INTERVENTION

Refashioning Origins in the Anthropocene II: Facing Hyperobjects as Pedagogical Practice

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Educational reform may play an important role in transforming ontological thinking in the Anthropocene. While many critical and environmental pedagogies utilize reflection and writing to bring about a greater ecological awareness in students, *dark pedagogy* specifically advocates using these practices to help students explore the partially unseen, non-human "other" in their lived experiences. More than an ecological awareness, dark pedagogy facilitates an intimate understanding of object-oriented ontology and is thought to enhance students' abilities to face the Anthropocene's uncanny, disturbing, and frightening qualities. In this follow-up contribution to an *Anthropocenes* journal Intervention section (Brite et al. 2021), we report on the work of four student authors to learn more about their uncanny experiences through dark pedagogy reflection and writing.

  In the earlier contribution, five student authors from the Purdue University John Martinson Honors College (JMHC) shared their origin stories to convey their reflections on self, place, and belonging amid global planetary change. The origin narratives in this first set contributed by students were provocative in their affective expression of an ecological awareness disturbed by perceptions of massive material bodies, or 'hyperobjects' (Morton 2013). These were described variously as entities that could threaten, erode, alienate, and inure them from modern life as they struggled towards self-genesis and place-making. In this second iteration of the class exercise, four new students from the same course, HONR 39900: The Anthropocene, in the fall of 2022 extended beyond this work by crafting and then re-examining their origin story to explicitly identify and confront their hyperobjects. A post-course writing group was formed that allowed additional time for these students to revise their work, supported by instructor-guided exploration of critical texts selected based on central themes in their writing. In this second iteration of the classroom exercise, the outcomes were significantly more directed by the students themselves; the students selected the order in which the narratives are presented, and they collaborated in weekly discussions to reflect upon and finalize the meanings they derived from their activities. An instructor-authored introduction frames the pedagogical approach, and a concluding section considers its outcomes in furtherance of developing classroom practices for the Anthropocene.

Introduction

The Anthropocene may require a fundamental change in the ways people think and learn. It is, according to many, a Batesonian double-bind (Bateson 1972): our species survival depends on resource extraction, which threatens our survival; we must address this threat through more extraction, supported by more advanced technologies, which will further our survival but also hasten our demise. Typically, the solution to a double-bind is to stop attempting to solve problems with the same thinking that produced them; and, as it stands, our current models for thinking appear to make it easier to imagine the end of the world than to imagine the end of capitalism (Fisher 2009; Rowson 2019: 9).

  For many scholars of the Anthropocene, this crisis of imagination presents a significant barrier to addressing our current predicament, and it places the classroom at the center of ontological, epistemic, and ecological change (Fisher 2009; Graeber & Wengrow 2021; Leichenko & O'Brien 2020; Riede 2022). One vein of this call for epochal education reform argues that we must enable learners to perceive and understand the terrifying, uncanny worlds of which they are a part in order for them to find transformational means of living within them. "Dark pedagogy" is the term that is used to describe this new strategy for teaching (Lysgaard & Bengtsson 2020;

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Lysgaard, Bengtsson & Laugesen 2019; Saari & Mullen 2020; Carstens 2018), which takes its roots in Timothy Morton's (2013, 2016) concept of dark ecology. In this second contribution to *Anthropocenes* Intervention section, we present the most recent results of an endeavor, begun in fall 2021, to enact dark pedagogy in the classroom with students from the John Martinson Honors College (JMHC) at Purdue University. Purdue University is a public land-grant institution in the United States with an academic culture that strongly promotes progress through technological innovation, providing rich ground for challenging students' imaginations of the present and future (Brite et al. 2022). In the previous contribution, five narrative accounts of JMHC students were shared as an example of how to start students in a process of reflecting upon their concepts of self, place, and belonging in the Anthropocene, and assessed what their narratives revealed about current states of being. In this follow-up piece, four more Purdue honors students engaged this process and then extended it, by re-examining their origin narratives to explicitly identify and confront its hyperobjects. A post-course writing group was formed that allowed additional time to reflect upon and revise their work, supported by instructor-guided exploration of critical texts selected based on central themes in their writing. In the sections below, we provide further details on dark pedagogy and how it was enacted in fall 2022 and spring 2023 with the four student co-authors included here, and we then present the outcomes of their work. Among the themes, the students considered their vulnerabilities, dislocation, burden, and loss of intimacy, while at the same time they raised important critical questions about how to best explore the material realities of the Anthropocene and respond to it.

Dark Pedagogy in the Classroom

Dark ecology (Morton 2013, 2016) is the idea that our ecological reality is a relational ontology that fashions a presence and a self of which we are not wholly aware, but which lies at times and places in the dark, unsensed but unquestionably real, with material agencies that transcend a neat divide between the subject and its objects. Invoking relational ontologies and new materialism in the exploration of self and place (e.g., Bennett 2010; Braidotti 2013; Meillassoux 2009; Harman 2018), dark pedagogy is a method for getting to know this world (Lysgaard & Bengtsson 2020; Lysgaard, Bengtsson & Laugesen 2019; Saari & Mullen 2020; Carstens 2018; see also Lynch & Mannion 2021; Riede 2022). It asserts that the starting point for transformational learning in the Anthropocene is to dive deeply into perceptions of dark ecology by exploring the material agents that are partially withdrawn from us. Students must identify and observe to the best of their abilities these objects' contours and properties in the making of self and place. In doing so, they may discover the "death of the subject" (Froebus 2019; Lysgaard, Bengtsson & Froebus 2020), the poststructuralist notion that an individual cannot know itself fully or act with full agency, and that what makes a person instead in the current geologic era can be reconstituted, it can be a

holobiont, and/or something otherwise generative with the non-human. Alternatively, they might come to realize a more mediated, metamodernist protagonist that exists between worlds (Stein 2019; Rowson & Pascal 2021). In either case, the student redefines oneself as something intersubjective through explorations of object-oriented ontologies (e.g., "dark haecceity," Carstens 2018).

The pragmatic challenge of dark pedagogy is that there are currently few practical examples of how it is to be enacted in the classroom.[1] Broadly, dark pedagogy seems to call for an undoing of the power relations between the educator and those being educated and, specifically, a relinquishment of the educator's commitments to progress in advancing human development through identity construction and the acquisition of productive skills. Dark pedagogy is not, however, a Humboldtian or folkish model of value-laden teaching to instill spiritual or cultural sensibilities (Rowson 2019: 7), nor is it a Freireian pedagogy of the oppressed (Freire 2000); it does not elevate the human above all else. Rather, the direction of classroom activities emerges from students' feelings in confrontations with material power. It focuses on an integrated learning where the students' emotive responses of horror, fear, dread, anxiety, depression, estrangement, alienation, and despair in relation to global planetary change are engaged as core to the process of defining what knowledge is and determining how it is to be acquired. Stated another way, epistemology is determined by the student, who comes to it through their awakening to their fundamental relations with terrifying beings. In practice, this entails an aesthetic approach to the student's affective experiences. Through the creative exploration of their uncanny feelings and past experiences, students may strengthen their capacities to understand these frightening forces, and following this, to find ways to cope in ruinous times and, more hopefully, to identify as yet undetermined collective means to transcend the current ways of being and doing.

Dark pedagogy presumes that a society which pursues education as the development of human potential towards an instrumental good also sets itself against the world, and in doing so makes itself *a priori* incapable of understanding the complexity of the global crisis that it faces. The first order of business is thus to throw human progress towards human ends out the window and get a handle on the shape of that complexity. Here, Morton's (2013) concept of the *hyperobject* is especially useful in the classroom, because it sets students on a tangible path to identify the very real things, such as global warming, nuclear radiation, petroleum, plastic, and coal dust that pervade bodies, form worlds, and induce that complexity. Hyperobjects are seemingly easy for students to grasp; they are materially real things, identifiable despite being in excess of and never fully captured by any clearly defined properties: partially withdrawn things that students know intimately (whether they realize it at first or not). This makes hyperobjects a good starting point for introducing dark pedagogy in classroom activities.

For fall 2022, we faced hyperobjects head-on. Building from an origin story narrative assignment from the

previous year (see Brite et al. 2022 for full description), in this iteration students were asked to return to their origin narrative and to explicitly identify its hyperobject. They were provided the following writing prompt, along with instructional content to aid in their identification (lecture, readings, and discussion):

> Timothy Morton (2013) suggests that one way to know the Anthropocene is through perception of *hyperobjects*—the massive and pervasive material forces that threaten our survival, but which are impossible to know in totality. Please define hyperobjects for your readers. Then, look back at your narrative 1 (Origin Stories)—was there a hyperobject that you can identify in that story? If so, please describe it in greater detail and consider its relationship with you and your "kin." If you cannot readily identify a hyperobject in your story, you may identify another hyperobject of your choosing and explore its implications for you and others.

Out of a class enrollment of nineteen students, four were selected based on their depth of thinking, the quality of their prose, and their interests in further developing their work, to spend an additional semester (spring 2023) with the instructor working further through their hyperobject exploration. Students and the instructor met each week for one hour to discuss the development of their work. In the first weeks, discussions centered on a grounding text assigned to each student, chosen based on the overarching themes in their first draft (the texts assigned are listed under the authorship attribution of each student below). Following this, students were asked to reread and rethink their narratives, sharing ideas with one another and the instructor, and collaborating on notes, co-writing, writing alone together, and thematically coding the work where the impetus arose. Discussions were unstructured and emergent, with the instructor generally attuned to asking questions or posing scenarios that could introduce and clarify the pedagogical strategies outlined in **Figures 1** and **2** (for example, routinely returning to questions such as "how does this feel?", "what is alike or different in your telling from what the author(s) you read have composed?", and "what meaning do you make of this?").

Reflecting on the classroom dynamic, some days resulted in lively and in-depth discussions, either about the texts that were read, their content and implications for personal experiences, or very frequently about the personal impacts of speculative and dystopian fiction on the students and an assessment of its limitations. All of the students were previously familiar with the writings of H. P. Lovecraft, and they seemed to implicitly and immediately perceive his works' relevance to Morton's (2013) imaginings of the uncanny hyperobject and Haraway's (2016) invocation of Chthulu to advance a posthuman world. What they attended to most closely, however, were two main aspects of Lovecraft's work: his misogynist, racist, and antisemitic orientations, and his fear and lack of understanding of scientific advancement. The relevance of Lovecraft piqued the students' interest to the degree that they self-organized a trip to the public library together to further explore his work.

On other days, both instructor and students seemed to struggle with the shared task of learning without progress or a clearly defined target of success. In these instances, instructor guidance towards valuing and meaning-making (see **Figure 2**) were only partially and unevenly taken up, and these were expressly viewed as challenging practices

	ETHIC	IDENTITY	PEDAGOGY
HOLOCENE	progress	person as part of a social whole	Technical and intellectual skills development to define the self and make societal contributions
ANTHROPOCENE	kinship	Person as relational body of many agents	Identification of emergent values through sensorial experience, place-making, and kin-making

Figure 1: Differences in pedagogical purpose and strategy between the Holocene and Anthropocene epochs. As initially described in Brite et al. (2022). Weekly classroom discussions explicitly and implicitly de-emphasized the former (Holocene) in favor of the latter (Anthropocene).
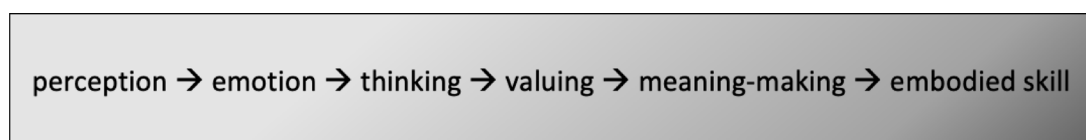
perception → emotion → thinking → valuing → meaning-making → embodied skill

Figure 2: Idealized stage progression of learning. Adapted from Rowson (2019: 5). Notably, students expressed difficulties (or reservations?) as they encountered valuing and meaning-making.

for the students to engage (for example, the refrain, "Dr. Brite finds meaning in *everything*!" came up more than once, with both affectionate, appreciative humor and a tinge of frustration). Following the presentation of student work below, I provide further reflections on the outcomes of our shared work and outline prospects for further pedagogical development.

Student Author Contributions

Charlotte Yeung

hyperobject: weapons of mass destruction (WMDs)
assigned text: *Voices from Chernobyl*, by Svetlana Alexievich (2005)

I grew up in a generation of American children who have never lived in a time when America hasn't been at war with someone, unofficially or officially. But it was a forgettable reality. I didn't think much about the military and war and weapons of mass destruction. Then I went to Hiroshima.

The idea of a bomb decimating an entire city in a matter of seconds was such a far-fetched, abstract concept to me. Then I met the direct heirs to atomic weapons' violence, saw the physical manifestations birthed from the bomb. Hearing their stories of carrying the wounded and stepping through bodies, seeing the shadow of an incinerated man, the rips in survivors' clothes, seeing the black smears of radioactive rain stuck on cement almost 80 years later, the sheer amount of bodies bloating the river from paintings . . . Those made the threat of nuclear weapons real in a way that I never felt before.

I started to see nuclear weapons and other weapons of mass destruction (WMDs) like chemical and biological weapons everywhere. I remembered a time when my father and I were in the cavernous stalagmite-ridden interior of Mammoth Cave. I looked over at my dad and asked him if he had ever been in a cave before. He nodded and said he used to play in caves in mainland China, caves that the villagers told him to run to if the Americans ever dropped their bombs. It was a grim, if misguided, sentiment. No person, let alone a child, could outrun a nuclear weapon.

WMDs are a hyperobject, something so vast and uncontained that no individual can fully comprehend its effect and may even deny its influence. It's hard to comprehend the idea of America having already used cloud-seeding technology in the Vietnam war to create more mosquitos and spread fungal infections. It's hard to comprehend how people in the USSR and Americans suffered from nuclear testing, radiation causing cancer years after tests. Or that civilians were attacked with Sarin in 2013 and soldiers forced to inhale mustard gas in World War I. The horror these weapons have wrought is so inhumane that many don't even want to discuss it.

I also think that there is a finality to these weapons that makes people want to look away. In many of our apocalyptic stories, we assume that we will be able to walk, that we will be alive with little to no physical deformities. If these weapons don't kill someone, they often leave people disfigured with severe burns, blindness, and more.

As a writer, I'm fascinated seeing the shift in literature. While before, there were sci-fi and religious fantasies of the world ending, the nuclear bomb signaled to the world that we did in fact have the very weapons to destroy ourselves and they were controlled by a handful of people most would never meet. The world ending wasn't really so far-fetched anymore. I often think about Ray Bradbury's *There Will Come Soft Rains*, a short story about a smart house that continues cooking breakfast, setting up baths, and doing day-to-day tasks while its owners' bombed shadows are stuck to the side of the house. The house eventually goes up in flames. Among people my age, there is a whole literary pipeline from middle school to high school where we are exposed to dystopian stories like *The Hunger Games*, *The City of Ember*, *Last of Us*, and *Parable of the Sower*.

In a stunning reversal, we became gods. Suddenly, we could seed clouds, control the weather with chemical weapons. We could destroy cities in a matter of minutes with nuclear weapons. Spread plague to people at will using biological weapons. We became the harbingers of our own doom.

The difference between a tale and WMDs is that the ending isn't clear. We don't really know the long-term effects of radiation. We don't know if there will be a nuclear or biological war. We don't know where countries dumped a lot of their chemical weapons, waiting like traps for unsuspecting fishermen and others to raise from its ocean or earthen crypts.

In this world, the environment becomes a character that could hurt or help us, radiation and violence redefining the contours of life. But explaining war and environment as part of a story is limiting; it is my mind trying to comprehend the sheer vastness of the anthropocene. I hope that the longer I face it, the better I understand it.

Summary comments
Writing, discussing, and redrafting this recollection changed all my perspectives. The longer I discussed with my fellow co-authors, the more I thought about WMDs and their influence over the environment. The best way to explain this is to bring up radiation as discussed in *Voices from Chernobyl* by Svetlana Alexievich. For some, radiation robbed them of children, spouses, and neighbors, or made them very sick. For others who returned to their radioactive homes, it made them closer to the earth and to life. No longer able to easily access grocery stores and even other people, these people became self-sufficient and spent their time marveling at a once human settlement slowly being taken over by nature. This latter group saw radiation and Chernobyl[2] as bringing them closer to the environment. Of course, for this group as well, radiation never left them. It was in the ground, in the water, in their bodies.

I have spoken publicly quite a bit about the effect WMDs have had on people and human culture. But these weapons lurk in our oceans, our air, and our land. Great Britain's anthrax bomb tests killed sheep and led to an entire island being closed off. Athenians dumped hellebore into rivers and poisoned the water and those who drank from

it. Some argue that the anthropocene starts with atomic weapons, when these colossal bombs destroyed cities in seconds and launched radioactive material and created new weather in the earth and space. Whether or not it's a new era, it is undeniable that these weapons have changed the cycles and systems Earth runs by, radiation and mass violence seeping into our understanding of humanity and the environment.

Sanika Pelnekar
hyperobject: swastika
assigned text: *Staying with the Trouble*, by Donna Haraway (2016)

At the root of humanity was the belief that there is a power greater than us, and from that stemmed religions which have trickled down through generations, but with one enduring similarity: symbols. However, new generations need to be taught these symbols, and in kindergarten, their next victim was me. The impact that going to a Christian private school had on the mind of a little Hindu girl cannot be understated. It is still something that influences me to this day and defines the way I view religions. Within religions, there is always symbolism, and the sad reality about symbols is that that is all they are. Symbols can be indicative of anything, and that meaning can change and warp a whole population's vision of it. The Anthropocene has changed the way we view the world at its core to such a degree that it has become difficult to define anything with much tangibility. This results in the violations of the sacred, with nothing anyone can do to stop it.

Symbols are defined by the majority, and nothing more exemplifies this than the swastika. Over the many years that it has existed, the swastika has picked up more connotations than I can think of putting into words; however, what strikes me is the dichotomy of the two meanings that it has picked up, which exist on such opposite sides of a spectrum. I wonder how it happened at all. Before it became a symbol for everything the Third Reich inflicted on the world, it was a symbol of peace representing the sun and all that it brings, including prosperity and good luck. For Hindus and other Eurasian cultures, it was representative of the power of the gods. But all that beautiful imagery has now been corrupted, and this corruption is permanent. Even if it is simply a series of patterned lines, it has come to represent all the horrors faced by the victims of World War II, and this definition has transcended the meaning of peace that had been attributed to it for thousands of years. Beyond any other symbol of racism, even those that are original, the swastika still endures as the forefront of many neo-Nazi and similar groups. A blip in its symbolic history has altered its meaning forever.

Therefore, I am not allowed to wear it, even as a pretty necklace, because people associate it more with a perverted symbol of terror than a beautiful religious representation. I find myself lost in this duality sometimes: whether I should follow the general population or stick to my religious history at the risk of being seen as associated with a neo-Nazi group. Even now, my first reaction is always a

moment of pause in regard to the negatives before I focus on the positives; its perversion has spread even to my subconscious. Now, you might ask, "why not just explain yourself in response?" and that seems simple enough, but what do I do with the kind of people that don't bother asking? After all, a single person has no power against the mounting pressure of a perverse violation that has spread through society, especially at 10 years old.

As we continue to see the impacts that we are having on the environment, we notice once again this reaction mentioned by Haraway, that humans put the blame on anything but themselves, or if a human cause is admitted, then, it is due to "other" humans. For the climate crisis, society has decided to place the blame on the environment and on the sun, which is the source of the heat causing ocean levels to rise and natural disasters to be increasingly frequent. Once a symbol of life, the sun has been corrupted into a symbol of the unknown fate of the Earth at the hands of humans, because not even the most sophisticated climate models can perceive the greatest warming the earth has seen to date. It's a hauntingly familiar tale, thousands of years of culture and beliefs warped by a momentary blip in time. It feels apt in some ways to synonymize the two, but these are probably not the only examples that can be found, and in the end, is any symbol really safe from the possibility that it will be used in a moment that defines it until the end of time?

Summary comments
Nothing felt as jarring to me when talking about the Anthropocene as simply understanding the timescale as a whole. One of the most common debates in the field centers around the reactions that people have to these moments of existential dread. Many works agree that H. P. Lovecraft is a valuable source of authentic human emotions in response to incomprehensible fears after stripping away the obvious biases that fuel his work. Still, I think that Donna Haraway summarizes it well in her book *Staying with the Trouble*: that most people will have two reactions to the daunting reality that the climate is beyond saving, based on the latest reports by the IPCC. The easiest solution that most people take is that technological innovation will save us from the actions of "naughty" humans, while others process through the dread and then still continue to drag themselves forward.

The swastika sets a precedent for the ability that individuals have over the meaning of symbols, and it's hard to imagine what other perversions society is capable of. Inherently, even if the peaceful meanings we have attributed to them today die out, the negative connotation will live on forever, unwavering. To me, that is the scary part of environmental change. There are the obvious impacts on the physical environment, but those are relatively predictable with models. By contrast, there is no way to predict human behavior nor the impacts that the event will have when I'm no longer even an afterthought. In my lifetime, I cannot grasp the history behind it, nor can I grasp the future of what it is to become. Time will trudge on without me, and something so enduring will always be vulnerable to human behavior.

Shivani Venkatraman
hyperobject: natural disasters
assigned text: *Facing Gaia*, by Bruno Latour (2017)

It's almost ironic, how the Anthropocene—the epoch defined by humanity—can sometimes be understood best through the perception of things we will never fully grasp.

My childhood was characterized by stories from the Dashavatar, the avatars of Matsya and Kalki being simply two in the many colorful depictions of an almost fantasy-like Earth, getting saved from disaster after disaster. Floods, earthquakes, toxic gas, humanity itself. Each and every story telling the tale of a loving yet unknowable Earth—so vast that none would ever be able to reach the sky or break past the crust without her explicit say so.

Natural disasters. Both a phenomenon and a literal event. The repetitive theme of my childhood in hyperobject form. Humanity scrambling at the whims of the Earth, her mercy the only reason scrambling bore fruit. Something that could be felt, even beyond the colorful comic books and moral tales, my family scrunched together playing Uno on the tiled basement floor during tornado season.

Natural disasters have been something that have intrigued people for millennia. Ancient Greeks referred to thunder and lightning as signs that the god Zeus and goddess Hera were fighting, volcanic eruptions have been attributed to the goddess Pele getting angry in Hawaiian culture, and those are simply two of thousands of such stories. There are no other phenomena that evoke such visceral feelings of human inadequacy as natural disasters.

Perhaps, by looking at such historical mythos, it makes sense why currently dystopia has such a strong hold on our modern world. The age of mega-corporations and fundamentally corrupt governments is no longer a fantasy of the future but rather a reality that is becoming clearer and clearer. A common reference in literature regarding our current geologic age is the famous (and notorious) author H. P. Lovecraft—simply for his depiction of existential dread. Such blindness perfectly encapsulates our modern world. The idea of sitting in a cold dark room and letting mundanity scare you past functionality—hopelessness mere shades better than the denialism prevalent in society.

But humanity, or technology, is always evolving. It's something humans base our advancement on. Always competitive, with ourselves and versions of us that no longer exist, a constant desire to always do better—for better or for worse. But when it comes to natural disasters, no matter how far we have advanced, we can do no more than prepare. We cannot prevent a thing in the face of the Earth's desire for it to occur. All we can hope for is enough prior notice to get the heck out of Dodge.

Natural disasters evoke a strong emotional response in people. They showcase the hypocritical and easily splintered nature of human love, wherein people can both love others with no thought toward themselves and at the same time readily accept the cruel struggle for human survival. Those coming together in solidarity and support are often the same people who pay no mind to the historical lack of care and disaster preparation provided for poorer communities.

A story that has always stuck with me is Harry R. Truman refusing to evacuate during the Mount St. Helens eruption. What a human notion—giving living value to a place. Despite the reality of the situation, despite the scientific data, Truman said, "[My] wife and I, we both vowed years and years ago that we'd never leave Spirit Lake. We loved it. It's part of me, and I'm part of that [expletive] mountain" (Grisham 2015). And he stayed on the mountain, in his lodge where his home was. And he passed away on May 18, 1980, when Mount St. Helens erupted.

Humans are said to thrive in adversity. We market ourselves as cockroaches, able to withstand anything and everything. There is hubris in our love for ourselves and our places—an almost godliness in our belief to overcome. What are we, if not constantly tossed around by the whims of the Earth, gloating at our attempt to survive whatever is thrown at us.

Global warming is humanity's next challenge. By a wide definition of natural disaster, is global warming not a natural disaster of its own?

An ouroboros, our pride grown too large to contain—survival of the fittest, where fitness is determined by the piles of money we sit upon, selling our souls piece by piece.

The Earth taking its decay into its own hands and pointing it straight at the cause.

This time, it seems like we didn't even choose to prepare.

Summary comments

The experience of writing this piece, for me, was an exercise of expressing my cynicism—or realism—on the page. Dark pedagogy is an interesting reality of our current world, and this piece was an attempt at exploring the idea of just that. Of sharing emotional labor. Sitting together with my co-authors and sharing the burden of knowing and learning about our not-so-bright future and trying to understand together how to live with that knowledge.

Hope is something that defines the human experience beyond its current confines. Even when discussing systemic violence (towards nature and people alike), there are always people who take it upon themselves to change their lives in its wake. For all the nihilism I'm sure I brought to the table, there is something almost hopeful in others who listen and care.

As always, I go back to writing. There is so much literature, and many, many personal accounts of natural disasters, because at their core, they are something so much larger than humanity. An intangible giant touching our small human existence. Unlike the moon, we did not have to reach for the stars to come into contact—instead, we had no choice in the matter. And yet, as Charlotte mentioned in her piece, humanity has already attempted to play God through the form of cloud seeding. Scientists only hope to go further and further, sentient artificial intelligence becoming a closer and closer reality.

So instead, the conflict has turned. Who would win in a matchup between giants? And would there even be anything left to win? That's the final idea.

Olivia Okin
hyperobject: coal
assigned text: *Love in the Anthropocene*, by Dale Jamieson
and Bonnie Nadzam (2015)

There's something to be said for the presence of intimacy when engaging with nature and with each other. Whether it is building a relationship with another person or with our natural surroundings, intimacy—either emotional or physical—is a necessary part of forging those bonds.

The place where I've seen this intimacy most clearly is in the mountains of West Virginia, the place of my birth and of much of my family's history. It is also a place marked by environmental change, of coal mining that has gone on for so long that it has defined the region both culturally and geologically. For many West Virginians, coal can be an intimate partner, but its mining is also an eruptive force that shatters the living surface and erodes intimacies as it is unearthed. To explore the intimacies of this place, old and lost, young and shattered, I want to tell three stories: that of my grandparents, that of my own experience in West Virginia's landscape, and that of the region's mountaintop removal mining.

I'd like to say that nature played the role of matchmaker in my grandparents' relationship, but that would likely be clichéd and not entirely accurate. Instead, it served as the setting for their fateful meeting—a pivotal role nonetheless. My grandparents met when they were 10 and 11 years old, down at the swimming hole by the old Mill Dam. My grandfather was towing his family's home-grown watermelon harvest in a yellow boat to sell to the summertime swimmers, and my grandmother happened to be at the right bend of the right creek at the right time. After selling his stock, my grandfather went home and announced that he had met the girl he was going to marry. That single small moment deep in the Appalachian mountains sparked over 70 years of marriage and three more generations on our family tree.

I myself have been to the Mill Dam, a crumbled, lichen-caked ruin of what it once was. Where the swimming hole used to be has returned to a flowing river, one that I've found myself wading through many times over the years. In their 2015 book, *Love in the Anthropocene*, Dale Jamieson and Bonnie Nadzam ask the following question in regard to how we live and love within changing natural landscapes: "Will experiences like this or the art that expresses them be accessible to us? Will we even be able to understand the loves of our parents or grandparents?" (Jamieson and Nadzam 2015: 211). As someone who has had the opportunity to stand at the edge of where my grandparents met and has seen how the place has changed over the years, I'm not sure I know the answer.

My own intimate moment within West Virginia, however, isn't quite so storybook, or at least not as much as marrying your childhood sweetheart. Instead, when thinking of my intimate connection to West Virginia, my mind first goes to countless moments of driving through the mountains, moments where my eyes would follow the great black seams of coal from the viewpoint of my childhood car seat. There, I would press my finger to the window and trace the dark paths as they wiggled their way through the rock faces on either side of me. Although separated from the stone by a layer of glass and driving speeds of over 60 mph, there was something that tugged at me to make contact with the natural world around me. Whether it was my ancestors who worked in the coal mines or my father who still works in coal-plant-cleanup, it is safe to say that West Virginia's key resource is a part of me.

Beyond meetings at the Mill Dam or car rides past coal seams, however, the intimacy I've seen and experienced throughout the state deteriorates in the face of large-scale mining practices, such as mountaintop removal mining. Instead of small moments creating connections between humans and the world we live in, these mining practices, alongside the environmental damage they've caused, have forced us to "zoom out" from nature and from each other, to disconnect from these things in pursuit of progress. To me, there is an emotional detachment present in the practice of mountaintop removal mining, a loss of intimacy that can be seen in the explosions that sever mountaintops from their roots to reveal the coal within. It is this loss of intimacy that has left more and more verdant peaks replaced by dusty, short-shorn plateaus, and has led to rivers (not unlike the one that runs through the Mill Dam) filled with rubble.

Rekindling this intimacy, however, is essential in facing the rest of this new era. Without it, I fear that humanity's link with nature will be irreversibly severed.

Summary comments
When engaging with this group discussion and writing process, I was introduced to a myriad of different perspectives and ways of thinking. I had the chance to observe how four individuals of similar ages could have wildly different experiences within the anthropocene while still coming across pivotal shared experiences. Whether it was what books we grew up reading, movies we grew up watching, or what we have seen on social media, we found a common ground as members of the same generation going through the same monumental societal and environmental changes. The differences in perspectives and thinking arose, however, in how those changes manifested in our personal lives and how that informed what we found most impactful in discussing the anthropocene. Such manifestations seemed to be shaped by each of our personal origins, whether in terms of our cultural backgrounds, specific life experiences, or even the places we have lived and grown up. As an individual whose origins revolve around rural Appalachia, I found myself considering my musings to be more "quaint" than that of my collaborators. However, the quaintness of my experiences and stories didn't diminish their weight in the eyes of the group; it rather seemed to add an additional facet to an already complex discussion.

Concluding Remarks
In seeking a dark pedagogy in the classroom, Saari and Mullen (2020) encourage instructors to unpack the concept of the uncanny with their students to enable learners to reimagine ethical values in the contexts of

global warming. Rather than place-making, students can trace the geographic and temporal contours of excess and non-locality that typify anthropogenic planetary change to understand with whom and what they co-exist; rather than seeking blissful harmonies with a nature out there, they can acknowledge and work through their *solastalgia,* their sense of longing for places that no longer feel like home (Albrecht 2005, 2019, 2020), to find a new means of living within disorientation, homelessness, estrangement, memory loss, and alienation (Saari & Mullen 2020: 1471, 1473). The critical questions for these propositions are, what does this look like in practice, and what comes out of it?

We have shared the results of one such attempt to apply a dark pedagogy in the Anthropocene classroom. To a degree, these narratives are the laying out of processes in themselves and remain open to the student authors' additions and revisions, and to readers' multiple interpretations. Reflecting on the educational context that produced them, first it can be said that at times our classroom work undoubtedly surfaced retreats into 'denial'; it also revealed already enacted 'insanity,' if we are to use these terms in the sense that Lysgaard, Bengtsson & Laugesen (2019: 8–9) present them. As for denialism, there were many moments of frustration, exhaustion, and an emotive need to return to business as usual in the pursuit of careers when our weekly hour together ended. As for insanity, it was striking that each of the students had already added a kind of "sidestepping of pragmatic norms to capture uncanny vistas of real things" (Lysgaard, Bengtsson & Laugesen 2019: 8) before joining the fall 2022 course: most of them are active creative writers in addition to their other major(s), expressly inspired by dystopian literature and science/speculative fiction; some are also pursuing alternative forms of education, such as Yeung's work in nuclear non-proliferation activism, or seeking meaningful outlets through world-building and dystopian immersions, such as Pelnekar's active engagement in online gaming communities while pursuing a medical degree. Their need and desire for, and openness to, confronting alternative worlds was thus arguably already in play before we began.

Lysgaard, Bengtsson and Laugesen's (2019: 63–83) third and final response pattern, "death," as in death of the subject in favor of an intersubjective sense of self (Froebus 2019; Harman 2018; Lysgaard, Bengtsson & Froebus 2020; Morton 2013), did not clearly emerge, and it is worth pausing to consider why this was the case. As the instructor, I made multiple, overt invitations to creative thinking about posthuman kin-making in both assigned texts and discussions that were not taken up by the students. While in one case thinking on nuclear radiation yielded some overtures to mutants (Yeung; Stawkowski 2016), in others, facing hyperobjects conjured more centrally humanistic social sensibilities about solidarity, vulnerability, and oppression (Pelnekar; Venkatraman), and intimacy with a non-human other only occurred behind glass traveling at 60 mph (Okin). The students did effectively capture, however, the "weird architecture" of the Anthropocene (Shin 2022). For example, they richly describe the way that humans can irreparably alter eternity (past and future) by

violating sacred material symbols (Pelnekar), and they explore the out-of-place materialities of natural disasters (Venkatraman) and radiation (Yeung).

The students' interests in and approaches to the writings of H.P. Lovecraft in the course of their work helps to explain these distinctions. They were all already familiar with Lovecraft prior to fall 2022 but they wanted to re-examine him in the course of our time together, specifically the co-occurrence of bigotry and techno-scientific reactionism in Lovecraft's works. At the outset, they were resistant to accepting Lovecraft's imaginings of a horrifying world as a model for creative exploration because they saw his fiction as inseparable from his racism, sexism, antisemitism, and misunderstandings of emerging science. Instead, they were adamant that this synthesis in Lovecraftian literature created an imperative for them to distinguish the fictive from the real—that Lovecraft's fantasy fears of a radical alterity prefigured real alienation through its influence on pop culture, thereby contributing to the material horror in which we now live.

One of the things the students highlighted about Lovecraft was his merger of irrational fears of racial otherness with fears and misunderstandings of 20th century scientific advances, in particular his fears of non-Euclidean geometry and light outside the visible spectrum (specifically, in 'The Call of Cthulhu' and "The Colour Out of Space'). In highlighting the merger of these fears, the students remind us that Lovecraft's horror is one in which the metastasis of global death is brought about by the penetration of other beings' otherworldly science into white, orderly spaces. Perhaps not surprisingly, this all female-identifying group of students at a STEM university, most of whom are from marginal racial or ethnic backgrounds, perceived these boundaries as irreconcilably false and it led them to reject fantasy fiction as a viable model for their writing.[3] Thus, in our discussions they explicitly voiced a pursuit of alternative discourses to convey real human experiences and accurate descriptions of techno-scientific realities. This is why the narratives they produced (which they were free to revise and take in new directions following the initial class prompt) explicitly avoid speculative fiction despite their past experiences and interests in this genre. In all four cases, the students instead pursued writing that is strongly rooted in real personal experiences that document their reactions and thinking strategies for living within a present and unknowable future. A shared conviction is that the outcomes are indeterminate, and therefore, the complex conditions they face are inadequately comprehended by fictional writing (e.g., Yeung calls out the limits to stories as means to understand war and environmental harm; Pelnekar equates Lovecraft with denialism and simplistic techno-fixes; and Pelnekar and Okin trade dystopian literature in favor of real human stories full of hypocrisy, contradictions, and emotional detachments from nature).

The order of presentation was important to the students, and one can observe that they trace a trajectory of themes, from terror (Yeung) to existential dread (Pelnekar), to solidarity (Venkatraman) to intimacy (Okin). Read in this way, as a group, the students present somewhat like a

roadmap that points towards their emerging adaptive strengths or strategies. Specifically, Okin's final treatise on intimacy interacts with the others in sequence—it is the end product of facing real, horrible things (Yeung) and of being victimized by a moment in time that can, in an instant, corrupt something sacred forever (Pelnekar) and leave you huddled on the floor with your loved ones (Venkatraman), while the storybook background is blown away and blows you apart from one another (Okin). The students' answer was to end the course with a longing and a commitment to stay together. Not necessarily staying with the trouble (Haraway 2016), but more humanistically staying with one another (which was ultimately addressed through their establishment of a post-course social group). By the end of the course, the students were not willing to concede an intersubjective self, but rather I believe they were enacting an adaptive strategy to planetary crisis that this particular group of students may have already keenly developed in recent times past. That is, they were seeking a "pod" in response to dark ecologies and weird realities that force them into social distance, not unlike the responses they have learned in the last several years in higher education settings amidst a global pandemic (Rabadi-Raol 2021).[4]

Future Directions
Instead of the transformational emergence of a concept of intersubjective self in relation to non-human others or an exploration of speculative futures as otherworldly beings, the work we completed in the classroom in spring 2023 suggests that at least some of today's students may initiate a different kind of response to the Anthropocene. Rather than tracking through denial, insanity, and death (Lysgaard, Bengtsson & Laugesen 2019), they seem to draw on recently developed strategies that help them to accept certain breakdowns in institutions and in the scale of social unit organization when a hyperobject is encountered. In response, they form a new grouping at the level of the pod—a small social group that can survive, thrive, and love while they are, as Venkatraman captures it, 'scrunched together playing Uno on the tiled basement floor during tornado season.' In reflecting on the classroom practices we enacted, the students explicitly communicated that it was valuable for them to engage and critically analyze creative imaginaries, which helped them not only to understand the world of hyperobjects but also to draw down the immense scale of these terrifying things to something (in their words) 'chewable.' They noted that their ordering of the narratives reflects this, as each narrative in turn describes and encapsulates the hyperobject into progressively more localized forms, presenting increasingly clear opportunities for them to perceive and engage it, and thus, to adapt to it. Lastly, the students emphasized that, while this aspect of the creative endeavor was a useful process for them, it should not be mistaken for a true reckoning with the past, with an honest pursuit of the promises of techno-science that identifies its exact utilities and its dangers, or with an accurate accounting of the very real material terrors with which we now co-exist and their uneven distribution

among groups. There is a limit to what fiction can do for us in the contexts of the Anthropocene.

Following these students' lead, where does our Anthropocene pedagogical practice go next? Based on the above outcomes, it will likely be supportive to have students continue to connect in small groups and to retain some of the opportunities for creative thinking about hyperobjects. One aspect that was not addressed in the current study, and which is emphasized in Anthropocene educational literature on *Bildung* and place-making, is the development of embodied skill. Working directly with the material world of hyperobjects to experience the vitality of non-human agents is widely seen as an important facet of this new education and, in particular, it is emphasized as a central pathway to adaptation. One avenue may be to follow on the students' identifications of the hyperobject in narrative space with instructor-guided practices that allow them to seek these entities out in real space/time and to document their presence in the material world. Here, we might employ the methods of contemporary archeology for the further development of classroom practices, as it is a discipline which offers tangible practices for the spatial and temporal documentation of human–material relations in the Anthropocene (González-Ruibal 2018). We look forward to sharing more about this work as it unfolds in future courses.

Notes
[1] This is not to gainsay the already vast array of theories and practices for climate change education (see, for example, Leichenko & O'Brien 2019 for an accessible overview and Leichenko, Gram-Hanssen & O'Brien 2022 for one example of an implementable classroom practice). The intent of these, however, trends towards solutions-based approaches, and peculiarly, these have a tendency to be capitalized upon (e.g., https://www.cchallenge.no/; https://centerforintegralwisdom.org/). "Dark pedagogy," as outlined in the work of authors cited herein, presents an alternative approach based in object-oriented ontology, posthumanism, and post-structuralist and metamodernist philosophies focused on the affective responses of the learner to the Anthropocene.

[2] Though Chernobyl was caused by a nuclear power plant, nuclear energy is intrinsically tied to its war counterpart.

[3] See Marshall (2021), Sederholm and Weinstock (2016), and Steadman (2024) for recent debates on Lovecraft's racism. What is novel about the students' interpretations is that they directly tie his racial fears to his techno-scientific ones to reject both simultaneously and in the same way. That is, knowing that realities such as non-Euclidean geometry have always been present and operating, and that this is not to be feared but rather studied, understood, and utilized, it follows that human diversity does not present segregated other worlds of being, either. Rather, human diversity has also always been present and operating *en masse*, and requires no fear or creative re-integration, but only study, critique, and application.

[4] Though addressing a much younger group of students, Rabadi-Raol (2021) provides an especially evocative example of how the social pod works as a mechanism for facing and slowly integrating with a threatening ecology. In this case, creative and playful pursuits were central to the students' comprehension of a hyperobject (the Covid-19 virus) and supported their development of strategies for response and adaptation. Among these strategies, Rabadi-Raol's (2021) students engaged in emergent, social time-structuring behaviors that regulated their interactions in uncertain times and in response to the absence of formal institutional structures, while the formation of the pod itself forced them to confront issues of social privilege and marginalization.

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Competing Interests

The authors have no competing interests to declare.

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