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See table of contents

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Petrocolonialism, Ecosickness, and Toxic Politics in David Huebert's "Chemical Valley" Stories

Christopher J. Armstrong

Five linked stories in *Chemical Valley* (2021) by eco-fiction writer David Huebert are set in the Sarnia-Lambton region of southwestern Ontario. Four of these five stories take place in contemporary Sarnia and share a concern with eco-anxiety — a term among several others that has emerged to name the cumulative affective responses to extreme weather events, climate change, and long-term ecological degradation. The four participant narrators — a plant worker, two high school students, and a young mother — are anxious subjects of ecological crisis, profoundly unsettled by the toxicity that they know and sense in their surroundings, at the same time as they feel a measure of disgust at the petroculture lifestyles and the defences of anger, apathy, and denial of those around them. Despite this, they maintain a lyric attentiveness to the human and the more-than-human in this place of toxicity. They glimpse the inequities of risk across the community and consider what, if anything, can be done, posing questions for themselves and for readers about action and ethics.

For these thematic concerns, Huebert's stories display affinities with a corpus of contemporary writing that Heather Houser (2014) calls ecosickness fiction. This writing "brings body and earth together through narrative affect to illuminate how emotion rather than empiricism alone powerfully, if not always predictably, conducts individuals from information to awareness and ethics" (7). According to Houser, ecosickness writing can be traced to Rachel Carson's *Silent Spring* (1962) for the ways that Carson "sought to convince readers that animal and human bodies are barometers of ecosystemic toxicity" (5). Ecosickness writers display an interest in "how contemporaneous scientific researchers, medical professionals, activists, and policy makers are reimagining 'life itself,'" responding with "their own conception of biological life as malleable and vulnerable" (4). Yet if science is key, ecosickness fiction puts causality —

the etiology of illness — aside in order to foreground "alternative epistemologies of emotion and of narration" (7). The "Chemical Valley" stories explore these ways of knowing and take up key themes of ecosickness fiction: the sick body as a figure of human-environment relations; affects of wonder at the human and more-than-human world; creative reimaginings of "life"; and affective responses to technology and toxicity, including feelings of anxiety, disgust, and dread from the intimate experience of local pollution, images of environmental disruption and loss, and news of climate catastrophe appearing on cellphone and computer screens.

In this essay, I read the five Sarnia stories of *Chemical Valley* for the ways that, as short fiction, they do a particular kind of cultural work in this moment of representational crisis: how they negotiate the artistic challenges of the Anthropocene with its vast scales of space and time, including the intimate experiences of toxicity and slow violence, while exploring ethics and action. These issues have been addressed in differing ways by Ursula K. Heise (2008), Rob Nixon (2011), Adam Trexler (2015), Amitav Ghosh (2016), and Mark Bould (2021); yet in all of these studies, including Houser's, questions of verbal art in the service of depicting ecological crisis are posed mainly in terms of the novel. Huebert's short stories, I will suggest, channel the genre's ability to depict moments of affect, awareness, and agency at the same time as they use the short story's lyric affinities to call on something like Min Hyoung Song's "revived lyric" as a means of inviting sustained attention to the everyday, imagining moments of shared agency in a climate of denial, and accomplishing feats of compression and shifts of scale. Huebert's stories also track the lived experience and historical dimensions of settler colonialism in Chemical Valley, gesturing towards what Max Liboiron, Manuel Tironi, and Nerea Calvillo call "toxic politics" and echoing themes in the work of science historian Michelle Murphy, which probes how the visible and invisible "chemical infrastructures" of Sarnia-Lambton upset and reproduce relations of power. Read in these contexts, Huebert's stories gesture to other modes of action and ethics in a world where pollution is a weapon of slow violence (Nixon 2). In doing so, they open new vistas for ecosickness fiction as a literary response to planetary environmental crisis.

Natural resources, geographical location, and disruptions in global supply combined to establish Sarnia as Canada's "petrochemical heartland" in the postwar era. Located on the shores of Lake Huron at the

mouth of the St. Clair River, Sarnia occupies traditional lands of the Aamjiwnaang First Nation. Treaty 29, signed with the British Crown, created the Aamjiwnaang reserve just south of present-day Sarnia. British settlers entered the region soon after the treaty came into effect (Elford and Block). The first commercial oil well began production in 1858, precipitating a rush to Oil Springs, where twenty-seven refineries were in operation by 1864 (Staley). During World War Two, the Canadian government ordered construction of a synthetic rubber plant, casting Sarnia as a centre for petrochemical production (Elford and Block). By the 1970s, Sarnia was one of Canada's most prosperous cities, boasting income levels thirty-five percent above the national average (Elford and Block). The 1971 Canadian ten-dollar bill featured the petrochemical facilities at Sarnia, a proud symbol of Canada's prosperity. However, in recent years the city has largely failed to attract some 300 billion dollars of industry investment, and many of the plants and refineries, which date from the 1960s, 1970s, and 1980s, are among the oldest and heaviest polluting facilities in the country (Mordsen).

Industrial pollution has been a matter of concern in Sarnia-Lambton for decades. More than sixty refineries, petrochemical plants, and energy facilities are clustered on both sides of the international boundary with Port Huron, Michigan. Sarnia is the terminus of the Enbridge Line 9 oil pipeline running from Alberta's tar sands. As a result, Sarnia has the worst air quality in all of Canada, and the diffusion of known carcinogens such as benzene far exceeds health standards. A 2005 Ontario government assessment report of thirty-five facilities found that all were in non-compliance with one or more regulatory measures; it also noted severe deficiencies in planning, certification, and handling (Environmental SWAT Team). A 2007 report from Ecojustice documented impacts on culture, hunting, fishing, medicine, and health, finding high rates of "asthma, reproductive effects, learning disabilities and cancer" in people on the Aamjiwnaang reserve (MacDonald and Rang 8) along with above-average rates of hospitalization in the general population of Sarnia (9).

The long history of extractive capitalism, pollution, and colonialism in Chemical Valley has engaged historians, scientists, non-government organizations, allied activists, and residents of Aamjiwnaang. This work paints a picture of what Nixon calls "slow violence" (2) and what Murphy calls chemical infrastructures: "the spatial and temporal distributions of industrially produced chemicals" ("Chemical Infrastructures"

105), which includes "social sedimentations such as colonial legacies, the repetition of gendered norms in material culture, or the persistence of racialization" (Murphy, "Distributed Reproduction") in addition to physical industrial infrastructures. Petrochemical facilities encircle the Aamjiwnaang First Nations reserve and its 850 residents. One half of polluting sources are within five kilometres of the reserve and south Sarnia (MacDonald and Rang 8). Aamjiwnaang residents have worked for environmental reproductive justice, contesting Canada's ongoing colonialism. Regulatory gaps, lax enforcement, and a voluntary regime of industry reporting of incidents — what a recent report calls "data colonialism" (Gray et al.) — have placed the burden of documenting chemical exposures on the community (Murphy, "Chemical Infrastructures" 110; Wiebe, ch. 1). Community initiatives have included "body-mapping" of toxic substances (Murphy, "Chemical Infrastructures" 110; Bagelman and Wiebe 78) and research documenting declining male-to-female birthrates (MacKenzie et al.; Murphy, "Chemical Infrastructures" 108; Wiebe, ch. 1). Residents launched a constitutional challenge in 2010 to the government of Ontario's approval of production increases at Suncor Energy Products ("Environmental Rights"; Wiebe, ch. 1) and have staged other forms of protest such as "toxic tours" of facilities around the reserve (Garrick). Outside (but also critical) of evidentiary regimes and technoscientific framings of pollution, scholars and activists have attended to the lived, intimate experiences of toxicity. Jen Bagelman and Sarah Marie Wiebe adopt what they call "a more feeling, a more affective and embodied heterotopic prism" to their research on Aamjiwnaang's quest for environmental reproductive justice (83), while Murphy and Liboiron, Tironi, and Calvillo outline a feminist decolonial approach that includes new conceptions of life — "alterlife": "life already altered, which is also life open to alteration" — and new modes of politics, solidarity, and care (Murphy, "Alterlife" 497). In these ways, Indigenous activists and allied scholars work through embodied experience and alternative epistemologies of affect and orthodox science, imagining new kinds of action in a toxic politics and new understandings of "life" that resonate in Huebert's stories.

Set in a Sarnia refining facility operated by a company called Streamline and in the home of two of its plant workers, the opening story, "Chemical Valley," is narrated by Jerr, a chemical engineer in the Bio unit and a creative young man filled with eco-wonder. Yet Jerr's

creative life has been foreclosed. A dream of making comics and running a comic book store is now impossible with the premature loss of his parents due to illness. The ensuing economic hardship forces on him and his partner Eileen a life of drudgery, if not precarity: Jerr pursues "overtime" despite admitting it is a "sickness" (Huebert 16). A lonely, taciturn figure, Jerr is still mourning his parents and coping emotionally with Eileen's illness. While Jerr's narration of toxicity and chemical infrastructures is scored with images, references, and tropes culled from sci-fi film, TV, animation, and comics — a veritable "Anthropocene unconscious" of popular culture (Bould) — his knowledge also extends to Lambton County's petro-history, knowledge gleaned from his mother: how oil founded Canada largely hidden from official history and how the chemical infrastructures in Lambton County were laid in the colonial era of primitive extraction, a theme taken up in the next story, "Leviathan."

Jerr guides us on a tour of the facility and the chemical infrastructures that entangle land, air, water, and bodies in Sarnia-Lambton. The Bio unit at the plant where he works makes "clean water" according to "standards" defined by "degrees of toxicity" (Huebert 11) — an observation that highlights "technocratic definitions of toxicity and toxic risk": the "threshold limits" and "allowable pollution" (Liboiron et al. 335) that are part of the permission-to-pollute governmental regime of North American industrialism (Murphy, "Chemical Infrastructures" 109). In the Bio unit, lip service is paid to "personal safety," but dealing with "situations," Jerr tells us, is everyone's real goal (Huebert 19), suggesting the alarming frequency of incidents (spills, leaks, flares, and releases) documented in Chemical Valley. Jerr relates a horrific story of a hydrogen sulfide leak and explosion that melted a truck (19-20). Three incidents punctuate his two work shifts during the story amidst the blistering heat of June 2019. A seventy-foot stalk of tail gas ignites in the second incident — a scene of utter chaos before and after lead operator Suzy takes things into her own hands. In the third incident, another hydrogen sulfide leak, it seems that Jerr is killed; his death is confirmed in the third story of the sequence, "Swamp Things."

"Chemical Valley" opens at the facility with the first of these three incidents: the discovery of a flock of dead pigeons. Jerr attributes the incident to a chemical leak; Suzy dismisses it as "freaky" and orders them to clean it up (3). Captivated by the "glassy cosmos" of a pigeon's

eye, Jerr narrates a long passage that presents one of the dead birds as an object of contemplative wonder, shifting the narration to the second person "you" (4). Jerr's wonder leaps to planetary, cosmic scales at the same time as he voices feelings of "tenderness and violation." This lyric moment, one of many in the story and throughout the sequence, resembles what Song calls the "revived lyric" with its structuring by a speaker and by "you" for the purpose of finding a "shared agency" as well as its compression and shifts of scale (Song, "Introduction"). Yet if this revived lyric enlists "you" for the sake of agency, Jerr's conditional "might" registers uncertainty and irresolution, calling this moment "the loveliest secret you have ever touched" (Huebert 4).

Exchanges between Jerr and Eileen, a scientist and former employee at Streamline, reveal not only Jerr's secrecy but also the depth of his ecosickness — a longing for his own annihilation. Jerr confides to Eileen his wish to be interred in a "biodegradable burial pod" (Huebert 4), an ethical practice called "capsula mundi" (5), which he has learned about online. Asked why he thinks of such things, Jerr broods on what he is reluctant to say: the incident with the pigeons and how it "gets me thinking about flesh, about bodies, about waste" and about a young co-worker who suffered a heart attack, and how it keeps him awake at night, checking his pulse and thinking about the Facebook link to an article detailing the carbon footprint of modern burial practices (5). Asked why his love of trees did not lead to a career as an arborist or landscaper, he remains silent about "the debt or the mortgage or the pharmaceutical bills" (6). Here and elsewhere, Jerr's secrecy seems to be a figure of the invisibility of slow violence — an intimate violence that has impacted his family, his own body, his wife's body, and their life chances. As Murphy argues, chemical infrastructures entangle bodies in a complex network of forces that reproduce inequalities and limit life possibilities while allowing other entities to flourish ("Chemical Infrastructures" 105-06; "Alterlife" 497).

Amidst these thoughts of self-annihilation, illness, and debt, Jerr searches for some kind of solace in nature. His extended drives to work bring him through corn fields, whose vastness comforts him as something "stable and alive and endless"; but Jerr knows that Eileen would puncture this vision of eco-plenitude with her chemist's knowledge (Huebert 8). His image of eco-permanence is part of a "whole huge cycle of petroleum running subterranean through modern biological life" (8).

Wind turbines also occupy the corn fields, and these, too, become objects of another kind of permanence, imbued with wonder and terror. Jerr imagines them as "slow-spinning gods" (30). Later in the story, as pressures mount on Jerr, he finds himself once more in the corn fields, prostrate before the turbines, "thinking up towards that turbine and feeling overpowered by something blunt and terrible and awesome" (33). Jerr's meditation is a lyric communion, but not an apostrophe that seeks shared agency. Rather, he takes solace in his own annihilation: "I imagine myself chopped into atoms, into confetti. I see tiny particles of my hair and skin feathering over the field, blending with the earth and soil, becoming vegetable, becoming corn. The wholeness of that resignation, a longing to be unmade, to wilt beyond worry and debt, pension and disease" (34). This resignation is rooted not only in his troubled mind — in eco-anxiety and the mourning of his parents — but also in precarity and illness wrought by chemical violence.

Jerr's inner turmoil is compounded by his partner's illness and her need for care and emotional support. Eileen, confined to the home, suffers from an unnamed, presumably terminal illness whose cause is never addressed in the story: "You know I'm never going to get better?" she says (31), her words aimed at his recent unusual behaviour, her concern that something is going on. Jerr can find no answer, no emotionally "right thing" to say; but her suggestion that she would be fine if he left her meets with an immediately consoling, almost smothering response. Jerr nestles into her, uncomfortable as the heat builds between their bodies but also wanting "to melt, to seep, to burn hot as compost in nitrogen night" (32). Eileen's sick body — the alchemical iconography suggested by their twinned heating bodies — resonates with Houser's account of ecosickness fiction, figuring the relations of soma and earth, of toxicants permeating the web of life. Indeed, Jerr references news reports of toxic emissions: "radioactive tritium spilling into Lake Huron" and antidepressants in the brains of fish in the Great Lakes (18). Locally, there is growing concern about reproductive impacts on the body: The declining rates of male births are seen first in birds, then in the Indigenous residents of the reserve, and recently, the reporter says, among plant workers; "now they're getting worried," Jerr tells us (8). That the impacts prompt worry only when plant workers are affected is telling. The slow toxic violence visited on the people of Aamjiwnaang counts for less and remains invisible. So too does the burdensome work

that Indigenous residents have undertaken — recording and reporting, body mapping, and protesting — including their role in discovering the reproductive impacts of toxicants. Yet among the general public, doubt and denial preside: "the myth that the wind blows the fumes south, towards Aamjiwnaang, towards Corunna, towards Walpole. That the airborne toxicity lands ten kilometres to the south. That the people who live north of the plants won't get sick or at least not as sick. As if wind could really dilute the impact of living beside a cluster of sixty-two petrochemical refineries that never sleep" (18). Denial is made easy with the absence of any "official studies" by the government, yet with mounting anecdotal evidence comes anxiety among plant workers that toxins are "in their intimate organs, zinging through their spit and blood and lymph nodes" (8). Amidst all of this, Jerr recalls an image of Eileen at work in "the biosafety cabinet" before "she got sick" (9) — an intensely ironic image of a technological apparatus that purports to shield the human body from toxicants, analogous to the broader industry reporting and technocratic framings of risk, safety, and toxicity (Murphy, "Chemical Infrastructures" 109-10; Liboiron et al. 335): "I'd picture her in goggles and full facemask and fire-retardant suit, reaching through the little window to mix the catalyst in and then watching the crude react in the microscope" (Huebert 9). The enumeration of the protective gear is ironic, if not absurd, given the toxic mix of substances taken in with each breath, every drink of water. Rather than connecting toxicity to illness, Jerr dwells on her devotion to work, the precision of her analyses, and the beauty she sees in the toxic substance. Jerr's thinking follows Eileen's wonder at oil as "life" that was "all compost, all along" (10). Taken together, the themes of these passages display the affinities of Huebert's stories with Houser's account of ecosickness fiction, where questions of causality and empiricism are secondary to exploring "alternative epistemologies of emotion and of narration" (7), and to creative reimaginings of life.

If the story shows how chemical violence is unevenly distributed across the community, the characters differ in their affective responses. Eileen, who has Indigenous relatives on the Aamjiwnaang reserve, displays little concern regarding its fate, making only occasional visits and remarking, as Jerr tells us, on the reserve's shrinking boundaries (Huebert 21). Jerr mentions that the reserve has been "slowly whittled down through centuries of sketchy land deals" (21). Sarah Marie Wiebe

reminds us that land transfers continued through the 1950s and 1960s, with more recent "land sales and surrenders, highway expansion, and municipal annexations" (ch. 1). The traditional burial ground is encircled by a Suncor facility, cut off from the rest of the reserve, while refinery stacks dominate the skyline. Noise and vibrations in the earth are constant (ch.1). Eileen's apparent indifference contrasts others' views in the "Chemical Valley" stories, including the community-aware concern of young Jenna in "Oilgarchs," whose friends blog about toxicity and climate change, participate in climate protests, and take toxic tours led by the Indigenous community. Jerr shows an awareness of the chemical violence directed at the Indigenous community and responds with a measure of emotion. Arriving at work, he witnesses "protesters forming a drum circle. . . . signs that read STOP LINE 9 and chanting about stolen land" (Huebert 18). Jerr knows they are "right" but passes through the barricade with little acknowledgement, feeling "a new sting in the awful" (18). His affective response seems directed at both this protest of petrocolonialism and his inability to take action himself.

Jerr also observes the attitudes and lifestyles of the wider community of Sarnia, especially the plant workers and their families, some who have worked in the industry for generations, and some like his own family who are direct descendants of the earliest European colonizers. These Sarnians manifest strains of ecosickness, according to Houser's definition, as a "pervasive dysfunction" (11) evident in individual and group behaviour: "phobia, addiction, self-mutilation, and disfigurement" (12). For Houser, sickness is "a powerful analytical tool" that gives us insight into how "macrosocial forces penetrate individual human bodies and how embodied experience might transform these forces in turn" (12). For Jerr, such macrosocial forces are displayed in the "strange pride" (Huebert 19) of the plant workers and in the mood of "low-level dread" (18) across the community about toxicants spreading beyond fish and birds, beyond the Indigenous people of the reserve. These attitudes are expressed in pathologies of speech and action: grim humour complementing doubt and denial, jokes about the great retirement package awaiting those who manage to make it to fifty-five (18-19), and excessive consumerism: "spending-your-oil-salary-on-Hummers-and-motorcycles-and-vacations-to-Cuban-beaches-with-plastic-cups kind of pride. A live-rich, live-hard kind of pride" (19). These attitudes seem to be epitomized in lead operator Suzy with her climate denialism, her alcoholism, her

racist jokes, and her "gunslinger strut" (27). Indeed, Jerr sums up the grim ethos of the workers and the community with a reference to *Die Hard*'s action hero John McClane: "The yippee ki yay of knowing that Sarnia is the leukemia capital of Canada and the brain cancer capital of Canada and the air pollution capital of Canada" (19).

Another thing that Jerr does not tell Eileen is "about the basement, about mum" (5). At home in the evenings after Eileen is asleep, Jerr visits his mother, who sits quietly in the basement of the house. He tells her about his day and revisits episodes in their life together. Yet reference to her funeral appears early in the story (6). Apparently alive some nine pages later when Jerr makes his first visit, she is later referred to as deceased at age fifty-six (19). Jerr, we learn, has obtained chemicals from a taxidermist to preserve her body (23) — a macabre act befitting a tale of gothic horror, one that also suggests how chemical toxicants permeate the cycle of life and death. At the same time, the basement has been invaded by a pool of oily muskeg, appearing at his mother's feet, the skeletal remains of animals surfacing in the muck as the pool expands. The persistent, worsening odour of the pool (or the corpse) prompts Eileen to call her brother, a police officer, while Jerr is at work. Until this final revelation, Jerr's visits of communion with his still and silent mother lend an uncanny undecidability to the narrative, complementing the moments of the fantastic and gothic that score Jerr's account of Sarnia's chemical infrastructures while also showing the extent of Jerr's implacable grief and profound ecosickness.

Before the consequences of Jerr's actions can be told, an emergency at the plant calls him back: a third incident unfolds at the facility in which Jerr succumbs to a chemical leak of hydrogen sulfide. A long, surreal, hallucinatory passage unfolds — part absolution, part eco-utopian vision — that unites many of the images and desires that have obsessed Jerr. Eileen appears, transformed into a creature that is part machine, flying with the aid of wind turbine arms, her teeth ferns, her tongue a hundred sea-snakes. She absolves Jerr, and explains about the oil pool and about compensation coming from the company (37). The pair rise into the sky: "We catch hold of a thermal that takes us up fast, too fast, high above the black arcs of the fountains. The air strobes and changes colour and Eileen twirls a wing and says, 'Look.' What I see is a sky full of plants. Coral and krill and strange ancient grasses and we're riding it, soaring on the spirits of five hundred million years and for once it is not

bad, is not sickening" (38). While Eileen's transformation suggests the entanglement of the human, the machine, and the more-than-human — perhaps also a figure of the kind of transformation that Murphy calls "alterlife" — this airborne progress of eco-plenitude celebrates self-annihilation. Jerr confides a sense of release from sickness; and Eileen consoles him, reiterating his vision of life: "we were all compost, all along" (Huebert 38). This resignation to death, Jerr's "longing to be unmade," underscores how chemical infrastructures have not only foreclosed his and his family's life chances but also prevented him from taking action — politically or creatively — against the ongoing injustices of settler colonialism in Sarnia-Lambton.

The colonial era of oil extraction in Lambton Country is taken up in "Leviathan," the next story of the sequence. Jerr's family has deep roots in this history. Jerr's mother related tales of a grandfather, a Lambton oil man who was cheated out of a patent (Huebert 31). Jerr in turn tells Eileen about the region's history, explaining how Canada is "basically built on oil," painting apocalyptic scenes of gushers polluting fields, rivers, and lakes and lightning-induced fires burning for weeks, "a carnage of oil fire through the night" (22) — events recorded in local chronicles of Lambton County's petrochemical history (see Ford; Staley; May). When Eileen remarks with wonder at that world's disappearance, Jerr replies that it is "not gone, just invisible — racing through stacks and columns and broilers" (22). Narrated in the past tense, "Leviathan" bears witness to this period of Lambton Country's history. It materializes the primitive chemical infrastructures in which land and bodies will become invisibly entangled — narrating the incipience of an eco-anxiety that haunts the characters of Sarnia's present. Linking the colonial era to the present, "Leviathan" opens with a dream that is much the same as one Jerr reports in "Chemical Valley": "Mum standing holding a punting pole. I can't see her face but I see the reflection of her gold tooth in the thick black morass, tooth like the sun" (32). In "Leviathan," the yet unnamed male protagonist recalls the "ragged remnant of a dream — a woman with a punting pole, lank hair, a slash of gold tooth" (39).

"Leviathan" depicts with vivid description and in grim figurative form the toxic impacts of oil extraction on the web of life: how chemical infrastructures impact the bodies of one family and the land, suggesting the legacy of toxicity for future generations. Like "Chemical Valley," the story depicts characters beset by economic precarity. Husband and

wife Malcolm and Lise, now ten years in the town, are an unprosperous, childless couple who share a "slapdash" home with Malcolm's father. Around their home "stained fields cluttered with stumps and carts and three-pole derricks" (39) tell of the transformation of the land, "an oil fire burning on a distant field" (40-41). After a night of drinking, Malcolm wakes up at the door of his home, frostbitten, having left his father at the drinking place, urging him to stay over and not attempt the journey back from nearby Wyoming, Ontario, in the coming snowstorm. Before Malcolm can revive his frostbitten limbs, he and Lise are called out to search for his father, whose horse has been found on the road back. The journey out takes them through the town with its Main Street of log houses, shanties, "haste-built hotels" and the more solid "red-brick bank" (42); across fields pocked by "black mouths" of dug wells that drop one hundred feet; and past smouldering fires that drillers pile snow on to douse them (42). Through their ten years of residence, Malcolm tells us, he and his father witnessed the scramble for oil, capital and science transforming the land: "the derricks rise up and the speculators come off the trains in gaiters and denim trousers" and geologists talk of "unseen chasms underfoot — shale and limestone, water and gas, seas of oil" (43). A description of "black ash hewn and turned upside down to make the derricks" (43) suggests how the natural order is upset by human hands; the derricks at the edge of town possess "a strange elegance," momentarily personified as snow whirls "around their feet" (42). Finding the horse, the party search for the man, unsuccessfully, until with Lise's prompting they realize that he has cut open the horse and crawled inside to take refuge from the cold. The dead horse is "curled fetal," and at that moment of discovery, Malcolm glimpses his father still animate before the cold takes him, "curled up like a baby" inside the horse, "[r]esting, easing, eyes blinking, quivering, finally closed" (44). Efforts to extract his corpse from the frozen horse are hopeless, and the searchers call for a priest and douse the horse in oil and benzene, lighting it after the minister and son eulogize the man. This, the story's penultimate scene, presents a grisly image of human-animal fusion, connoting birth and death, and the toxicity entangling life.

If the past tense narration of the story suggests historicity, one passage, occupying the second of the story's three sections, breaks this pattern with thematic import. Rendered in the present tense, Malcolm sees "a woman" — his mother — burying a stillborn child and giving

utterance to the ecosickness that will haunt the future generations of this toxic landscape. She is "muttering about her blood, the curse in it, about the one runt child she'd managed and six more, all still" (45). This vision echoes Jerr's observation of a community haunted by awareness of the toxicants "in their intimate organs, zinging through their spit and blood and lymph nodes" (8). The narrative circuit here seems to suggest what Murphy identifies as the "latency" of chemical infrastructures: the "slowness," "persistence," and "creeping accumulation" of toxicity as "the submerged sediments of the past arrive in the present to disrupt the reproduction of the same" ("Chemical Infrastructures" 106). Indeed, the final section of the story is symbolically charged to link the human body, animal life, and the land to a toxic legacy. Three months pregnant, Lise becomes at this moment a figure of the sick reproductive body, like Malcolm's mother. As the conjoined curled, fetus-like corpses of man and horse burn, Lise slips away; she squats in the snow as the blood of miscarriage passes out of her. The seam in the horse's body splits and dribbles "a brown sap" (Huebert 47), and in the distance "a crack and blast" are heard, followed by "a deep shudder in the earth" (48).

The two stories that follow "Leviathan" — "Swamp Things" and "Oilgarchs" — return to the present of "Chemical Valley," the summer of 2019, and are linked by character and plot, centring on three high school friends: eco-aware Sapphire, Deedee, and Jenna, who are energized by the School Strike for Climate protests. Like ecosickness fiction, the linked stories examine affect in the turn to action and ethics. Beyond the ecosickness framework, however, the stories also gesture towards a "toxic politics" that, as Liboiron, Tironi, and Calvillo suggest, necessitates other kinds of agency, different concepts of solidarity and justice (333). Revived lyric also figures in these stories, registering affects of wonder at the non-human world and of terror at environmental crisis, while also staging moments of possible shared agency. An important theme of these stories is the deep emotional impact of media coverage of the climate crisis on the young protagonists, as documented in the psychological literature on youth and eco-anxiety (Léger-Goodes et al.). Both stories feature blogging, texting, sharing images and memes, and navigating social media flows of information — all of which play havoc with the emotional lives of the girls and influence how they conceive action in an age of "instant spectacle" (Nixon 6). "Swamp Things" opens with Sapphire anxious over a 24-hour gap in contact with her lover —

and indecisive about sending another text. Depicting teen-parent conflict over the cellphone, a mother's curiosity about who her daughter is communicating with, and a veiled threat that parental surveillance is the price of having a device (Huebert 49), the scene unfolds as Sapphire is being driven by her mother Suzy, the lead operator at the Streamline facility in "Chemical Valley." Media coverage of climate disruption also figures in the scene. A radio news report on wildfires in Alberta prompts annoyance from Suzy: "This shit again. . . . Every year's a record, seems like. Gets tired" (49). The verbal exchanges that follow are cut short by the spectacle of an SUV rolling over the gas pumps at a service station, its driver slumped over the steering wheel, resulting in a shower of petrol and Sapphire bracing for an explosion as traffic inches forward. Later, the three girls learn that the driver of the SUV is an associate director of Sustainability for Streamline, who received a salvo of online hate messages after tweeting a picture of himself windsurfing while praising the "extended beach season" — only to suffer a heart attack two weeks later (56). While Sapphire is transfixed by her memory of the incident at the gas station, the girls relish the tweet-storm, Jenna calling it "So fucking ironic" (56). In these ways, media, especially social media, play a crucial role in the affective and activist responses that these young characters bring to toxicity, chemical infrastructures, and the climate crisis.

In addition to constant eco-anxiety and frustration with climate action, Sapphire's young life is upended by personal struggles — namely, her parents' divorce and a brief but intense affair with her high school English teacher. Sapphire lives between the diverging worlds of her mother and father, now three years divorced: climate-denying Suzy, inhabiting an alcoholic haze of anger and apathy, and her father, a former Streamline executive who works in water treatment for the city of Toronto. While Suzy vents her disgust at Saphire's eco-awareness, her father feeds her with ideas, information, and images — utopian and dystopian. Sapphire's cellphone lock-screen picture is one such image: a Ballardesque drowned world entitled "Future Toronto": "The whole city flooded, condo buildings overgrown with vines and moss" (54). Sapphire, like Deedee (86), spends late hours doom-scrolling through images of "dead whales" and "starving polar bears" mixed with "chubby bunny memes" and "*Friends* personality quizzes" in her Twitter feed (53). All three girls retain material and affective traces of their Disney-saturated childhoods, Sapphire calling Sarnia "an Enchanted Castle of

smog" (54). Perhaps it is this turmoil that draws Sapphire to Dawn, a passionate, charismatic, eco-aware woman. For Sapphire, Dawn is a figure of strength and hope in a "permanently polluted world" (Liboiron et al. 332), a woman "who knows we can't purge or clean up all this filth but maybe we can bend it into new ways of making" (55). Dawn becomes a lover and an intellectual mentor to the vulnerable Sapphire, nurturing her eco-imaginary, taking seriously her obsession with Alan Moore's *Swamp Thing* mythology. Without a reply from Dawn through the first half of the story, Sapphire runs through memories of their intimacy before learning she has been hospitalized. Finding Dawn in intensive care, Sapphire sees her eroticized body transformed into "a horror of red" (67) by an attack of bees. This figure of the injured, although not diseased, body suggests an ecosickness reading: perhaps both the ethical wrong of Dawn's charismatic mentorship but also something awry in her eco-awareness. Later in the story, Sapphire will come to an awareness of Dawn's own form of toxicity, prompted by Deedee who tells her that she's "not the only one" to have been exploited by Dawn (77).

Excluding Dawn and her two friends, Sapphire finds no intellectual or emotional connection in school or in the wider community. A climate-protest-inspired drawing for art class lands her in the principal's office (58). Likewise, the three girls are the only ones who turn out for the Sarnia climate strike. They end up posting "bored selfies" of themselves wearing "air filtration masks . . . stacks jabbing up throughout the background" (68). Alone and far removed from the global protests, they can access videos online and feel like they are "part of something," a sense of connection that is lost as soon as they close their flip phones (68). This moment suggests how the girls are conditioned to see ecopolitics as a matter of protest and spectacle, driven by what Nixon sees as the media's preference for "visual orthodoxies of victory and defeat" (6). Liboiron, Tironi, and Calvillo warn against this politics of protest and spectacle, offering a "slow activism" as the complement of "slow violence," action that is not "heroic, event-based and coherent" (341), while calling for diverse conceptions of action, including agency as obligation and as ethics (342). It is Sapphire who will take up this line of protest in the following story, venting her anger and frustration: "The non-violence, Greta, the whole shtick. It's exhausting. Feels like you're screaming into a toilet" (Huebert 69). Confrontations with Dawn at school and with her mother at home fuel Sapphire's anger and confusion. News of a

leak and a death at the plant — Jerr's death — make Sapphire feel "like we're hitting the edge of something" (78). This constellation of personal frustration and the media spectacle of event-based public action pushes Sapphire forward.

Narration shifts to Deedee in "Oilgarchs," continuing the account of the events of the summer of 2019. Sapphire tries to enlist her friends in an attack on Streamline's vice-president of Operations, her outrage fuelled by his post on social media about the "toxic blob becoming the city's mascot" (84), a reference to a massive leak of toxic substances into the St. Clair River in 1985 (Murphy, "Chemical Infrastructures" 107). With its focus on environmental action, the story explores agency and ethics, raising questions that are informed by a "toxic politics" and the slow, chemical violence enacted on the Indigenous community. Jenna, a resident of Aamjiwnaang, is central here. Mocking Sapphire's plan and its "Mission Impossible" drama (Huebert 82), she backs out, calling it reckless: "This stuff needs to be organized," she cautions. "This will be worse. All of this falls back on the community, on Aamjiwnaang" (83). Sapphire insists that they are "allies"; Jenna baulks, her caution informed by the ongoing work by the community: "You get in touch with the police. You need liaisons. You don't hurt people. There are already people doing this work. You need to listen," she tells Deedee (85). Jenna also calls out Deedee's post on the Oilgarchs blog, which reads, "We know that everyone lives in Chemical Valley. That there is always a refinery around the corner, a reactor in the closet" (83). Toxic risk is not distributed equally. Colonialism persists: "There are degrees, Deedee. There's wealth. There's privilege, proximity. There's living next to the golf course and there's having the plants in your fucking backyard, on your burial ground," Jenna says (84).

Nevertheless, Deedee joins Sapphire. Her sense of agency emerges in a long passage that resembles Song's revived lyric, a passage that blends an account of the now futile-seeming protest with Deedee's hopes for an education that might contribute to change (86), her sense of urgency heightened by the terror-inducing images in her social media feed: "You lie awake thinking of Fukushima. You lie awake doom-scrolling. You dream the burning Amazon, imagine ash and fireweed arriving at your doorstep in smiling boxes slashed with arrows" (86). By the end of the passage, Deedee is infected by Sapphire's energy: "there is a wild wind in her eyes and you think yes" (86). However, Sapphire's plan turns into

a betrayal of Deedee, who is forced to carry out the attack alone. When she confronts the "target," spraying him with the hot bitumen inside a *Frozen* thermos, Deedee senses his fear, a fear that she knows well: "The fear I was cradled in, that licked the wound of me" (88). Deedee's figurative language brings to the surface the deep emotional disturbance wrought on her young life in this toxic place, in a polluted world. In the aftermath of the attack, there is an investigation, a trial, an apology, and efforts by the company for community reconciliation (90) — all of it legal and corporate collusion that maintains the permission-to-pollute regime. Action, the heroic action of protest, does not lead directly to change. Indeed, as Liboiron et al. point out, action may "strengthen rather than subvert systems of power" (337).

Interpolated with the sections narrated by Deedee are six entries from the Oilgarchs blog, posts that articulate the anxieties of a young generation facing the climate emergency and living under a "Regime of Toxicity" (85). Beyond registering the girls' anxieties, the posts reference a toxic politics and the colonial relations of power in extractive capitalism. The "permanently polluted world" of Liboiron, Tironi, and Calvillo is suggested in posts that reference bodies, land, water, and air permeated with toxicants "in our brains, our air, your bones" (Huebert 83) and consumer goods: "polypropylene lenses" and "vinyl pools" (81). The posts decry "the acid reign of Western law and knowing" (81) and assert that "Terminology does not change death" (83), making fairly explicit reference to a decolonial Indigenous critique of governmental and technoscientific management of pollution. The assertion that "We know about the land theft, the burial grounds quaking hydraulic, their chemical cathedral" (81) points to territorial encroachment and colonial violence enacted on Aamjiwnaang. "Health Canada refusing the studies" (81) suggests Gray et al. and the notion of "data colonialism," while a list of leaks and spills in Chemical Valley dating back to 2011 (Huebert 85) recalls the incident recording-keeping of Aamjiwnaang residents. The final post on the blog acknowledges Jenna's understanding that toxicity reproduces inequality: "privilege, wealth, proximity" determine levels of harm in Chemical Valley (89).

The final scene of the story affirms Deedee and Jenna's solidarity. With Sapphire gone to live with her father, Deedee and Jenna reunite for a swim. Deedee's apology and their plunge together into the water's "perfect pollution" recalls the condition of a "permanently polluted

world." Their renewed friendship represents "agency-as-obligation," an ethics of "slow activism" (Liboiron et al. 341-42) over heroic individual action — Sapphire's "Mission Impossible" heroism. Still, Deedee feels the transformative possibilities of action: "I changed nothing, yet I am changed. I resolved nothing yet sometimes I still feel the rush of that man on his knees" (91).

"Cruelty," the final story in the "Chemical Valley" sequence, also poses ethical questions, but of a different sort. The story focuses on a young mother named Deepa and her husband Dan, a chemist at the Streamline facility, whose recently purchased home is infested with mice. Beset by the physical and psychological stresses of post-partum care for her infant, Deepa is edged towards an empathic reimagining of the pests, even as they pose a threat to the health of her infant. Feelings of disgust and dread, which turn into obsession of the toxic feces and furry bodies, are intensified by Deepa's Google binges. She hopes to engage the services of an exterminator with a "humane" (but costly) approach to the pests. As the story opens, the handsome Pierce is telling Deepa that the mice and the toxins they deposit are everywhere, comparing the rodents to oil: "'Just like how there's pipelines all around you but you never see them.' He grins. 'Same thing with the rodents.' He clucks, looks around the beams, the rafters, the spray-foam. 'More mice in this city than people'" (Huebert 93). Pierce's image of "mouse highways" (95) returns to Deepa: "She thinks of mice, of highways of them" (101), the thoughts invading her dreams, where she conjures an underground mouse city replete with the infrastructure of its human counterpart: "the mouse highway, a mouse gas station, pipeline filled with scurrying rodents" (101). Aside from imagining human-animal worlds conjoined by infrastructures, the cohabitation of mice, rats, and humans connotes how technoscientific and industrial systems reduce all life to test subjects, to lab rats.

First-time mother Deepa faces many challenges: sleeplessness, depression, and anxiety, the latter fed in part by her social media stream as she confesses to "guilt from all the blissed-out moms on her Instagram" (106). When she became pregnant, Deepa put filters on her social media on stories about climate change and environmental degradation: "she felt guilty and selfish reading articles about future storms, about giant carbon-sucking machines, about the animal livestock industry" (107). Deepa's emotions suggest parental eco-anxiety and foreclose an engage-

ment with the world. As Deepa and Dan debate low-cost solutions to the pest problem, the degrees of cruelty of each, Deepa is forced to act. Finding four abandoned, helpless baby mice, she kills them in the most humane way she knows (109), placing them on glue traps and drowning them, holding "her breath until the movement stops" (113) in an empathic gesture. Immediately following this, an excerpt from her online reading hints at her intellectual and affective state — wonder at the maternal instinct she shares with the rodents, sadness, and perhaps anger at the rodent mother's failure to come to the babies' rescue. Just as in humans, the crises of the baby mice produce the "the 'love hormone' oxytocin in mothers," who "hurry back to their children and carry them to the safety of their nest" (113).

Dan's refusal to acknowledge the extent and urgency of the infestation fuels a growing resentment, leading to Deepa's brief affair with the humane pest control guy Pierce. Deepa confesses expecting Pierce to make love like a rodent — in line with her earlier debated "Sexual Animal Avatar" theory (105) — another conflation of human and more-than-human but also part of a whole stream of sexual imagery in the story around Dan's inadequacy, phallic pipelines, and vaginal "cavities." In the aftermath of sex with (the now aptly named) Pierce, Deepa's thoughts drift to images of a post-apocalyptic city, the stuff of B-movie sci-fi, with the city consumed by the rodents, herself cast into the stone of urban infrastructure, and the mice crawling over and through her. The affair with Pierce is over, she decides immediately, admitting to herself that "she is both mouse and exterminator . . . there is no house without pests" (114). Opening the blinds of the room upstairs to a view of the city outside suggests her acceptance, too, of the compromised, toxic environment in which she lives: "Somewhere, vats churn and rush with boiling bitumen. Somewhere, molecules catalyze. Somewhere, mice make nests, sneak [into] homes" (115). However, this vision of proximate risks entails neither knowledge nor engagement, as the repetition of "somewhere" suggests.

Overall, the story, unlike others in the "Chemical Valley" section, unrolls as domestic comedy. Reconciliation of Deepa and Dan occurs just as soon as Pierce is gone. Deepa confesses to killing the baby mice — this as she cradles her own child — telling him "she couldn't, she needed to, they were babies, sweet dying helpless babies with no mother and no food" (115); Dan also signals reconciliation. Despite developing

asthma soon after starting work at the plant, thus ruling out a cat for the mouse problem, he brings home a kitten, resolved to cope (medicated) with the symptoms. Deepa gives the kitten the hopeful name Hunter; and as she draws the three to her — husband, infant, and kitten — in the slanting afternoon light, a flurry of sentimental memories of Dan comes over her. The story concludes that night, Deepa lying awake, resolving she will tell Dan of the affair, knowing the pain it will cause, the time needed to heal. She dwells on the mice and the plastic wrapping and foil and diapers, how they dispose of their waste, and thinks of the bodies of the mice, how she is a mouse herself and how she "lost herself and culled her kin." As the kitten purrs her to sleep, Deepa hopes for a new beginning from the mice's decay, a "genesis" and a "wane" (117).

The "Chemical Valley" sequence might have ended with "Oilgarchs," with Deedee and Jenna's solidarity, their leap into "perfect pollution" signalling an embrace of toxic politics and slow activism. Instead, it ends here with "Cruelty," a domestic comedy twinning infestation with infidelity, a compact "mundane novel" with its fantasy offering of "the regularity of bourgeois life" (Bould 34) — or perhaps a cautionary gloss on it. Deepa's sense of domestic life resuming its course is belied by a single fact in the story's exposition. Mention of Dan's "stellar pension" at Streamline (Huebert 108) recalls the grim industry humour reported in "Chemical Valley": "the retirement package is great if you make it to fifty-five" (18-19) — and the sad fate of Jerr's parents, and the precarity of Jerr and Eileen. Deepa may find no mental peace in her everyday routines, for as Reena Shadaan and Michelle Murphy suggest, chemical infrastructures also produce "precautionary consumption" and "healthism" — responsibility for which falls disproportionately on women "to purchase goods that are deemed non-toxic, natural, or organic" (5). These forms maintain a class-bound, individualized mainstream environmental politics, occluding the broader structural violence "made possible by fossil fuel capitalism and settler colonialism" (6). As the final story in the sequence, "Cruelty" might be considered something akin to the "return story" that Gerald Lynch proposes in his account of the short story cycle (28). Indeed, if, as Lynch argues, opening stories present place as a character in its own right, in addition to alluding to some kind of "disruptive element" (25), concluding or return stories restate the main themes of the cycle and illustrate "provisional possibilities" for community and a sense of identity even as they "destabilize, resisting

closure" (31). "Cruelty" would call into question such communal possibilities, certainly equitable community. It would underscore a return to/of something both structured and structuring: domesticity and its politics. Deepa filters climate news from her social media streams; she is likely the high school art teacher who puts a lid on Sapphire's extinction rebellion — her precautionary consumption a false shield, all of this paralleling the tendency of the mundane novel to "tighten its focus, narrow its range — and miss out the world" (Bould 35). This concluding story then brings to the fore the intractable problems of a permanently polluted world and colonial, chemical violence in the face of the mundane ideological obstacles to a dismantling of systems of power and social inequities. Thus, the story's domestic humour masks the profound challenges of contesting petrocolonialism and coming to grips with the climate crisis.

The five stories in the "Chemical Valley" section, set in a fictionalized Sarnia, explore the ways in which chemical infrastructures enact colonial violence, an idea largely absent from Houser's critical ecosickness analyses. As short narratives, they throw readers into the intimate, lived experience of chemical violence, engaging a toxic politics in which characters recognize their place in a permanently polluted world and entertain other forms of agency. By contrast, Houser's readings entertain the possibility of environmental restoration and rely on a notion of environmental politics invested in liberal forms of action that seek to capture publics. Beyond affect and lyric as a mode of defamilization in Houser, Huebert's stories employ something like Min Hyoung Song's "revived lyric," which aims to foster sustained attention to the everyday, displace the human, and imagine moments of shared agency. Song sees in lyric "an almost mystical state where conventional divisions falter"; its compression means that "what matters is the moment and the image rather than larger expanses of time that require literary conventions like characters, story, and plot to fathom" (ch. 2). Other critics agree on this lyric effect: Short stories put us through a "reality warp" (Lohafer 159), orienting us "beyond the facts of the extensional world" (Rohrberger 81), and throwing us into a world without heroes (O'Connor 17), save for the lonely voices of "submerged population groups" (O'Connor 20). Lynch valorizes cycles of stories for presenting "the world and life as seen by stroboscope, held still momentarily, strangely fragmented into new arrangements, moving unfamiliarly in the minds of readers accustomed

to the spatial and temporal panorama of novels" (22). This aesthetic potential of the short story seems to be amenable to a contemporary experience of fragmentation and crisis, not least to an experience of information flows scrolling across cellphone and computer screens but also to certain aspects of ethics explored here — namely, the rejection of heroic action in toxic politics. Huebert's stories gesture towards other modes of action and ethics in a Canadian space of colonial relations structured by extractive capitalism.

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