes are possible. These changes happen slowly and are not necessarily based on society's needs. They are, instead, based on common sense assumptions of what has been entrenched as ideal knowledge, ingrained ideas about how real schools should look, and an understanding of “simply the way schools worked” (Tyack & Cuban, 2009, p. 107). Knowledge, skills, pedagogy, curriculum, classrooms, etc. may all change as society changes, but they change within a confining framework that may be out of step with changing societies. What Tyack and Cuban show is not a contestation of something like Durkheim's ideas but a depiction of the embedded nature of schooling, both within societies and schools' own material history.

This structuring conjures old and common arguments about schools' seeming out-of-touchness, where the grammar maintains a factory model of schooling that does not reflect the current or future needs of society. Even though society may have emerging needs for different skills or knowledge, both the commonsense notion of what “real” school looks like (“this is how we did it when I was in school...”) and the material constraints of school buildings, classrooms, desks, and so on reinforce the grammar of schooling. The seeming disjuncture between listening to Carol do a read aloud and educating kids about zombie killing methods is not some unique phenomenon born of an apocalypse. Referring to the discussion of schools being outdated, Mehta (2013) finds that they take shape around a bureaucratic form. They emphasize a factory-like model, not only for students but a general “logic of managerial control” (p. 9). Consequently, students are prepared for an industrial society that no longer exists. As societies enter the Information Age, the thinking goes, schools often still prepare children using the logic of the Industrial Revolution. As dramatic shifts occur, there are dire consequences such as a society having an unprepared workforce (Trilling & Fadel, 2009). Even as some aspects of society change, the grammar of schooling keeps these structures intact. Extending this argument, Bellanca (2012) points out that, by the 21st century, “U.S. schools had become as obsolete as Henry Ford's 19th century assembly line. Unlike manufacturers who had modernized their production with the introduction of new technologies,” schools now “appeared frozen in time with outdated curricula, worn-out instruction, and inadequate tools for assessing the quality of what teachers produced” (p. 1). From this perspective, schools maintain society but also serve to prevent it from solving its problems. These discussions also say little about the ways in which schools can stay the same as a way of maintaining racial, linguistic, class, and gender hierarchies within the social order.⁴

Of course, the stuff of the grammar of schooling—classrooms, Carnegie Units, and even policy elites like Michael Bloomberg—has been destroyed, with policy elites likely turned into roaming zombies. Most factors confining a school have disappeared. Individual feelings of racism or sexism remain in this new fictional world, but racist and patriarchal structures are gone. One might think the survivors are finally free to make of school anything they want. A school of desire and dreams and new futures. The relationship between schools and society has here been knocked from its orbit. Free to make school within a potential new world, why then does the school of *The Walking Dead* take the form that it does? At least, why are the old ways not abandoned? Why is school so familiar and so out of touch with the needs and rhythms of the world in which these children live? Are there other forces keeping the grammar intact?

Rebuilding Ashes

This schooling moment in *The Walking Dead* extends Tyack and Cuban's (2009) notions of the grammar of school's hegemony, offering a reason beyond "laws, institutional customs, and cultural beliefs" used to explain why the grammar of schooling persists (p. 107). The request from other characters to have Carol sit in the library and read books with the kids evokes some semblance of schooling before the zombie apocalypse. From a first reading, it appears as though the grammar is lodged in memories as "cultural beliefs" play out in the prison. Though they find books in the library, the majority of schooling's materials are no more. What seems to remain is a culturally produced memory of what schools should look like and what they should do. The characters are only a year or two removed from society's clutches. There is still likely a very real image of what counts as desirable knowledge and how schools should look. Common sense of the way things were clings to the survivors' brains.

Yet, I argue that there is something else at work here. Such understandings of "real school" certainly entangle with reveries of the characters' previous lives. Beyond their memories of school structures, the adults and some of the students carry affective attachments to school as part of the safety and stability of the old world. In an earlier moment, the group's leader, Rick, shouts at the survivors,

Do you think you're ever going to watch television again? ... Buy groceries? *Drop your kids off at school?! ... It will never happen!! You can come to grips with the sad fact—or you can sit around wishing for it to happen!* (Kirkman, 2005a, n.p., emphasis added)

And yet, even if it was a site of dated learning or racial segregation, the feeling of school evokes what came before. Before family members were eaten alive, before hunger crawled into every muscle, and before society's destruction came school as a site of routine and certainty. The characters regularly refer to the prison in this way, with the school emerging as the thing they make within these borders. Where fear permeates every crevice of this world, safety and comfort circulate through the school in *The Walking Dead*. Here, there is a feeling that maybe kids can relax and read, something Carl and the other children may have done only a short time before. The school allows for a kind of cruel optimism (Berlant, 2011), a hope that school will enable a return to an impenetrable past. In an inversion of Ralph Chaplin's (1915) revolutionary lyrics, the characters aim to "bring to birth an old world from the ashes of the new." In this way, the grammar persists not only from material conditions but also from affective attachments.

I return to and complexify the role of safety and care in schools below, but for now these affective attachments also explain why the characters might build up school the way it used to be, even when seemingly freed to do otherwise, even when doing so creates danger or, to use Berlant's (2011) phrasing, an obstacle to their own flourishing. Moreover, it explains why they rebuild old structures of smartness even when society demands something else. These affects disrupt the possibility of a future yet to come in favor of rebuilding a school that values the same kind of intelligence and takes on the same structures that reflect and have produced so many exclusions and inequities. After all, was school ever safe? If so, for whom, where, and when?

At the same time, affect is not merely limiting, keeping alive a dead grammar. Berlant (2012) suggests that there are possibilities born of such massive shifts, where "the situation can become the kind of event whose enigmatic shape repels being governed by the foreclosure of what has happened before" (p. 72). For all the devastation, there is also possibility here. Affect can

sustain the grammar of school, but it is also a wily thing. In building a school aiming for a return to the past, the characters open routes for a new sensation, one likely absent from their survivalist existence before the prison—hope. Anderson (2006) reminds that “the taking place of hope enacts the future as open to difference, but also reminds us that the here and now is ‘uncentered, dispersed, plural, and partial’ (Gibson-Graham, 1996, p. 259)” (p. 734). Lori, Rick’s wife says, “I know it seems weird now, but we don’t have to follow the old rules, we can make new ones” (Kirkman, 2005b, n.p.). Even as school appears in the same old way, there is possibility here for both the school and the survivors to become something else.

Schools as the Walking Dead

Before exploring how schooling might look otherwise, I now articulate potential outcomes of this school’s structure. Rather than oversimplify the situation, I read the scenes through Carol’s perspective, focusing on what school becomes when it carries little relevance to the society in which it exists. That is, I consider the new world to which Lori refers through the “practical” and “realist” logics undergirding the old world. In her first teaching scene, Carol waits until the other adult in the library leaves. As soon as he does, she stops mid-sentence. A girl knowingly asks if she should stand guard and Carol nods. Carol then takes out a tray of knives and tells the children that today they will learn about knives, “how to use them, how to be safe with them, and how they could save your life.” The oldest boy in the room shifts in his seat and asks “ma’am, may I be dismissed?” Carol refuses, saying “sometimes you’ll have to fight through it ... what if you’re out there ... you’re just going to give up because you’re feeling bad?” (Gimple, n.p.). She suggests that, if he does not learn these skills, he is doomed in the inevitable moments of terror and danger he will encounter beyond the prison walls. In this scene, the external architecture and rhythms of schooling persist. Children gather in a circle and sit at the feet of a knowledgeable person. They spend allotted time learning about a thing. Pedagogy is not at issue for Carol. Rather, it is a curricular question of what is in and what is out. Which knowledge counts here? How might it be used within/against the world? What are the consequences of learning that is untethered from the world in which they live?

This curriculum and pedagogy, when constructed and deployed in a society filled with vicious gangs, zombies, and extremely limited resources, leaves the children unprepared for what society demands. Their knowledge and skills are wildly out of touch with their everyday lives. Without a younger generation prepared to fortify barriers, scavenge for food, and so on, this school is not executing its duty to society (both present and future). With only limited time for schooling, in schools of the walking dead, reading becomes a treacherous practice.

Of course, even from this perspective, reading may prove useful in moments. Reading signs allows survivors to find or avoid other groups. Words scrawled on walls warn of zombies lurking inside buildings. Reading creates the possibility of silence in precarious moments and allows those who do not hear to communicate in a different way. All of these possibilities reveal utilitarian purposes for reading. Yet, the survivors routinely suggest more pressing needs for their world. And, rather than learning to scavenge like Glen or kill with Rick’s tenacity, the children are held to the library. They find themselves freed from the existential pressures the other characters face but also unprepared for threats that will, inevitably, arrive. Conjuring a common framing, reading can be every bit as oppressive as it can be liberating.

In choosing reading, particularly in its competitive position against teaching something else during that time, the survivors choose to value the same old knowledge and keep intact a stable understanding of one kind of smartness. They prop up an archaic order of things at the expense of the present society. In the world of *The Walking Dead*, reading is a skill, and literature in general is a body of knowledge out of touch with the world. From Carol's perspective, beneath the veneer of learning and participating in a classroom community, the school's core, where education reflects or propels society, rots away. Education sits as a hollow shell, serving no real discernable purpose for the children. It exists and operates, but it is not alive. The school the survivors make is, functionally speaking, a zombie school.

Schools in *The Walking Dead*

If Carol found herself with complete autonomy as a teacher, what might her school look like? Based on her scenes in the library, this school's makings and logics would not become some kind of Freirean culture circle but a school similar to the majority of 21st century U.S. schools. Carol accepts the general structure of schooling, including maintaining the role of the teacher, dividing the day into discrete subjects, and much else. The school that the survivors could build (and the hope of schools across the U.S. today) would aim to develop an education most useful out in the world. In the postapocalyptic world, therefore, the main shift would be on the content, creating classes that focus on knowledge and skills valuable in this new world. Such a school would reveal much about the utilitarian relationship between schools and societies. Importantly, this kind of school illustrates the contingency of how smartness is made and understood in different worlds. The things valued in school, particularly smartness, are, thus, revealed not as universal entities but as deeply entangled with time and place.⁵ At the same time, such a school keeps intact a stable view of smartness. It may show how perceptions of smartness stick to times and places, but this is simply an inversion. Standardized test scores are less relevant than Rick's skill with a knife, Andrea's accuracy with a gun, or Glenn's sneaking in and out of places undetected. Yet, a clear, hierarchical understanding of what it means to be a smart person in the world remains.

Additionally, this kind of school offers a most dramatic example of a utilitarian role for schools. This kind of school reveals itself as nothing other than a reflection of the world the survivors occupy. It is a school built not on foundations of a control or disciplinary society (to borrow from Deleuze or Foucault). It is not a school striving toward a liberatory society (in the vein of critical pedagogy). The school in *The Walking Dead* is a school for a survival society. Speculating the possibility of Carol's school, I now offer an incomplete sketch of class subjects, following recognizable schooling elements of sample learning objectives, assessments, classroom materials, and identifiable skills and knowledge.

Stealth Killing Class

Sample learning objective: Students will be able to apply background knowledge of moving silently to effectively kill zombies using given tools and without attracting attention.

Sample learning activities: Lecture on how to use knives, classroom activity of hide and seek with noisy objects scattered throughout the library, small group scavenger hunt of finding different ways to cloak yourself from zombies (e.g., covering yourself in zombie guts)

Sample classroom materials: Knives, hammers, wrenches, sneakers

Sample assessment: Experiential learning assessment with students tasked with killing a given number of zombies beyond the prison walls without attracting attention. Killing technique, level of noise, and making it out safe are all elements that will be assessed.

Roaming and Navigation Class

Sample learning objective: Students will be able to recognize geographic landmarks, patterns of zombie movement, and other factors to safely navigate from a food run to the prison.

Sample learning activities: Guest lectures on how to blend in with zombies without attracting attention, stations or museum walk studying different geographical features, memorizing activity of stating directions and students repeating those directions (“to get to the gas station with the canned goods, walk out of the prison until you see a barn. At the barn, go right. Walk until you see the dirt road. Avoid the zombie hoard by sneaking through the grass”)

Sample classroom materials: Maps, flashlights, backpacks, weapons

Sample assessment: A scenario-based oral examination. Students will be given specific situations and have to explain how they would find their way through the world. For instance: “You’re on a food run and suddenly see a group of zombies. It’s raining, which means zombie guts will wash off and you’ll be detectable. You don’t have a knife. What do you do and why?”

Bricolage Class

Sample learning objective: Working in groups of 2-3, students will be able to create a perimeter defense using materials found in the library.

Sample learning activities: Labs exploring how different objectives work together, scientific demonstrations on how to combine materials to make explosives, whole group brainstorm on as many different uses for an object as they can find (following Robinson’s (2010) challenge for divergent thinking by finding different uses for a paper clip)

Sample classroom materials: All kinds of objectives found in the prison and beyond the prison walls, including bottles, books, tubes, gas canisters, rope

Sample assessment: Students are given a box or bag of materials and told to combine those available materials into something that will allow them to survive 5-7 different scenarios (e.g., create something that silences guns, something that allows you to climb a tree to safety, something that protects your body from bites)

“Laffing” In Schools of The Walking Dead

These classes act as examples within an exercise about a synonymous relationship between school and society, but they proceed from the perspective of those designing the school. One should not assume, however, that students are simply passive in school. Would students accept this strict utilitarian approach? Has a curriculum ever moved from thought to planning to teaching to learning completely intact? In *Learning to Labor*, for instance, Willis (1981) shows subversive responses to schooling structures, a counterspace, where students (lads) can have a “laff.” It is

precisely subversion, changing the game, that resists being the walking dead. Having a laff “is also used in many other contexts: to defeat boredom and fear, to overcome hardship and problems—as a way out of almost anything. In many respects the ‘laff’ is the privileged instrument of the informal” (p. 29). Students may welcome a utilitarian curriculum that helps them survive. It might prove useful in working toward establishing a society within the prison walls. But, the children may also want to do more than just survive. They may want to play and fool around and not listen to a thing Carol has to say. Rather than suggest how Carol can reinforce her curriculum, once again “to teach these kids to survive,” it is here that I want to turn against the survivors’ affective urges and Carol’s utilitarian curriculum to suggest that school can be something else entirely.

Beyond Progress and Survival

From the descriptions above, it may appear that school and society are inextricably entangled. It is also possible for school to stand intentionally and productively outside of society. In their book, *In Defence of the School*, Masschelein and Simons (2013) argue that school can be reinvented to “provide ‘free time’ and to gather young people around a common thing” (p. 10). These common things serve to present school as open, undetermined in space and time. School here sits both spatially and intellectually outside of society. That is not to say that such a school would be divorced from the world beyond its walls but that schools can become laboratories or recreational spaces produced within the world to operate with some distance from the everyday rhythms and demands of the world.

Masschelein and Simons ground their argument in the historical example of *scholè*, roughly translating to “free time,” where wealthy men in Greek city-states studied and practiced in their leisure time. The authors reframe the use of this free time, seeing it as a “democratization, equalization and the generating of an egalitarian time where anyone, without any particular qualification, can both join and make the school” (p. 28). Sitting askew from society, school becomes not a mechanism to strive toward equality; it can become a site for the practice of equality in itself. That can still mean that people develop and present different skills in different areas. In a school of this kind in *The Walking Dead*, though, such skills would not place some survivors above others. Rather than replacing one type of smartness with another and keeping the same hierarchical structure, in such a school everyone would study together, teach each other, and share in the collective work of education.

Such theories further suggest that school does not have to be exclusively a site of preparation for the young to participate in society. School need not be an institution to effectively maintain society. It need not even be a place to produce different future societies. For them, the school can be a place that is specifically *unproductive*. They do not use unproductive in terms of suggesting time off or that the survivors can take a quick break to recuperate. Such conceptions serve the need to specifically reproduce basic aspects of a society (say, capitalist production or surviving in a zombie world sustained through bouts of rest). Instead, unproductivity here suggests that outcomes are not prefigured assumptions. The unproductiveness of the school space offers children an opportunity be removed from the unequal order of things (Masschelein & Simons, 2013, p. 29) and take up education work without predetermined ends. Where society cuts up groups and individuals, placing them into hierarchical systems, the school can take children from this structure. They suggest that the school actually exists in a kind of suspension, a “temporary interruption of both time and place” (p. 36) where “the requirements, tasks, and roles that govern

specific places and spaces such as the family, the workplace, the sports club, the pub and the hospital no longer apply” (p. 33). Masschelein and Simons offer the example of a car engine. Outside of the school, an engine is something to properly fix. It must function (especially if it is used to escape zombies). Within the school, however, the engine becomes something to play with and explore. The engine appears closer to a piece in a museum than an auto shop. Rather than a tool, it becomes an object of study and play. Again, the school is here not within society but standing slightly outside, in another dimension. It becomes unproductive and inoperable in its demand for outcomes, but it does produce something, an unknown and indeterminate something else.

If school is a place of suspension, Masschelein and Simons suggest that “school gives people a chance (temporarily, for a short while) . . . to become a student just like everyone else” (p. 32). At a pivotal moment in the prison, Rick turns to the survivors, exasperated, and tells them, “*We are the walking dead*” (Kirkman, 2005a, n.p.). When the survivors have been so thoroughly defined by the exhaustion of surviving, when their appearances, movements, and minds have become deeply zombified, the school allows them to become something else, to be other people. They are not survivors or the walking dead—but students—not defined by utilitarian skills or named through relentless trauma but understood as an emergent something else. They must still heed Carol’s plea to learn how to survive. Yet, that is not all that education must mean for the students. In this way, schools can be places that give life. Without outcomes, suspended from society, school allows for an imagination that creeps toward the unknown.

Shifting from this largely conceptual paper, I offer an ethnographic vignette as another possibility for school coming untethered from society. In this project, I studied with recently immigrated youth in their everyday lives (Corson, 2020). Seeing certain knowledges made precarious in school and learning about ways of being that did not fit into the grammar of schooling, the project largely discards school in favor of other kinds of education. Yet, in a conversation with one participant, Matias (a pseudonym) explains that school has come to be a place where he feels safe, removed from the violence and danger of everyday life. The project pushes against labels like “at-risk” and framings of places like participants’ neighborhoods as dangerous or devoid of educational possibility. Matias regularly undertakes rigorous and productive educational practices in many places in his everyday life. At the same time, he describes situations of physical and structural danger. Racist subway riders, ICE agents, or friends he wants to avoid creep into everyday life. With these risks, the school can become a unique place, one of refuge. Within the school, Matias is able to be and to think otherwise. There are moments where school tries to define him through deficits of “risk” or “language learner,” but he also finds moments to process, to think, and to become something else. When school stands slightly outside of society, just as it does in the survivors’ prison, school can become a place of sanctuary. The demands and dangers of the outside world are less present. Rules, categories, and hierarchies recede in favor of collective play. Actions and ideas that would have dire consequences elsewhere transform into generative routes of study.

Returning to the affects circulating through schools, Fine (2018) asks for a reading of possibility, “the ‘warm embrace’ of schools designed as sanctuaries” (p. 155). Held against the terror deployed against immigrant communities, the school as sanctuary welcomes feelings of hope. Likewise, in a school within the world of *The Walking Dead*, hope might not generate an affective attachment to the old world but a hope for building something else—a school that could be a separate space to think otherwise and also build the skills needed to survive. These ideas veer from school acting as a site of progress on which to build a society toward something more radical.

The possibility of school is something unknown and unknowable, something emerging from the separate time and space to think and be otherwise.

There is also an unresolved tension here. Schools as sanctuaries of free time offer respite from dangerous and violent worlds. Whether *The Walking Dead's* threats from other survivors and zombies or the everyday realities of structural violence and persistent threats of school shootings, society regularly comes to crash down the school doors. Like the prison fences that the survivors construct and bolster, it may seem like schools as sanctuary spaces require strong borders and more direct protection from the outside world. Yet, I argue that school can be both a sanctuary space and a place that works to abolish borders. Schools should not fortify their walls like a prison, cast out those seen as not belonging. School, in its truest sense, can become a place of care—a place to welcome anyone who shows up at its doors. Safety and sanctuary come not from stronger borders but from the world outside—a community, a people—collectively building this place apart.

Conclusion: What Schools Might Become

In moving toward Fine's (2018) or Masschelein and Simon's (2013) possibility for school, linkages between school and society cannot be forgotten. Possibilities emerge within and through school, but even as a place of refuge, schools might have porous borders. The world of "out there" can be explored, processed, and interrogated in schools. In the world of "out there," people can also think and be otherwise. Survivors might still fabulate new worlds in the middle of killing zombies. School can be special—a place of free time and becoming—but it need not be unique, closed off, or exclusive. Thinking and being otherwise do not need to stand in conflict with the practical lessons that help produce and sustain society. The school can be a site of preparation, reflecting and grounded in society's demands. It can also be outdated and purposeless, not in terms of irrelevance to students' lives but in terms of standing askew to societal structures and demands. Doing so allows for a playfulness and mystery to creep into educational work.

Exploring how school appears in *The Walking Dead* also allows for a challenge to commonly deployed notions of smartness. Rather than universally defined intelligence (e.g., IQ tests), a school in *The Walking Dead* reveals smartness as contextual. The suspended nature of school, meanwhile, challenges any hierarchy of intelligence, revealing it as relational and emergent. It is not only that smartness depends on time and place, but that perhaps metrics like smartness or academic success should not be the dominant frameworks in schools. When school is a refuge, this free time welcomes something like failure (not in the Silicon Valley sense but in the sense in which Halberstam [2011] uses it) and risk.

A close reading of how school is presented in the comic and show opens routes of inquiry into schools all around, seeing zombie schools in present worlds, exploring the uses and risks of societally-bound utilitarian educations, and the possibilities of making schools as separate things. Through making a school that is at once practical and impractical, both within and outside the world, a new understanding of school emerges. Beyond reflecting, maintaining, or producing societies, the purpose is that we do not know the purpose of education. Schools might serve countless other purposes, many of them unknowable or yet to emerge. In that way, following Spinoza and Deleuze (Deleuze, 1990), we do not yet know what school will become.

Notes

1. Throughout the paper, I refer to both the comic and television show. Though the two share much in theme and plot, I cite the individual authors, R. Kirkman for the comic and S. M. Gimple and A. Kang for the show, when making specific references.
2. Given this tension, I use “society” and “world” somewhat interchangeably throughout.
3. Historical examples both reinforce the relationship between schools and society and show how changes in the broader social structure allow for more radical changes in the making and doing of schooling (e.g., Carnoy’s [2007] examination of Cuba’s post-revolution education system).
4. For a complex interrogation of race and gender in *The Walking Dead*, see Erwin and Keetley (2018).
5. This rendering relates to but is a more radical examination of the contingency of smartness than something like the common focus on 21st century skills (e.g., Gardner, 2008).

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Alan Collins's *What's Worth Teaching*

A Book Review

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POLITICS ASIDE, THE ANALYTICS ARE CLEAR; the United States has shifted to a service economy (Wolman et al., 2015). Combined with an advancing new wave of automation, the potential to further transform our economy is exponential. Survival skills for this new paradigm must be cultivated. Yet, education has moved to a standardized approach that disconnects skills and thinking and eliminates integration across subjects. Put simply, schools are not preparing students for a shifting reality (Apple, 2016).

These facts are not lost on Allan Collins (2017), who examines our current model of schooling in his important book, *What's Worth Teaching? Rethinking Curriculum in the Age of Technology*. In what might be coined a post-modern reconceptualization of education and curriculum, Collins, Professor Emeritus of Learning Sciences at Northwestern University, resoundingly voices that we clearly are not preparing students for success in the 21st century. Moving beyond critique, Collins also describes how educators and policy makers might restructure learning in a pragmatic fashion that develops the required dispositions for success in the age of technology.

To begin this review, I outline Collin's analysis. Next, I draw attention to some of his most compelling proposals for bringing about change in education. I conclude by considering and expanding upon what I believe are some of the limitations of Collin's otherwise thoughtful book.

Collins states what is painfully obvious to most educators, parents, and students, "the school curriculum is filled with stuff that most people will never use, and hence will forget as soon as they leave school or move to the next grade" (p. 1). Topics are broken down into small units; students are not asked to apply what they learn in the classroom to novel situations, to reflect, to enjoy the process, or to make meaningful connections to their interests or abilities. Teaching to the test has unfortunately shifted and narrowed education away from valuable and meaningful goals, such as taking responsibility for completing a substantial piece of work, solving complex problems, becoming a persuasive speaker, or working collegially. This should serve as a resounding call for educators. Are we teaching what should be taught? Are we using our students' time wisely? Are we helping children reach their full potential? With standardization and high-stakes testing as the norm in many educational settings, Collins indicates we are not. Though he foregoes a thorough discussion of how or why education has been directed towards

standardization, he implies that, in order to understand the necessity of change, we must examine the changing complexity of today's world, the current push to move education away from the humanities, and the limitations of current standardized curriculum.

Within this context, he establishes digital age guiding principles for school curriculum and seeks to broaden a conversation that, as Foreword author John Seely Brown suggests, revisits Dewey's pragmatism. Collins manages to do this in a fashion that, unlike Dewey, emphasizes not only current experiences but also preparation for the future. Collins writes, "the trick is to design school curriculum in such a way that the important things to learn are embedded in topics that students care about" (p. xv).

Echoing Carol Dweck (2016), Collins maintains that schools must explicitly guide students to develop the habits of a growth-mindset. Collins encourages helping students develop strategy and self-regulation skills such as planning, monitoring, reflecting, developing self-control, and being adaptive—all skills teachers seek in their students but rarely are able to teach explicitly. What many of us once viewed as the future is now. Routine jobs are becoming increasingly obsolete, but fortunately, schools can prepare students for the workplace of today and even the unknowns of tomorrow by helping them complete meaningful tasks aimed at developing productive and creative thinking. This type of preparation extends beyond traditional workplaces and recognizes change as a constant. One of the many changes technology is ushering in is a generation of on-demand workers operating in "gig economy." This has created a 21st century paradox; the technology revolution is reversing some of the interdependence that the industrial revolution created.

Collins's blend of a societal and individual needs approach addresses this type of change. By organizing his book around what he terms trends, Collins prepares a pathway for educators as they plan and implement curriculum for the technology age. Literacy, math, science, social sciences, and arts remain central to the school curriculum, but the specific content taught within those realms shifts. Too often new ideas only emerge post-curricular, outside of the school frame (Doll, 2012). For example, traditional reading and writing skills are becoming increasingly blended with personal communication. Technology provides not only the transition between basic and applied literacy but also transcends the barrier of motivation; the internet provides today's students with not only the forum for communication but also a meaningful purpose for much of their communication. And while schools have argued that these types of literacies are incompatible, technology advances have allowed students and millennials, who have already entered the workforce, to create their own literacy-multimedia documents, graphics, blogs, videos, and web research. Educators must expand our own views and methodologies or risk not only becoming illiterate within the realm of the new literacy but also forfeiting the opportunity to guide students as they develop new literacy skills. They will do so with or without us. Within this context, Collins suggests we focus on helping students (a) engage in productive dialogue, (b) develop skills of persuasion, and (c) negotiate fairly.

These focus points remain constant as Collins directs the conversation to the traditional social science curriculum. Once again Collins merges the need for responsible members of society with the needs of individuals, global awareness with the local. Students should study what is relevant to their lives and what is helpful as they make life choices and explore societal problems. Central to the curriculum are problem-based learning opportunities that teach collaboration, design, communication, and investigation skills while exploring topics such as population growth, critical resources, social justice, pollution, species extinction, or globalization (Gordon, 2010). We must avoid creating a generation that is disenfranchised from the society in which we live.

Therefore, Collins does not indicate technology age curriculum be blindly steered toward a STEM focus that largely ignores the humanities. He promotes moving the traditional mathematics and science curricula past an emphasis on executing algorithms to an emphasis on using technology to define and solve real-world problems. While this emphasis on real-world problem-solving is not new, just as the call for integration of mathematics and science is not novel, Collins suggests that students' education in both fields should consist of mastering big ideas. He identifies variables, functions, graphs, statistics, and correlation as foundational ideas to build student's mathematical and scientific thinking. This shift requires students to use technology to discover, to investigate, to design and carry out investigations. It requires students to also break out of traditional school models and to question traditional methodologies, to compare the views of others, and perhaps forge new broader frameworks for understanding and researching ideas. In what can be viewed as an additional move away from a measured curriculum, a move away from a strictly Newtonian paradigm, long gone are the requirements for everyone to memorize the periodic table, to memorize the distinction between mitosis and meiosis, or to endlessly plug values into $Fg=mg$. Yes, those students who wish to be forensic scientists must learn mole conversions, future doctors must learn the Krebs cycle, and future avionic engineers must learn Boyle's law, but students have a voice in what they want to learn.

Collins does not stop with curricular ideas. Unlike many in the field of curriculum studies, Collins presents a model for putting dialogue into practice, and his vision is not one of utopia. Previous successes with similar models such as Central Park East Secondary School in Harlem tell us that the vision is possible; yes, paradigms must shift, but the vision can be realized. Collins terms his vision "passion schools," where together students and parents choose from a variety of child-friendly themed curricula. "The goal of the passion school is to develop a community of learners who are working together to address meaningful questions, sharing knowledge and taking responsibility for completing the challenges they face" (p.114). Passion leads to action, and students complete a variety of projects aimed at helping students learn the kinds of skills, knowledge, and dispositions Collins describes. Motivation and a growth-mindset are a foundational component of passion schools.

Although I agree with this model and certainly respect what Collins has done to promote a paradigm shift, I am disappointed that, in a quick concluding paragraph, Collins puts forth the idea that charter schools should be the primary vehicle for carrying out his vision. Given the mixed portrait of charter schools, it is difficult to generalize any discussion of them, and this is particularly true in measuring the success of charter schools.

Regardless of the vehicle, the type of transformation Collins suggests must be made with integrity and credibility. While students' experiences should be flexible, they must be guided. One obvious and immediate challenge is how educators could keep track of what goals students have mastered and have yet to master. Collins does not focus on the specific requirements that students must master but does point to alternative schools created by Google executives in California as an example of schools using technology to assist with the monitoring of this information.

Additionally, Collins does not discuss strategies for ensuring that a flexible curriculum will not inadvertently limit student opportunities, inadvertently halt their journeys of destiny. The middle school student who shies away from writing assignments and gravitates toward other types of activities may actually have an untapped talent. How does the educator interpret and guide the student's hesitation? The high school student who struggles with physics may see beyond the limits of Newton or may simply have little aptitude or interest in Physics. How does the educator know?

Collin's vision places great responsibility on teachers who will mentor, guide, and challenge students as they construct thinking skills by planning, monitoring, and reflecting on their work—their experience. Teaching is an art form, and those within the profession who have managed to do so despite the limitations of the current era of teacher-proof curriculum know this. But to meet Collin's vision, educators must also be 21st century thinkers. This will be particularly challenging as one of the harmful outcomes of standardized curriculums and No Child Left Behind has been the de-skilling of teachers (Marsh & Willis, 1995).

Questions for Collins must also include the following: How are higher education institutions going to respond to his proposed changes in K-12 curriculum? Have we designed elementary and secondary education as “feeder schools” for higher education? This a disservice to the student who is not college-bound, as well as to the college-bound student.

These comments and questions are not meant to distract us from an appreciation of the key idea Collins conveys in *What's Worth Teaching? Rethinking Curriculum in the Age of Technology*; but I urge the reader to move past what Collins refers to as the start of a conversation. Yes, with the momentum and implications of technology, Collins does put a current twist on the question of how to best prepare students, but this conversation was started in earnest at least a century ago by Dewey (1923) who wrote, “the educator is especially exposed to the temptation to conceive his task in terms of the appropriate and reproduce the subject matter in set statements” (p. 207). Collins has made Dewey's work even more relevant in the technology age. Our challenge as educators is to create an educational system that simultaneously helps students see success in the modern workplace and helps them navigate an increasingly complex world.

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