

Infrastructural Performativity and Necrogeologies

Changing Climates at an Intermediate Scale

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To see anthropogenic climate change as a web of dynamic processes rather than a singular, static entity (that may or may not “arrive”) is a precursor to creating more just and survivable futures. This web does not only consist of prevailing weather phenomena (*climate*), but also of events that influence *change*, especially patterns of mass human behavior that are organized around—and often dependent upon—the persistent materiality of infrastructure. Understanding infrastructure as a performative process, in turn, illuminates ways to intervene in the reproduction of extractive racialized capitalism and the extreme ecological imbalances created in its wake.

In contrast to seeing climate change as a dynamic web, foundational discussions of climate change in the environmental humanities focus our attention on the supposed disconnect between the individual and the global. Scholars like Timothy Morton and Dipesh Chakrabarty, for example,

have argued that climate change escapes comprehension and phenomenological experience because of its spatial and temporal vastness relative to “the human scale,” where the human is generally figured as one individual (see Morton 2013:1; Chakrabarty 2009). In elaborating this discourse, environmental humanists, artists, and activists (as well as their detractors) often imagine climate politics on either an atomized scale (e.g., individual consumer choices) or a totalizing scale (e.g., global governance, a dystopic or utopic earth “after” climate change). As scholarly and political publics, we too rarely venture beyond these dichotomized imaginaries of “place versus planet” to grapple with climate change in its intermediate phases, those processes that move matter and energy between the individual and the global, the instant and the epoch, the sensory and the ideological. I call for a centering of connective processes (rather than ontological differences and incompatibilities) in climate change discourse. More specifically, I reconceptualize infrastructure as performative, a formation (created through normative, embodied behaviors) that links place and planet, ideological and material ecologies, individuals and collectives, and human and other-than-human beings. Given the expertise of theatre and performance studies scholars in understanding complex community interactions, I propose that *environmental performance studies* might be particularly well positioned to analyze the many manifestations and mitigations of climate change that occur at an intermediate scale. Focusing upon processes that materialize as infrastructure, performance researchers might disrupt the stultifying scalar binaries common to climate imaginaries and help reshape infrastructural and environmental futures.

My motivation to rethink infrastructure as performance derived from a visit to Iqaluit, the sub-Arctic capital city of the Inuit cogoverned territory of Nunavut, Canada, in September and October of 2021. Immediately after leaving Iqaluit, I learned that the tap water the city relied upon (and that I had also relied upon during that visit) had been contaminated for over a week by petroleum hydrocarbons—that is, fuel molecules (Ritchot 2021). The Department of Health officials confirmed the presence of fuel chemicals known as “F2 hydrocarbons” (a category that includes diesel and kerosene) in the city water supply, in some cases at levels “more than a million times higher than what Canada’s drinking water guidelines consider to be safe” (Beers 2021, 2022). A do-not-drink order was placed on the water on 12 October and was not lifted until 10 December 2021. Iqaluit was in an official “state of emergency” for two months, during which many of the roughly 9,000 residents had to rely on bottled water or water collected from the Sylvia Grinnell River (Wright 2021).

In the immediate aftermath of the realization that the water was contaminated, several city officials reasoned that the issue was most likely a consequence of climate change. Specifically, officials came to suspect that climate change–related thawing and melting of a growing “active layer,” in what had long been permafrost, had cracked an underground holding tank within Iqaluit’s water treatment plant (Beers 2021).¹ While this specific case is still being investigated, City Councilor Kyle Sheppard summarized the long-term difficulties climate change has caused Iqaluit: “All of Iqaluit’s underground infrastructure was built in permafrost [...] that has since

Figure 1. (previous page) A view of city infrastructure and streams near Qikiqtani General Hospital, Iqaluit, Nunavut, September 2021. (Photo by Clara Wilch)

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1. Permafrost is geologically defined as ground that is continuously below 0° Celsius for two or more years (see Zhang et al. 1999:134).

receded, leaving infrastructure in the active layer wreaking havoc” (in Wright 2021). Although the acuity of the October 2021 water crisis captured Canada’s national attention, water-related issues are recurrent in Iqaluit. Journalist Jackie McKay summarized the longer history of water insecurity in Iqaluit: “every single year, we’re [...] dangerously close to another water emergency [of] not having enough potable water. We are a capital city in Canada that has been in a water emergency for several years” (in Abdelmahmoud et al. 2021).

Indeed, this water insecurity is systemic, indicative of the differential investment and environmental burdening that predominately Inuit Nunavut and other Indigenous communities experience relative to much of Canada (see Warburton 2021). A parallel gap exists in the US, separating the average environmental conditions of lower-income communities and communities of color from those enjoyed by wealthier, whiter communities (Roberts and Toffolon-Weiss 2001). The water crisis in Iqaluit in which my own body was briefly intertwined had been overdetermined by racialized and colonially informed political, economic, and climatic factors. Far from being an anomaly that can be resolved in isolation, this contamination and two-month state of emergency was one (major) inflection point in the life of a foundational and troubled infrastructure.

Infrastructure is a locus of increasing political and academic interest, even while it often connotes the humdrum, the nonevent. Infrastructure names a society’s public works, including roads, bridges, electric grids, waste, or water systems, systems that are often publicly owned, government constructed, and that concentrate and connect human life across municipalities, regions, and nations. The Latin root “infra” means “below, beneath, or within,” and infrastructure is foundational both physically and functionally, the often unseen or unnoticed elements of a city that form the condition of possibility for quotidian life upon which “normalcy” is premised. Focusing on infrastructure recalls for me the mix of amazement and discomfort I’ve felt while studying human physiology and realizing how much is being actively, incessantly done by my organs to allow for a sense of bodily health and continuity.

As with the human digestive system’s complex and interdependent enmeshment with bacterial life (to continue the organ metaphor), infrastructure is a materialization of more-than-human relations with living and nonliving things. In a definition advanced by social scientists Nikhil Anand, Akhil Gupta, and Hannah Appel (2018), infrastructure gathers human bodies and activities, enabling and perpetuating social cultures that in turn maintain and replicate infrastructure. At the same time, this process reproduces certain modes of more-than-human relationality, including economic and (relatedly) ecological norms—that is to say, in the dominant North American context, resource extractivism and racialized capitalism. Indeed, day-to-day functionality is inclusive of, if not tantamount to, economic concerns (especially ongoing economic growth) in the terms of contemporary US or Canadian politics.²

What the relegation to the temporal “everyday” and spatial “background” disguises is that infrastructure is imbricated in extraction and dumping practices that transform certain ecosystems into sites of resource scarcity, pollution, and uninhabitability. Thus, infrastructure is essential to creating what I call *necrogeologies*. Necrogeology is a riff on Achille Mbembe’s theorization of “necropolitics,” itself a 21st-century reconsideration of Foucauldian biopolitics that places emphasis not on the control of life but on the capacity to determine “who is *disposable* and who is not” and to administer death (Mbembe 2019:80); and an understanding of “geology” as the structure, composition, and history of earth. Necrogeologies name the places marked for extreme deformation, multispecies death, and multigenerational barrenness to allow for economic growth and biological flourishing elsewhere.³

2. The primacy of economic imperatives has been evidenced in much rhetoric and policy surrounding the ongoing Covid-19 pandemic.

3. Attention to materiality, land, and geologic histories (or the long memories of places) differentiates *necrogeologies* from Mbembe’s own term “death-worlds,” which names “social existence in which vast populations are subjected to living conditions that confer upon them the status of the living dead” (2019:40).



Figure 2. A walk across the tundra around dusk. Iqaluit, Nunavut, September 2021. (Photo by Clara Wilch)

To think in terms of necrogeologies is to acknowledge the long memories of human-driven biogeochemical activities that lands and waters retain. Necrogeologies include superfund sites, landfills, open-pit mineral mines, coal mines, and bodies of toxic water. The forms and quantities of necrogeologies will continue to proliferate under the conditions of ongoing, rapid climate change.

Despite their condemnation by necropolitical corporations and governments, necrogeologies are seldom lifeless. For decades, environmental justice movements have championed the rights of human beings whose residences and/or workplaces are allocated as necrogeologies by polluting corporations and governments, largely the poor and populations of color who are forced to negotiate the extreme toxicity of these places, and whose mobility (including a capacity to begin living elsewhere) is limited by the systemic transgenerational denial or theft of resources.⁴ Necrogeologies may be part of infrastructure (toxic pipelines), they may be

produced to support the functioning of infrastructure (mines), or they may be produced by the functioning infrastructure (polluted waters). In most cases, necrogeologies are enabled by infrastructure in that roads, railways, ports, and airports connect sites of extraction and pollution at a distance from sites marked for resource use and afforded clean air and water (environmental “standards” that are unequally distributed among populations).

While infrastructure can enable necrogeologies, infrastructure is also crucially constitutive of balanced, sustainable, and just multispecies communities (and possible futures) in which the status quo is not based in extractive capitalism and ecologies are not dominantly shaped by economic valuations of human and nonhuman life. Jordan Kinder describes one alternative in the work of Indigenous Canadian energy justice activists Tiny House Warriors and Sacred Earth Solar to create mobile, solar-powered infrastructure for Secwépemc communities whose territory was targeted for oil pipeline expansion. Kinder notes the significance of infrastructural reimagining: “to fuel social reproduction through good energetic relations is to recognize the determinant role that infrastructure plays in shaping social relations” (2021:70). Kinder’s argument that physical infrastructure not only influences but “determines” social relations

4. Limited mobility is often also related to the militarization of borders, as Mbembe elaborates throughout *Necropolitics* (2019).

recalls Louis Althusser's influential use of "infrastructure" as a metaphoric descriptor for a society's "economic base" (e.g., capitalism, communism) that determines the society's superstructure (1971). Althusser further argued that the superstructure is used to reproduce the labor power necessary to capitalist regimes by maintaining and naturalizing relations of exploitation. Kinder's understanding is less deterministic and unidirectional than the hierarchy described by Althusser, in that physical infrastructure can be reconceived in ways that reshape social relations. Relatedly, Anand et al. highlight the ongoing, processual flux of infrastructure in relation to human projects and power: "rather than being a singular thing, infrastructure is instead an articulation of materialities with institutional actors, legal regimes, policies, and knowledge practices that is constantly in formation across space and time. [Infrastructures are] brought into being through compromised, improved projects of maintenance and repair" (2018:12).

In other words, infrastructure is performative. It is performative, first, in the sense advanced by Judith Butler: infrastructure is an ongoing process constituted by repeated behavior, especially "projects of maintenance and repair" that are "constantly in formation," rather than a reified object of predetermined form. As in Butler's theorization of gender performativity, infrastructure is produced by and produces socially enforced power dynamics (1988:528). The performativity of infrastructure is an ongoing, ideologically inflected process that inures in physical forms like pipelines, roads, or grids. Infrastructure is also performative in the sense advanced by Richard Schechner, in that it can be readily understood "as' performance," a physical instantiation of a collective performance of embodied, restored behaviors including, for example, commuting, consuming water, or disposing of trash (2013:29, 123). Infrastructure is a manifestation of choreographic negotiations between nonhuman materials like water, energy, waste, concrete, metals, and plastics that includes biogeochemical processes of change (vapor intrusion, rusting, molding, erosion, or weathering) and the maintenance and advancement of material and conceptual projects by humans. Humans whose physical practices performatively produce infrastructure include policy makers, construction workers, engineers, technicians, accountants, as well as all of us who depend upon infrastructure in ways that regulate and shape its functioning. For example, it was nonexpert residents of Iqaluit who detected hydrocarbons in the water by smell and taste and then used social media to agitate for testing and changes to the city's water infrastructure. In reshaping collective infrastructural performances, ecological relations might be reconceived, and more just climate futures might be realized. Indeed, such performative reinventions are already being imagined and practiced. The conversion of buildings to rooftop solar power, the Biden administration's prioritization of recycling within the legal category (and funding domain) of infrastructure, and the creation of neighborhood water harvesting systems are examples of bodily performatives or speech acts that seek to simultaneously change elements of physical infrastructure and reinforce nondominant ecological/economic relations. Webs of more-than-human relationships exist in a loop with infrastructure, and they are malleable and mutually influenced.

Infrastructure names the material performances through which ecological relationships and power are negotiated between historic human and other-than-human bodies at a communal scale, for good and for ill. This communal scale exists intermediate to the individual/local and the species/global imaginaries that often preoccupy climate discourse, even while it links people to one another and to international networks. In dominant North American governments, the dynamics of human mastery over endless and dutifully flexible resources are instantiated, normalized, and maintained through infrastructure, often perpetuating extractive capitalist relationships to the nonhuman world. Attention to performativity illuminates the spaces of becoming that exist among reified status quos as opportunities to do otherwise. Awareness of infrastructural performativity exposes the lie that infrastructure as it has been built is permanent, normal, and necessary. Infrastructure is an interface through which human and nonhuman bodies are interpolated as expendable resources or publics, and it is through performative reinventions of infrastructure that these bodies might be valued differently and treated more ethically in the future.

Even in wealthier enclaves, the rupture of infrastructure has become more common and further entangled with earth's rapidly changing climate. Within this fray, performance researchers and makers bring skills in facilitating collaborative and communicative practices and can help imagine and create infrastructures that nurture reciprocal, healing relations. This is not merely a hopeful aspiration, it's a survival tactic; in the processes of repair increasingly demanded of our communities, we might performatively cocreate infrastructures that will not replicate the ecological and economic relationships of more-than-human systems that have failed.

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