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Unthinking Oil Together: Developing a Collaborative and Transdisciplinary Course to Imagine a Post-Carbon Future

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Abstract: While it is widely recognized that effectively addressing climate change requires a drastic reduction in carbon emissions, we nonetheless find ourselves in an impasse, unable to imagine nor bring about a post-carbon future. This is, in part, because climate change is not only a technological problem, but also a philosophical, cultural, and aesthetic problem—an existential crisis of thinking, or perhaps *unthinking.* To *unthink* the carbon regime, higher education must forge new thought models and educational platforms that operate in solidarity across disciplinary scales and territories. This report documents a collaborative course development process for a grant-funded transdisciplinary course entitled: *Unthinking Oil: Public Architecture and the Post-Carbon Imaginary.* In particular, we discuss a virtual *Unthinking Oil Workshop* held with students and faculty from a range of disciplines. The workshop provoked broad discussions regarding the role of higher education in addressing the many entanglements between climate change, society, and the built environment.

Keywords: Climate Change, Ecology, Architecture, Sociology, Collaborative Pedagogy, Unthinking Oil, Carbon

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Introduction

It is widely recognized that in order to mitigate and adapt to climate change, we must reduce carbon emissions. The future of the planet lies with our ability—and our socio-political will—to control, if not outright eliminate, the amount of carbon released into our atmosphere. But how do we eliminate carbon in a world drowning in oil? And what role does higher education play in an age when climate change demands such a fundamental shift in our relationship to energy, our environmental politics, and our systems of knowledge? At higher education institutions worldwide, the challenge falls on professors in disciplines including the sciences, humanities, and design to prepare their students to tackle this challenge.

Despite the overwhelming scientific consensus about the existence of climate change, we find ourselves in an impasse, unable (or unwilling) to imagine, let alone bring about, a post-carbon future. This is because climate change is not simply a techno-economic problem to *solve* but, more fundamentally, constitutes an existential crisis of thought and being. Climate change, in other words, cuts across the sciences and humanities, disrupting the perceived differences between nature and culture that underlie the normative structures of higher education. As a compounded scientific, philosophical, socio-political, health, and aesthetic problem, climate change and our dependence on a carbon-based economy knows no disciplinary boundaries and cannot be understood, known, or resisted through single disciplinary measures alone.

In response to the complex web of climate change's causes and effects, higher education must equip students and faculty with the transdisciplinary tools and critical thinking abilities necessary to confront what Timothy Morton calls "The End of the World" (2014, p. 99). Simply put, if we are preparing students to anticipate a reality that is already here, or to single handedly "fix" the most systemically wicked (or, if you wish, wickedly systemic) issue facing humanity today, then we are sorely missing the point. We need contemporary thought models and educational platforms that build upon traditional ecological knowledge and operate in solidarity across disciplinary scales and territories (see, Nevárez, 2018). In other words, we need to rethink *how* we know and confront climate change. Only once we do so—once we understand and teach the causes and consequences of this environmental crisis collaboratively—can we expect our students to develop effective strategies for mitigating and adapting to a changing climate.

In what follows, we report on the collaborative course development process for a transdisciplinary course entitled: *Unthinking Oil: Public Architecture and the Post-Carbon Imaginary* that was awarded the 2020 Course Development Prize in Architecture, Climate Change, and Society—sponsored by the Association of Collegiate Schools of Architecture (ACSA) and Columbia University's Temple Hoyne Buell Center for the Study of American Architecture (2020 Course Development Prize, 2020). The course aims to intersect architecture, sociology, and environmental science with the emerging field of energy humanities in order to speculate openly and collectively on the broad political and aesthetic dimensions of climate change. It will be taught in collaboration between Kean University's School of Public Architecture, School of Environmental and Sustainability Studies, School of Social Sciences, and the Human Rights Institute (HRI) in Spring 2022. We present our first steps of the course development here with hopes of inspiring our peers from other higher education institutions to

begin laying a transdisciplinary framework upon which we can all build a stronger educational system together.

Unthinking Oil and Addressing Climate Change from a Transdisciplinary Perspective

The guiding premise of the course is that climate change—while a real and significant threat—is symptomatic of a deeper crisis of thought that requires transdisciplinary modes of critical analysis to unmask. While we live in fossil-fueled, petrocultural reality, that reality is not a mere techno-economic problem to be solved by mere techno-economic solutions; rather it is a deep cultural problem that entwines our current social practices and energy uses with politically motivated representations and narratives about nature, modernity, and the environment. Petroculture operates in plain sight—post-industrial society is an oil society through and through. Climate change, then, is a symptom of a global carbon regime that permeates all aspects of our physical, material, intellectual, and affective lives. Change can only come by *unthinking* this regime and its infrastructures, by constructing new imaginaries of a post-carbon world deeper attuned to the earth and its life systems. Paradoxically, *unthinking* requires deep thought.

But imagining a post-carbon society—that is, *unthinking* petromodernity and its global infrastructures—requires a radical realism that cuts through the hegemonic webs of power that shape collective life. How can architecture, sociology, and environmental science (among other disciplines) join forces to unmask the complex geopolitical forces, socio-political relations, and contradictory histories that shape, and are shaped by, climate change? How might we reimagine these fields (and contemporary higher education practices) as we confront an energy and environmental crisis that is bigger than any single discipline? For that matter, at what scales do these fields and their associated modes of inquiry, analysis, and design intersect with climate change? While there are no simple answers, we will start with the premise that climate change is not a Western techno-economic problem, but rather a global existential problem that pervades all aspects of planetary life around the historical, aesthetic, and political dynamics between and among industrial capitalism, lifestyle, and fossil fuels. In order to untangle these complex dynamics, we need more robust transdisciplinary modes of analysis. We need new ways to connect the dots in order to *unthink* the carbon regime.

With this in mind, the course aims to: 1) Examine the historical conditions of oil society; How did we get here and what are the socio-cultural, political, and aesthetic registers through which fossil fuels shape our values, beliefs, habits, and practices? 2) Examine the infrastructures and apparatuses of petroculture; At what scales does architecture intersect with these? How might architecture, urban sociology, and environmental science make visible and reconfigure their scales and territories of power? And what new forms of public practice (architectural, scientific, sociological) can emerge in the process? 3) Speculate a post-carbon world; what processes and transformations trigger the transition to a post-carbon society? What would society look like today without fossil fuels and their infrastructures? After being developed and taught collaboratively between faculty partners in architecture, urban sociology, and environmental science, the course will culminate with a public exhibition and symposium at Kean University's Human Rights Institute.

Participatory Course Development: The Unthinking Oil Public Workshop

This report outlines an important component of our course development process: a virtual *Unthinking Oil Workshop* with students and faculty from across the university. The aim of the workshop was to provoke broad discussions regarding the role of higher education in addressing the many entanglements between climate change, society, and the built environment. Faculty colleagues and students were invited to participate by virtue of their concern for and foundational knowledge about climate change and their experience in collaborating with others from different fields of study. The workshop took place over Zoom on Friday, January 29, 2021 with 17 participants, 9 of which were students from different disciplines. Collectively, we addressed the following overarching questions: Is there an overall feeling that we are addressing 21st century problems with 20th century tools? Is higher education adapting to the *realities* of climate change as something no longer to "believe in" but rather to *know* and do something about? What and how can we learn from each other in order to address climate change in solidarity—across academic disciplines, educational platforms, and social practices?

The workshop was an opportunity for us to pause, to think a bit slower about the meaning and agency of higher education in a warming planet and how we might address climate change together as educators, students, scientists, historians, writers, designers, professionals, and global citizens, both inside and outside of the classroom. It was also an opportunity to break down disciplinary silos (both real and perceived) and discuss ways of synthesizing historically separate fields in support of Kean University's public mission to "prepare students to think critically, creatively and globally; to adapt to changing social, economic, and technological environments; and to serve as active and contributing members of their communities." Despite the varied cultural, economic, and disciplinary backgrounds of the participants, all were united in the conviction that a public university must be public not by name alone, but by action and by active imagination. Climate change affects us all, albeit asymmetrically.

After a brief introduction, the workshop proceeded as three breakout sessions, each led by a faculty moderator and animated by a set of questions that were circulated among the participants two weeks in advance. Within these smaller groups, the faculty moderator documented observations, ideas, and discussion points so that they could be shared among the larger group in a post-breakout debriefing session. The discussion topics and findings of each breakout session are presented briefly below.

The first session, moderated by Architecture Professor Gabriel Fuentes, focused on *Public Space, Energy, and Climate Change* and brought together sociology, architecture, and sustainability science students with a building technologist and a design professor to address questions of access and inclusion within a higher education system largely built on disciplinary specialization and *pay-to-know* knowledge politics. Accepting the claim that "in the 21st century, all politics are climate politics," (Aronoff, et al.) the session questioned the definition and role of "public" space in a digitized and mediated world. Who, for example, do we include/exclude when we use the term "public," especially within a neoliberal world system that privatizes natural resources while externalizing climate catastrophe? Can there be an environmental public for our built environment(s)? If so, who speaks for it? And who is marginalized or voiceless in our public imaginaries, human or otherwise?

These conversations opened up unanticipated visions for what the university generally, and our course specifically, might be *for* the public (as opposed to what it might be *to* the public). For example, rather than simply teach others what we know about climate change, we discussed ways that the course might empower students to become environmental ambassadors to their communities. One idea for doing this was to redesign the classroom into a public forum that could facilitate and model the exchange of ideas, lived experiences, and perspectives. Another idea was to consider an intersection of art, eco-science, and sociology capable of revealing—or giving voice to—the repressed material traces of environmental injustice by mapping vulnerable areas in the community. In both cases, the university classroom was recast as a "public platform for structured collective listening" capable of bringing matters of environmental public concern (or public environmental) into the disciplinary spaces often closed to the everyday spaces of the wider world. Together, we discovered that "unthinking" requires the humility to decenter ourselves as privileged guardians of knowledge; to listen more and to speak less. Simultaneously, we discussed the need to recognize the existing knowledge and leadership already enacted by our students.

A second session on *Uniting Science and Technology in the Classroom and Beyond*, moderated by Professor and Ecologist Dr. Daniela Shebitz, brought together a graduate architecture student, a sustainability science student, and an Economics Professor to discuss the opportunities and limitations of science and technology in preparing students for the cultural and energy transitions necessary to address climate change. Overarching questions included: How can we encourage and prepare students to address the technological advances necessary to address climate change? How do we respectfully integrate different cultural perspectives and knowledge as we work towards sustainable solutions to fuel our future? Key throughout the conversation was environmental, social, and technological (in)justice during what one participant referred to as "the revenge of deep history"—an age where both the speed of technology and the empirical focus of scientific methods are often at odds with the slow, yet increasingly present, violence of climate change in the aftermath of colonialism and extractive capitalism. (see Nixon, 2011).

Within this broader observation, some participants wondered whether we have "over-technologized" our approach to climate change, becoming too dependent upon technology and increasingly separate from nature as a result (something that, as one participant brought out, was anathema to the Indigenous people that once occupied the land on which our university sits). Others wondered whether more aggressive technological development would allow society to evolve more sustainably. Ultimately, the participants settled on a "strategic realism" (see, Szeman, 2007) that lies somewhere in the middle: because we, as a society, are not likely to move beyond our dependence on technology, we should subsidize technological advancement that listens to and learns from the Earth as opposed to dominating, extracting, and profiting from it. One suggestion was to reimagine the very technologies that contributed to climate change as "engines of their own reversal." While all acknowledged that this was easier said than done, the group agreed that addressing climate change demands socio-cultural change alongside techno-economic change. You cannot have one without the other.

This discussion also reinforced the need to integrate scientific disciplines instead of thinking of them as separate from one another (i.e. biology, chemistry, physics, and

environmental science) or even from other fields (i.e. architecture, sociology, and economics). For example, a theme such as nutrient cycling and food webs—usually within the domain of environmental science—can be connected to architecture and urban planning by rethinking agricultural inputs/outputs and food waste as design problems imbued with social, cultural, economic and aesthetic dimensions. In this sense, the science lab, the forest, and the public plaza are closer to each other than our disciplinary spaces let on. And ecology is a form of *thinking* and *practicing* interconnectedness.

A third session on *Society and Climate Change in the Digitized Curriculum*, moderated by Professor and Urban Sociologist Dr. Julia Nevárez, brought together an Architectural Historian, two architecture students (one a second-year graduate student, the other a first year undergraduate student), and a recent sociology graduate to discuss the following questions: In what ways can a co-evolution between humans and non-humans be translated into digital pedagogies? How can a more supportive and harmonious relationship with our built and natural environments facilitate pedagogical change toward a post-oil imaginary? What kinds of challenges and advantages do digital platforms present when teaching and learning about the relationship between people and their natural and built environments? How can we extend our role as digital prosumers—that is, as hybrid consumers *and* producers who add content to digital platforms while inhabiting physical space—to include concerns about post-oil environments?

This session brought to light the simultaneous *need for* and *challenges of* situated research within a post-pandemic world of hybrid digital/physical pedagogical models. Interestingly, the participants drew strong connections between these hybrid pedagogies and the social/environment injustices exacerbated by the Covid-19 pandemic: Just as our most vulnerable communities (mostly African-American, Native American, and Latinx) were marginalized from the health infrastructures needed to combat the coronavirus, might we risk overlooking or marginalizing these same communities from the pedagogico-digital infrastructures necessary to know and discuss climate change? And aren't these same communities also bearing the brunt of global energy injustice and climate crisis—oil pipelines running through Indigenous lands in North Dakota, Superfund sites in the Black rural south and the post-industrial Midwest, a dysfunctional (and privatized) electricity grid in Texas, polluted drinking water in Flint, Michigan, and the devastation (and dismal political failures) of Hurricane Maria in Puerto Rico, to name a few? In this sense, Covid-19, racial justice, and climate change share deeply entangled sociological dimensions worth teasing out through our course, particularly through a series of student-led case studies. Such a model of engaged scholarship can equip students with an active civic capacity to initiate change as education bridges into activism.

Equally important was the observation that *global decarbonization* requires *energy democratization.* By extension, processes of energy democratization open up avenues to explore the intersection of space-making and community-building; that is, opportunities to intersect the architectural design disciplines (building design, preservation/adaptive reuse, landscape architecture, urban design, and community planning) with urban sociology. Imagining a post-carbon future requires not only unthinking the carbon regime, also redefining our normative ideas about how we live together.

Conclusion

Imagining a post-carbon future requires a comprehensive approach to address the complex infrastructural, material, and cultural systems on which our current petro-reality is built and sustained. Furthermore, translating common concerns into a language of collective discovery also requires an open attitude to find common ground, to ask clarifying questions, and to encourage participation. To that end, the transdisciplinary pedagogical approach outlined in this report—while not conclusive or comprehensive—challenges the disciplinary boundaries that structure teaching and learning within higher education in an attempt to recondition how we know and adapt to climate change. As part of a collaborative course development process, the *Unthinking Oil Workshop* brought together faculty and students from across disciplines in a safe virtual environment in order to orchestrate critical and reflective conversations that were inclusive, respectful, and open to healthy debate. The distributed knowledge produced in this forum provided a fertile ground to consider the different situated knowledge bases of the participants as well as our own biases, assumptions, and perspectives.

We learned that the workshop model can be an invaluable tool to inform pedagogy in higher education by providing structure and direction to collaborative course offerings. Our next step is to structure the course in a way that effectively integrates the lessons learned from the workshop and to coordinate projects and assignments that bring together different disciplinary perspectives and modes of analysis to bear on climate change and its related systemic problems (or vice versa). Our hope is that by collectively designing and teaching Unthinking Oil, we will not only become stronger as individuals and as a university, but that the course can serve as a template for similar educational structures to be created and carried out at other higher education institutions.

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