

The Precarious Self: Schools and the Challenge of Climate Change

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Educational discourse is supposed to be about the ways we can best prepare the young for their future but, while climate scientists and ecologists have long warned us about the precarious future we face, environmental issues have remained (at best) at the margins of schooling in the United States.¹ Some states have nominally made sustainability a goal of schooling, but those demands seem totally inadequate given the lack of any serious engagement throughout the curriculum.² With the failures in Kyoto and Copenhagen and with climate change already occurring,³ it is far from clear what sustainability might mean in a world so much in flux and with such momentum behind its most dangerous practices. But these factors only increase the importance of this issue in schooling: given the unanimity of scientists about the changing climate (if not quite about its causes), how might students be prepared for the environmental futures they face?

As Claudia Ruitenberg has noted, efforts to teach sustainability often fall back on nostalgic notions of place and locality.⁴ Behind such notions is a view of nature as a balanced entity that humans have disturbed and a past where we were less alienated from the environment. Nonetheless, Slavoj Žizek claims that this perception stems from a misreading of nature, given the evolutionary and paleontological record. What these records show is the past as a series of catastrophes (such as those that created oil) and this view is more in keeping with what we are starting to experience:

“[N]ature” *qua* the domain of balanced reproduction, of organic deployment into which humanity intervenes with its hubris, brutally derailing its circular motion, is man’s fantasy; nature is already in itself “second nature;” its balance is always secondary, an attempt to negotiate a “habit” that would restore some order after catastrophic interruptions.⁵

Note that this rejection of nature as a stable backdrop should not be seen as a means of doubting the anthropogenesis of the climate change we are experiencing. It is, in contrast, a means of underlining that fact, and of emphasizing the precariousness of our situation, and also a means of accounting for the apparent resistance to accepting the precariousness we face.

In the absence of a stable natural background, and yet with a belief set that assumes such a background, Žizek describes the intellectual task in ways that are both ethical and educational: “to ‘un-learn’ the most basic coordinates of our immersion into our life-world: what traditionally served as the recourse to Wisdom (the basic trust in the background-coordinates of our world) is now THE source of danger.”⁶ In this same vein, Joan Retallack has argued that we are facing what one could call, in Lacanian terms, another case of the “revenge of the Real” — in other words, when the complexities of the world that exceed our intellectual frameworks come back to haunt us. Yet, she asks, “Could...environmental degradations find such enabling conditions if we were able to give more courageous (honest) attention to the implications of complex systems as they unfold?”⁷

Retallack, then, inspires the finer wording of my question. To what extent are our reactions to the environmental challenges limited by our inability to grapple with the complexity of the world in which we live? If sustainability means anything now it means we need ways of understanding the massive complex systems in which we live, and which are now so much in transition, and our own role and place within those systems and those transitions.

What we need, perhaps, is an examination of the shared structures of schooling in light of what those structures have failed to enable us to understand (namely, our environmental predicament). This essay can only attempt a small part of that larger project by examining the dominant narratives of self in our society and charting the ways those narratives frame our understanding of responsibility and agency. It will then critique those understandings in the light of our growing understanding of the complexity and unpredictability of our everyday interactive lives. While the more nuanced and complex understanding of the self does not lend itself to new curricula, I ask how these lessons can help us reframe schools in our attempt to help engage large-scale questions of environmental significance.

THE NOVEL AND RESPONSIBILITY

Our understandings of our selves have probably always been shaped by narrative technologies. For example, Charles Taylor connects the emergence of the modern self to the shifts in the structure of the novel in the eighteenth century:

The modern novel stands out against all previous literature in its portrayal of the particular. It departs from traditional plots and archetypal stories and breaks from the classical preference for the general and the universal. It narrates the lives of particular people in their detail.⁸

What emerged in the novel, then, was the sense that the everyday details of one's life could be significant. Life was no longer to be understood in terms of other stories (such as Biblical or folk narratives) that might resemble one's own experience; rather, the twists and turns of one's own experience were seen to have significance *in and of themselves*.

Taylor goes on to note that this new understanding of life "was not just a principle of natural philosophers, but part of the way people came to understand their lives."⁹ The power of the novel and its great appeal surely cannot just be understood in terms of entertainment value alone. What is important here is the way that the novel allows people to think of all the particulars of their own lives in terms of a coherent narrative. The novel — a technology that one can hold in one's hand — becomes believable as a representation of a life.

But there is a crucial sleight of hand in that novelization of self-narrative. As Taylor goes on to explain, the novel contains within it some surprising conventions, particularly relating to the portrayal of causality,

making it normal and easy for us to envisage (provisionally) unconnected events as occurring simultaneously in the same story-space. The reader is made into an omniscient observer, able to hold these independently unfolding trains of events together.¹⁰

The novelist can tell more of the story than the characters could possibly know in their own lives, and can follow chains of events that we could never follow in experience. Thus there is a God's-eye dimension to all such narration.

Such a promised vantage perhaps explains the seductive power of the novel, the ways it tempts with a view of the self that is so much easier than its immediate predecessor. For to believe that the twists and turns of one's everyday events can explain life on a large scale offers one an illusion of far more control than one has in a world where such explanations are known only to a divinity whose will can seem quite opaque. Phrases like "God willing," "*Deo volente*," "*in sh'allah*," and "*in yertseh hashem*" speak to this sentiment of divine provenance in the main monotheisms — we cannot know the future, and radical unpredictability is writ large in everyday life. In such a religious framing one can never know the full meaning of one's actions (although one can have faith that God *does* know); the future is referenced only in the context of this irreducible unpredictability.

The novel, though, implicitly obliterates much of this uncertainty. Its very portability suggests that we can understand the impacts of a life within a contained entity. A life can be adequately accounted for in the context of a few hundred bound pages or, in its later manifestation, to an hour or so of movie.¹¹ Indeed, one can skip ahead through the chapters of a movie or a book — to that extent one can cheat the time constraints the technologies impose. No matter, the book and movie, by virtue of their finite lengths, contain the promise of completion. The story will have an end.

That is not to say that great novels and great movies do not discomfort our understanding of the world and make us aware of things about which we had previously been unaware — they do. Yet they surprise and challenge us as they work against the limits placed on narrative by the technology itself — we will see examples of this in the next section.

What is at stake is predictability. Life is unpredictable — that is a stark fact of life — but we can live in the constant awareness of that unpredictability or we can tame it. The novel and the movie, through the sleight of hand discussed above, do this taming. They make the tantalizing claim that we can understand the effects of our actions and see the bigger picture of our human lives. Their narrative structure, which can contain simultaneous yet disparate chains of events, raises the reader to an imagined view of the world that, as we will see below, is not nearly complex enough to account for the lives we lead. Nevertheless, novels and movies promise that they can explain those lives, and that is an appealing claim.

My reading of narrative might well be a challenge for a reader to accept. In the next section, then, I explain the shortcomings of these narrative structures through a discussion of chaos theory. For, as even the most famous work in this field suggests, the conventions of narrative in our culture might do a poorer job than we had imagined in describing the unpredictability of life, and thus offer us a poor understanding of the ways in which our lives and actions connect to the very large and complex issues we face on a global stage.

THE LIMITS OF THE STORY

It is now nearly fifty years since Edward Lorenz first formulated what would come to be called the "butterfly effect" that is credited with catalyzing a revolution in many academic disciplines.¹² This revolution has led to a new understanding of

the world as interconnected, interdependent, and (most importantly) thus unpredictable, in the behavior of systems from stock markets and ecosystems to blood flow and weather patterns. But this work also has important implications for the study of the questions of narrative, responsibility, and agency discussed above.

It is vitally important to understand what made Lorenz's work so original. Before the advent of computers, it was simply too difficult to model complex systems. Their interdependent components mutually interact, so that the behavior of the whole cannot easily be deduced from the behavior of the parts. For example, the weather (as Lorenz studied) is influenced by countless variables (levels and distribution of cloud cover, with clouds both reflecting the sun and holding in its heat; the area of forests that absorb carbon and emit warming gases if they contain too much decay, and so on) and each of these impacts each of the others (such as when a drought leads to forest fires that further exacerbate warming). After creating a program that modeled such interdependent variables, Lorenz was surprised to discover that it was immensely sensitive to the data entered into it; tiny variations in the input could lead to massive variations in output as time unfolded. As an editor later and famously paraphrased the implications of this finding in the real world, the flapping of the wings of a butterfly in Brazil can set off a tornado in Texas.¹³

Before Lorenz, it had largely been assumed that minor changes would have little effect on a large scale. We simply had not been able to see how small differences would affect otherwise identical complex systems. Computer modeling thus revealed that the world is far *less* predictable and stable, and far *more* sensitive to small events (and thus more interconnected and interdependent) than we had previously assumed. But the implications of this behavior have largely been explored only at the frontiers of research in these fields. In nearly all formal schooling, this radical re-assessment of knowledge has had no impact. Arguably, we are increasingly seeing the world as complex but schools still present it as a pretty simple place. We certainly teach students to see the world as a place where effects are roughly proportional to their causes — this is as true in the sciences as in history and political science. And, in terms of our agency as human beings, there is little evidence that people think of their small everyday actions affecting the world in any significant ways.

In terms of our dominant understandings of narrative, the significance of seemingly insignificant events seems most at odds with our understanding of “the way the world works” or, rather, the way we have learned to think of the past. We believe that large effects had large causes: history generally tells us so. As Hannah Arendt noted, however, the explanation of life through narrative always runs up against some persistent limitations of narrative itself. For example, as a society we rely upon historians to tell us what happened, but historians deal with events that occur only once, and thus try to explain what was, effectively, a new and original situation:

This newness can be manipulated if the historian insists on causality and pretends to be able to explain events by a chain of causes which eventually led up to them. He then, indeed, poses as the “prophet turned backward”...and all that separates him from the gifts of real prophecy

seems to be the deplorable physical limitations of the human brain, which unfortunately cannot contain and combine correctly all causes operating at the same time....Not only does the actual meaning of any event always transcend any number of past “causes” which we might assign to it...but this past itself comes into being only with the event itself. Only when something irrevocable has happened can we even try to trace its history backward. The event illuminates its own past, but can never be deduced from it.¹⁴

In this telling, the role of historical narrative in our society resembles a backwards prophesy because it imposes on the multiple interactions of life a linearity that suggests some sense of inevitability. This is a by-product of what I have called the sleight of hand that Charles Taylor described above, similarly imposing what the historian Taylor Branch called the myth of historical explanation on the miracle of events that were highly contingent and could so easily have occurred otherwise.¹⁵ What Arendt calls “the deplorable physical limitations of the human brain, which unfortunately cannot contain and combine correctly all causes operating at the same time” is precisely this difficulty of thinking the complexity that describes our world. We cannot describe the immense complexity of interactions that led to each occurrence, so we pick out events and string them together in narratives. But this linearity of narrative dangerously misrepresents causality and thus leads us to misunderstand our own agency. Narratives might give us coherence, but they might do so at the cost of understanding the interactive nature of our lives.

As noted above, writers have long tried to voice the interconnectedness and complexity that Lorenz first modeled as they work against the limits of their print and visual media. Interestingly, however, to the extent that they succeed, the glimpses of complexity in narrative that they offer seem to be instances of either great fortune (particularly love) or misfortune. To start with an example of the latter, take this passage from Eric Roth’s screenplay for the 2008 movie *The Curious Case of Benjamin Button*. A string of interlocking events in the lives of strangers living seemingly separate lives is described; a string that combined to create the accident that ended a dancer’s career:

And if only one thing had happened differently: if only the shoelace hadn’t broken; or the delivery truck had moved moments earlier; or the package had been wrapped and ready, because the girl hadn’t broken up with her boyfriend; or the man had set his alarm and got up five minutes earlier; or the taxi driver hadn’t stopped for a cup of coffee; or the woman had remembered her coat and had gotten into an earlier cab; Daisy and her friend would have crossed the street and the taxi would have driven by them. But life being what it is — a series of intersecting lives and incidents, out of anyone’s control — the taxi did not go by, and the driver momentarily was distracted and he didn’t see Daisy crossing the street...and that taxi hit Daisy...and her leg was crushed.¹⁶

We can all recognize in this the complexity of the interactions that fill our lives, and the “if only” reasoning of the narrator resonates strongly with the thoughts that many have had in the aftermath of tragedy. But note that, as Taylor claimed earlier in his discussion of what I have called the sleight of hand in the narrative structure of novels, the detail here could not really be known to anyone short of the author of a screenplay. Who would know these intimate details of events in lives running parallel to our own? Here Roth’s narrator voices the interactive complexity of life by abandoning any possibility of that voice’s believability. Daisy might ask herself

why she had not crossed the street a moment earlier or later, and might connect that timing to her friend's shoelace, but the broader web of interactions that Roth describes would be almost impossible to reconstruct. And even this passage leaves out countless other interactive happenings that multiply immeasurably as we move back in time from any event. The same factor limits the effectiveness of Tom Tykwer's excellent 1998 film *Run Lola Run (Lola Rennt)* in which three parallel versions of the same story are played, each differing in the smallest detail, but each ending very differently and, in two cases, tragically. But again, in real life we never see such parallel universes, and thus never appreciate the sensitivity of the world to our everyday actions.

What we do experience, in contrast, is perhaps closer to what we find in this passage from Milan Kundera's *Unbearable Lightness of Being*. It describes the chain of unlikely events that led to the meeting of the main characters, Tomas and Tereza, and the awareness of happenstance in these events occurring:

[A] complex neurological case happened to have been discovered at the hospital in Tereza's town. They called in the chief surgeon of Tomas's hospital in Prague for consultation, but the chief surgeon of Tomas's hospital happened to be suffering from sciatica, and because he could not move he sent Tomas to the provincial hospital in his place. The town had several hotels, but Tomas happened to be given a room in the one where Tereza was employed. He happened to have had enough free time before his train left to stop at the hotel restaurant. Tereza happened to be on duty, and happened to be serving Tomas's table.¹⁷

Love, accident, and death, then, might give us a glimpse of the radical interdependence of our lives. But usually our awareness of the complex is drowned out by the belief that we understand the ways that change occurs and the world in which we live.

What these examples show is that the dominant structures with which we narrate and explain our lives fall short of the actual unpredictable complexity of life itself, even when they try hard to account for it. The world, perhaps, is far more sensitive to the details of the conditions in which we find it, yet our narrative conventions want to reduce this sensitivity.

REACQUAINTING THE REAL

I started this essay with a call by Retallack for us to "give more courageous (honest) attention to the implications of complex systems as they unfold" if we are to be able to engage the environmental challenges we face. This essay has tried to do this by bringing an exploration of complex systems into the heart of our self-understanding. There are no easy educational lessons here — no simple suggestions for a sustainable curriculum, for example — yet there is much to learn. Given the limitations of space, let me outline two points briefly.

The first concerns hope. As this essay has tried to show, the very claim to be able to make sense of our lives — a claim that schooling makes — is problematic in the ways it simplifies the complexities of life that we must start to engage more fully. As has been noted by many other writers, the hard fact is that (empirically, at least) sustainability is the opposite of schooling; modern schooling has grown in lockstep with fossil fuel use.¹⁸ While correlations do not imply causation, neither do they imply independence; schooling is implicated here in a challenge of unprecedented

seriousness and scale. To many, this bleak view of the future might be incompatible with the implied hope that is rooted in the educational enterprise. Yet this only highlights the ways that an idealized view of causality shapes curricular discourse. It is vitally important that we not candy coat the futures we face, and that we develop an educational discourse that tries to be honest in its appraisal of the challenges that our students will have to engage.

The second concerns precariousness and identity. The views of self and narrative that are contrasted in this essay differ in their awareness of precariousness. Schools portray the world through circumscriptions of responsibility and implication (by suggesting, in other words, explanations of life that delimit that for which one is responsible), and yet many students cannot accept these narratives. Those who can accept these circumscriptions are privileged to the extent that they live in a world where they do not have to worry about implications that others cannot afford to avoid. Yet many never have the recourse to the intellectual solace offered by schools; those students can find precarious consequences (or potential consequences) to their every action. How many cannot assume their identities are fully accepted at school or in the world beyond, and find themselves challenged by what social psychologists call “attributional ambiguity” — the sense that they cannot be sure about the explanations offered by others concerning the events in their lives?¹⁹ In these ways, these questions of the self in the context of sustainability need to be looked at in terms of the identity performativities of privilege if we are to access the problematic understandings of self where they are most comfortably entrenched.

Combining these two points, we must affirm the precariousness of our predicament, but we should not imagine that such an affirmation leaves us devoid of options and hopeless. The stark fact is that an awareness of radical precariousness has been far more typical of human history than its imagined absence. While we should not imagine we can “go back” to some more stable past, there is much we can learn from the ways that people have found hope and understood social change in conditions that seemed precarious. These understandings often build from understandings of the self that have little in common with the modern understanding critiqued in this essay, and much more in common with the alternative I have outlined.²⁰ These understandings can open new possibilities in teaching, and new ways to understand and frame the project of education and schooling.

1. The very limited requirements to address our environmental predicament in schools are outlined at http://sustainableschools.org/discover/sus_nor.htm#NationalOverview.

2. For example, Washington State now mandates that “All students are prepared to be responsible citizens for an environmentally sustainable...society” as one tacked on sentence in a long document. Yet, in the same sentence, the standard throws in the similarly massive goals of diversity and global interconnectedness: “Standard V” (Olympia, Wash.: Professional Education Standards Board, 2007) <http://www.pesb.wa.gov/ProgramReview/documents/StandardV.pdf>.

3. Susan Solomon et al., “Summary for Policymakers,” in *Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge, U.K.: Cambridge University Press, 2007), 13–14, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.

4. Claudia Ruitenberg, "Deconstructing the Experience of the Local: Towards a Radical Pedagogy of Place," in *Philosophy of Education 2005*, ed. Kenneth R. Howe (Urbana, Ill.: Philosophy of Education Society, 2005), 213–16.
5. Slavoj Žizek, "Nature and Its Discontents," *SubStance* 37, no. 3 (2008): 56.
6. *Ibid.*, 59.
7. Joan Retallack, *The Poethical Wager* (Berkeley: University of California Press, 2003), 212. Retallack claims that such a revenge of the Real is almost paradigmatic for the challenges we now face: "the grim panoply of wars, civil revolts, famines, social and economic and environmental injuries, catastrophes, and upheavals" (212).
8. Charles Taylor, *Sources of the Self* (Cambridge, Mass.: Harvard University Press, 1989), 287.
9. *Ibid.*, 287.
10. *Ibid.*, 288.
11. For a fuller discussion of the movie as a source of self-narrative and self-understanding, see Neal Gabler, *Life: The Movie* (New York: Vintage, 2000).
12. Lorenz's attempted shortcut with his computer, which led to his discovery, occurred in 1961. See Edward Lorenz, *The Essence of Chaos* (Seattle: University of Washington Press, 1993).
13. For a fuller account, see James Gleick, *Chaos* (New York: Penguin, 1988).
14. Hannah Arendt, "Understanding and Politics," in *Essays in Understanding, 1930–1954* (New York: Harcourt Brace, 1994), 318–19.
15. Taylor Branch, "Myth and Miracles from the King Years" (speech delivered at Urban Grace Church, Tacoma, Wash., January 22, 2007).
16. Eric Roth, *The Curious Case of Benjamin Button*, DVD, directed by David Fincher (Los Angeles: Warner Brothers, 2006). While the film is loosely based on F. Scott Fitzgerald's short story of the same name, this passage was original to the movie.
17. Milan Kundera, *The Unbearable Lightness of Being* (New York: Harper Perennial, 1999), 35.
18. See, for example, David Orr, *Earth in Mind* (Washington, D.C.: Island Press, 2004), 5.
19. See, for example, Claude Steele, "Thin Ice: 'Stereotype Threat' and Black College Students," *Atlantic Monthly* 284, no. 22 (1999): 44–47, 50–54.
20. For more details about what such understandings of hope might look like, see Julian Edgeose, "Radical Hope and Teaching: Learning Political Agency from the Politically Disenfranchised," *Educational Theory* 59, no. 1 (2009): 105–21. See also Julian Edgeose, "Hope in the Unexpected: How Can Teachers Still Make a Difference in the World?" *Teachers College Record* 112, no. 2 (2010).