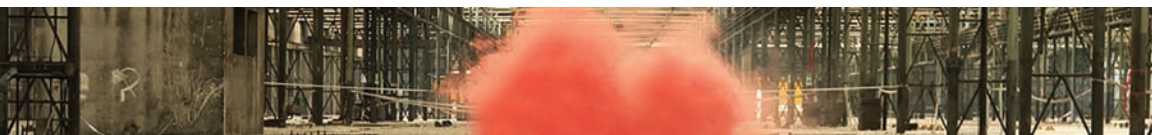


Openings and Retrospectives



ALTERLIFE AND DECOLONIAL CHEMICAL RELATIONS

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It has been raining all day and into the warm winter night in downtown Toronto—Tkaronto in Mohawk. The water splashes off the office towers of Bay Street (Canada's Wall Street), is collected by a storm sewer system overtaking buried streams, and then washes out into the vastness of Lake Ontario. Office towers and other urban surfaces are covered in a thin, greasy film that attracts persistent organic pollutants like polychlorinated biphenyls (PCBs; [Simpson et al. 2006](#)). These travel in global circulations of particulate clouds, encountering office towers whose oily films act like massive pollution-collection devices. The patter of droplets on urban glass rinses the PCBs into a chemically concentrated rainwash that returns them to the lake, a legacy dumping ground of PCBs from an era of midcentury industrial exuberance.

Lake Ontario is the last lake in the eastward flow of Great Lakes water. Each lake becomes more and more industrialized along the way, passing by Canada's petrochemical refining corridor, the (de)industrialized zone of Detroit, and the steel mills of Hamilton. The Great Lakes form the largest basin of fresh surface

water on the planet, holding some 84 percent of North America's fresh surface water. The lower Great Lakes lie in Anishinaabe and Haudenosaunee territories, severed in half by two settler nation-states, the United States and Canada. The water is not still; it is indifferent to borders, cycling through the atmosphere, splashing off office towers, and returning to nourish humans, animals, and plants. We, humans and nonhuman beings, the lake and the city, all depend on its many forms and movements (Todd 2017). More than this, we are part of the water. We are part of its tributaries. And, since the mid-twentieth century, we have become a part of PCBs too.

Analyzing urine, blood, and breastmilk, twenty-first-century global bio-monitoring studies have concluded that all people alive today contain PCBs within them (Stockholm Convention on Persistent Organic Pollutants 2009); industrially produced chemicals like PCBs have become a part of human living-being. The pollution of the water has joined the molecular fabric of our bodies. I can make statements like this only because of the work of an array of disciplines, such as toxicology, epigenomics, environmental chemistry, and so on, as well as due to decades of environmental justice community knowledge-making. The study of industrial chemicals compels a posture of working with and against technoscience.

Two technoscientific epistemic habits run through almost all the work materializing chemical exposures. The first habit involves portraying chemicals as discrete entities, as isolated molecules, often represented through abstract structural diagrams. Such diagrams are only ever *models* of chemicals, designed with engineering and industrial needs in mind (Hepler-Smith 2015). The worlds built with chemicals are imagined and systematized through this functionalist bent, which purposively pushes aside complex reactivity with living- and nonliving-being. The structural representation of discrete molecules—such as polychlorinated biphenyls—is built into the naming system used to describe them and the ways toxicology has historically studied them: one by one, as isolated entities of purely technical qualities without context. We have inherited a restrictive technical understanding of the nature of industrial chemicals from corporate forms of technoscience, as well as from a longer history of chemistry as an industrial discipline (Bensaude-Vincent and Stengers 1996). This confining sense of chemicals is built into the design of state environmental regulation in the United States and Canada, where industry lobbyists work hard to make sure that corporate-produced data is used to track and produce uncertainty about exposures. The extensive cloud of synthetic chemical relations, whether emitting from factories, extraction, infrastructures, or commodities, is externalized by capitalist ledger

books that structurally will not count side effects, fallouts, or discards. Today, this pervasive rendering of chemicals as disconnected functionalist molecules (as opposed to complex bundles of extensive relations) seems self-evident (Myers 2015). It is difficult to talk about chemicals in any other way, regardless of your politics. As a result, the infrastructure of chemical relations that surround and make us largely resides in the realm of the imperceptible (Murphy 2006). We might feel some of our chemical relations and the pain they cause, but the fullness of our chemical relations ends up being largely conjectural.

The second epistemic habit is shaped by the first. Because it is so rare for our chemical surround to be documented, technoscientific research that seeks to contest the presence of synthetic chemicals in the world tends to proceed by detecting and measuring the damage chemicals do to bodies. (Ethnography and the social sciences, more broadly, often seek to bear witness to the evidence of damage.) Focused on collecting the data of damage, much hegemonic North American environmental biomedical research surveils and pathologizes already dispossessed communities. It is hard to perceive the infrastructures of chemical violence in the world at the same time that research attends to molecular manifestations in bodies and communities already living in hostile conditions. Despite often antiracist intentions, this damage-based research has pernicious effects, placing the focus on chemical violence by virtue of rendering lives and landscapes as pathological. Such work tends to resuscitate racist, misogynist, and homophobic portraits of poor, Black, Indigenous, female, and queer lives and communities as damaged and doomed, as inhabiting irreparable states that are not just unwanted but less than fully human.

Refusing this economy of research, the Indigenous feminist scholar Eve Tuck (2009) has called for “suspending damage” as a refusal to participate in damage-based research that amplifies the burdens of settler-colonial and racist violence (see also Tuck and Yang 2013). This refusal constitutes a challenge to environmental justice habits. It marks an invitation to find other ways of shining critical light on the infernal entanglements of settler-colonial capitalism as expressed through chemical relations, and at the same time a call to direct creative energy toward decolonial possibilities.

How to refuse the chemical as an isolated entity and also not reenact body-centric damage narratives? In a posture of both collaboration and refusal, a decolonial feminist tactic might offer alternative objects of concern for each other and toward decolonial futures. This task of generating alter-concepts of care and responsibility might proceed by calling forth alter-modes of collaboration and

study that simultaneously aim at world-building and dismantlement.¹ How to give words that might refuse the hegemonic sense of what chemicals and life are, that might be adequate to confronting the ubiquitous condition of chemically altered living-being, a condition that is shared, but unevenly so, and which divides us as much as binds us, a condition that enacts and extends colonialism and racism into the intergenerational future? I am looking for words, protocols, and methods that might honor the inseparability of bodies and land, and at the same time grapple with the expansive chemical relations of settler colonialism that entangle life forms in each other's accumulations, conditions, possibilities, and miseries.

The Native Youth Sexual Health Network in Toronto has been one guide, with its collective and resurgent practices of visioning Indigenous reproductive justice. A basic lesson from Indigenous reproductive justice is that “violence on the land is violence on our bodies” ([Women's Earth Alliance and Native Youth Sexual Health Network 2016](#)). What happens to the water is what happens to its relations. This includes you too. On the Great Lakes, chemical violence always also involves relations to settler colonialism and white supremacy that nonconsensually inhabit bodies and territories, repeatedly concentrating and distributing harms and benefits. Even the ordinary acts of driving, buying, working, fishing, or sheltering are entangled in a long arc of extractive colonialism. So a decolonial feminist sense of enmeshed land and body entails affirming more consensual ways of being together within these extensive, noninnocent chemical entanglements.

In orienting toward decolonial futures, I have tried to work with the concept of *alterlife* as a prompt. Alterlife names life already altered, which is also life open to alteration. It indexes collectivities of life recomposed by the molecular productions of capitalism in our own pasts and the pasts of our ancestors, as well as into the future. It is a figure of life entangled within community, ecological, colonial, racial, gendered, military, and infrastructural histories that have profoundly shaped the susceptibilities and potentials of future life. Alterlife is a figuration of chemical exposures that attempts to be as much about figuring life and responsibilities beyond the individualized body as it is about acknowledging extensive chemical relations.

Forms of alterlife are systematically and brutally harmed and even exterminated in chemical relations; at the same time, alterlife includes being in the mess of consumption, subsistence, and side effect, being in the contradictions of existing in worlds that demand chemical exposures as the conditions for eating, drinking, breathing. Forms of alterlife might include chemically altered metabolisms, capacities to digest human-made substances, or bodily phenotypes that

develop in responsiveness to both chosen and unchosen chemicals and pharmaceuticals. It is difficult to say when the condition of alterlife began; there are many possible and divergent starting points for tracing the ways that human-produced chemicals have materially altered living-being, even as there are many ways of questioning the very category of *human*. Moreover, before capitalism and before humans, life was already altered by chemical relations between organisms and their conditions, so that the potential to become alterlife precedes its historical emergence. Thus, it is not enough to theorize alterlife as merely changed bodies that are altered by chemicals. Nor is it enough to theorize life as clusters of nonindividual symbiotic beings, as research on symbiogenesis, microbiomes, and holobionts tends to do (Gilbert, Sapp, and Tauber 2012). Studying alterlife requires bursting open categories of organism, individual, and body to acknowledge a shared, entangling, and extensive condition of being with capitalism and its racist colonial manifestations. It asks that we situate life as a kind of varied enmeshment and enfleshment in infrastructures—as well as in water as a distributed being. It is thus an entrapment in and a response to each other's life supports and conditions. Such concept work is a tactic for taking back phenomena from the epistemologies that have consistently erased the constitutive violence propping them up.

Polychlorinated biphenyls are good companions for conceiving alterlife. They are the classic persistent chemical: PCBs (always plural, because there are 209 different ways of attaching chlorines to biphenyls) tend to be quite inert, resistant to temperature change, and insoluble in water. They are slow to break down, biomagnify in the food chain, and concentrate in fatty tissues. Once the industrial exuberance is gone, the PCBs remain, extending racism in time. Polychlorinated biphenyls have spread into the airs, waters, and soils of the entire planet. The manufacture of PCBs in North America was banned in the late 1970s (and globally with the Stockholm Convention in 2005), and yet they are still circulating the earth in water cycles and atmospheric dust clouds. Past PCBs are archived in lake sediment, waiting to be stirred up and reanimated. As such, PCBs are a rare example of a highly regulated and monitored industrial chemical (amid the millions of substances that are not) that has also comprehensively infiltrated the planet. Like radioactive isotopes, PCBs stand as an example of the temporal and geographical extensiveness of chemical relations.

Polychlorinated biphenyls not only persist; they are also endocrine-disrupting. In fact, PCBs have a shape that is similar to human thyroid hormones, which allows them to participate in the metabolism of the body exposed, including the regulation of gene expression, which in turn reorders metabolism (Landecker

2013). Moreover, because PCBs can alter gene expression in inheritable ways, the metabolic effects of PCBs can carry over into future generations, so that the alterlife PCBs have helped make continues, not just because PCBs are incessant in our waters but also because their metabolic activations can cascade intergenerationally across bodies (Steinberg et al. 2008; Langer et al. 2008). This makes Monsanto, which manufactured most of the world's PCBs, a grand-kin of sorts, a toxic relation inscribed into energy infrastructures, white privilege, Indigenous dispossession, anti-Blackness, water, and metabolism (Agard-Jones 2013).

Polychlorinated biphenyls are ongoing. While the manufacture of PCBs was banned, PCB use has been grandparented. They still remain within the transformers and capacitors that make up the aging electrical grid. When people in Toronto switch on a light, we are entangled in PCBs' expansive relations. Concentrated exposure to PCBs on the Great Lakes is the legacy of an unregulated industry built on stolen Indigenous land that purposively pushed, buried, and dumped its chemical violence into poor, Black, and Indigenous communities, a violence that would then overflow such that racism would become a planetary presence. Civil-rights organizing against the anti-Black dumping of PCBs in Warren County, North Carolina in the 1970s gave us the term *environmental racism* (McGurty 2007). The community in Anniston, Alabama living around the first Monsanto factory to manufacture PCBs has engaged in a multigenerational struggle against anti-Black environmental violence (Spears 2014). In the Great Lakes watershed, generations of the Mohawk Akwesasne First Nation have resisted the erasure of the chemical violence caused by PCBs that are intimately tied to the stealing of their land and the injury of their fish relations, which have been categorized by the state as inedible for decades (Hoover 2013). The concept of alterlife asks for an unflinchingly pessimistic acknowledgment that these chemical relations are racist, harmful, even deadly, and that it is up to you to take on the ways that you are caught up in killing (even if they are killing you too, just more softly).²

This collective work conceiving of alterlife and chemical relations has largely happened while I have been living in Toronto on Anishinaabe and Haudenosaunee territories, as a Métis person of white skin who also descends from white settlers. The Métis are a postcontact Indigenous people who made home centered in the Red River area of what is now called Manitoba, and who were often entangled in the fur trade. In the 1880s the Métis took up armed resistance to Canada's claims to their land, and many were dispersed westward as they were confronted with ongoing colonial violence. Some Métis ancestors were active agents of colonialism, working with the Hudson's Bay Company, and in the twentieth century

many white Métis became more and more assimilated into settler colonialism. Being Métis is complicated, not least because it is noninnocently entangled with whiteness. So, I confess that alterlife is also an autobiographical category about traumatic and noninnocent relations with settler colonialism and capitalism. Alterlife embraces impure and damaged forms of life, pessimistically acknowledging ongoing violence, living within and against the worlds technoscience helped make. Alterlife is resurgent life, which asserts and continues nonetheless. Living in Toronto, I am a guest and a settler, caught up in the chemicals and water, noninnocently making relations and suspending damage. Alterlife acknowledges that one cannot simply get out, that this hurtful and deadly entanglement forms part of contemporary existence in this moment, in the ongoing aftermath. And yet the openness to alteration may also describe the potential to become something else, to defend and persist, to recompose relations to water and land, to become alter-wise in the aftermath.



Figure 1. Stencil art from the *Violence on the Land is Violence on Our Bodies* launch toolkit.
Image courtesy of Erin Marie Konsmo.

As part of the Week of Action toolkit created on the occasion of the launch of their *Violence on the Land, Violence on Our Bodies* report, the Women's Earth

Alliance and the Native Youth Sexual Health Network included a set of stencils created by the Métis artist and activist Erin Marie Konsmo. The stencils portray lungs holding within them the violent infrastructure of extractive colonialism. “Violence from Fracking is Violence on Our Bodies,” one reads. A second: “Violence from Pipelines is Violence on Our Bodies.” A third: “Violence from Logging is Violence on Our Bodies.” The campaign invites people to hold the images over their chest and to take a picture to post on social media—with the hashtags #landbodydefense and #environmentalviolence—resulting in poses of Indigenous women, two-spirit people, and youth mapping the extensive infrastructural relations of settler-colonial capitalism inside them. It teaches that life forged in ongoing chemical violence is also life open to becoming something else, which is not a nostalgic return, but instead the defending of sovereignty starting here, within oneself and each other, here in the damage now. There is no waiting for a better condition. The alter-wise of alterlife is a nondeferral of the decolonial, seized now, despite its impossibility.

In downtown Toronto, there is a notable concentration of PCBs in the infrastructure of office towers that house finance capital. Finance capital leaks PCBs (Diamond et al. 2010). I imagine another stencil with a set of lungs inside of which a pair of tall glass towers contain the infrastructures of finance, which in turn fund the pipelines, the open pits, the start-ups, the boxes of property, the war machines, the missing and murdered women, girls and two-spirit people. Breathe in. With each inhalation, the extensive relations of finance capital are pulled into your lungs, passing through membranes, attaching to receptors, rearranging metabolism, altering gene expression. Breathe out. With each exhalation, you are reconnecting to the greater fulsomeness of our relations. Breathe in, feel the fragility of white privileged life for the few around you. Breathe out.

NOTES

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1. Thank you to Nick Shapiro for refining this point.

2. This phrasing was inspired by Harney and Moten 2013.

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