

CHEMICAL INTIMACIES AND TOXIC PUBLICS

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ABSTRACT

Chemical Intimacies and Toxic Publics

In this dissertation, I detail how capitalism has turned pollution into a generally accepted form of violence perpetuated in the name of economic health. Complete with a corps of risk managers and environmental consultants, neoliberal capitalism has fashioned pollution into a universal standard that functions as an ambient form of socialization. Pollution, I contend, serves as a social apparatus, an atmospheric example of what Jacques Rancière refers to as “distributing the sensible” (2004). Instead of being simply a by-product or unavoidable consequence, pollution serves as a constant reminder of the production/flow of capital and of modernity’s dependency on heavy industries. But beyond its obvious emissions, spills, dumps, and tailing ponds, much of the fallout of pollution remains hidden. Thus, in mapping the social significance of pollution, the dissertation stresses these two conflicting principles: pollution is constantly present but also invisible. Pollution exists in the form of microscopic particles that travel on the wind and in waterways, penetrating ecosystems, neighbourhoods, homes, and bodies so that people are exposed to its poisons as a matter of fact, as a condition of the everyday, as an emblem of one’s modernity.

To counter this general acceptance of pollution, I engage in an ecological storytelling that utilizes comic book imagery, along with a mixture of archival and everyday material (government reports, tourist guides, newspaper clippings, postcards, and children’s drawings), to situate the specific harm done by the ambient toxins, chemicals emitted from specific polluting industries and imposed on specific people and ecologies. I concentrate on two ethnographic sites and two polluting industries, as half of the dissertation examines the politics of lead in Toronto (tracing its historical influence and public acceptance in two working class neighbourhoods), while the other half focuses on a massive petrochemical corridor that is located in and around the small city of Sarnia (in southwestern Ontario) and immediately adjacent to the First Nation of Aamjiwnaang. In addition to the more traditional ethnographic methods adopted in the textual chapters, the comics provide a stream of countermemories that refute neoliberal capitalism and its demand for more of the same.

Acknowledgements

I was truly fortunate to have Cate Sandilands as my PhD supervisor. Cate's mentorship extended to multiple thoughtful readings of my dissertation chapters in which she encouraged and challenged me in such a way that she often seemed to be a few steps ahead of me on the trail, but she never insisted that I had to follow her lead or that there was only one required path. She provided me with a model of the sort of academic that I want to be: an embodied feminist scholar who cultivates and fosters integrated ways of thinking, writing, and doing — an ecological practice — through a patient and generous commitment.

This mode of generous teaching is also very true of Michelle Murphy and Natasha Myers, who along with Cate served as my dissertation committee. Both Michelle and Natasha similarly embody a feminist scholarship that fosters and encourages students to pursue their individual areas of research as part of a diverse community of allies. Michelle and Natasha's ongoing commitment to the Technoscience Salon and other forums of exchange (conferences, activist working groups, and collaborative research projects) has also provided me with incredible examples of the generous academic practice I want to emulate and pass on to my students.

In acknowledging how my dissertation was developed alongside and part of a community of allies, I want to underscore how Kelly Ladd has been an essential friend and collaborator. Not only have we presented our work together at numerous conference panels and workshops, but she and I also co-wrote a paper for a weekend conference on Karen Barad, which I drew from to form my dissertation proposal. From riding bikes through the streets of Copenhagen and Denver, to regular canoe trips on Toronto's waterfront, Kelly and I spent countless afternoons discussing the parallels and departures running through our separate dissertation projects.

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TABLE OF CONTENTS

Abstract	ii
Acknowledgments	iii
Table of Contents	iv
List of Figures	v
Preface	1
Chapter 1: What Does Cosmopolitics Look Like?	3
Chapter 2: Toxicity Takes a Holiday	56
Chapter 3: The Lead Archive and the Toxic Politics of Consensus	83
Chapter 4: The Tale of the Sarnia Nose	132
Chapter 5: In Pursuit of a Regional Sensorium	157
Chapter 6: Drawing a Conclusion	211
Bibliography	222

LIST OF FIGURES

1:	Inside my head and apartment	3
2:	Capitalism manufactures pollution	10
3:	The disappearance of the word “pollution”	14
4:	Developing a slime mold writing	17
5:	Mapping the dark and mundane ecologies of everyday life	35
6:	Comics as an emotional shorthand for fictive truths/true fictions	51
7:	The Lead Menace	93
8:	The Niagara Street neighbourhood in the 1980s	94
9:	OMOE letter to Mr. Lachocki #1	97
10:	OMOE toxicity chart	100
11:	Second OMOE letter – from Air Management	101
12:	Dear Mrs. Lachocki	103
13:	Construction helmet and tomato	110
14:	GET THE LEAD OUT! The pamphlet’s cover and clip-art illustration	111
15:	White children featured on the covers of two key Toronto lead texts	115
16:	Judge Meen’s ruling #1	117
17:	Judge Meen’s ruling #2	118
18:	<i>The Globe and Mail</i> , Nov. 4, 1975	120
19:	Memo from a city medical officer	120
20:	<i>The Globe and Mail</i> , April 26, 1983	121
21:	34 Bathurst Street, then and now	128
22:	Three Competing Guides to Chemical Valley	158
23:	Three schemas of the agential fields of intra-action in Chemical Valley	162
24:	Sarnia’s Bayside Mall	177
25:	Visitor’s Guide to “The Oil Heritage District”	183
26:	Postcard of the Tin Men (and horses) of the Oil Museum of Canada	184
27:	Dow is a Neighbor in <u>Your</u> Home Town!	188
28:	Dow Sarnia Employees Hockey Team	188

29:	Latex Paints	190
30:	<i>STYRON!</i> Chemicals Basic to Canada	190
31:	Woman holding a giant Styrofoam log above her head	192
32:	The Royal Polymer Company featured on the back of the Canadian \$10 bill	195
33:	A rendering of the all-consuming timescale of Chemical Valley's toxic caverns	198
34:	the SLEA Logo	200
35:	Inverted and buried CN Tower	201
36:	Salt caverns as toxic infused brains lodged below the earth's crust	203
37:	Snapshots of the contaminated children's play area in Sarnia's Centennial Park	206
38:	Petrolia Oilers - Peewee Hockey Team Crest	207

Preface

Chemical Intimacies and Toxic Publics was written as a chimera – a swamp thing – that traces the messy politics of ambient toxins, showing some of the ways people are *always already* entangled in the manufacturing and distribution of pollution. The text is a mixture of methods, concerns, and voices, and is meant to be read as part manifesto, part ethnography, part autobiography, and part art object. There are large chunks that are fairly conventional: a literature review, a discussion of methodologies, a clear and debatable thesis, a narrative arc that is developed through site specific chapters. This conventional material helps offset the dissertation's experimental nature: its use of *bricolage* and comic book imagery. The competing formats allowed me to pursue the politics of toxins down two opposing alleyways: consensus and dissensus. While I used a more conventional format to perform close readings of government and corporate documents and poke holes in their appeals to a harmful public consensus (the violent but innocuous perpetuation of a toxic status quo), I used the comic books drawings as an emotional and often blunt shorthand: a way of invoking a range of conflicting feelings that give expression to dissensus (declarations and manifestations of "NO!" to the status quo and its distribution of the sensible).

But there are also lines of inquiry that I intentionally left unresolved: themes, provocations, and feelings to which I continually found myself coming back. The goal was to develop an embodied writing practice without trying to claim a solid foothold that would allow me to move on or suggest that I had managed to push through the globular viscosity of toxicity, capitalism, whiteness, and heteronormativity and emerged, unscathed, on the other side. I kept these unresolved moments to retain this feeling of becoming more and more immersed, entangled, and engulfed in the messy politics of toxins. At some point in the dissertation process I came to realize that if I wanted to retain some of the working contradictions that allow well-known poisons to traffic in the public sphere as manageable risks, I would have to allow the dissertation to do two overlapping things: to drift from one subsection, anecdote, and image to the next; and to pull me into the text so that my vulnerability – as an academic, a son, a citizen, and a breather – would be revealed. If some of my statements seem abrupt – in both the conventional and in the comic book chapters – then I ask the reader to consider that the

uncomfortable fissures such statements create are part of both my relationship to the work and the larger toxic publics about which I write in this dissertation.

In addition to underscoring the everydayness of toxicity, retaining my feelings of entanglement, vulnerability, and exposure was also a way to flag the performative nature of writing a dissertation. Much of my dissertation hinges on the image of a long line of doctoral candidates stepping into a black pool that opens up at their feet in order to be engulfed and transformed. To describe my own particular sense of being pulled into my dissertation, it is important for me to mention that the idea of integrating comic book chapters was not in my original proposal but was something that happened along the way. The first drawings were done after I attended a toxic tour of Aamjiwnaang lead by two sisters, Vanessa and Lindsey Gray (the tour features prominently in Chapter 4). I took a number of photographs while on the tour and I was planning on using them to help capture something of the performative nature of the tour: how it invokes a regional sensorium, calling on the participants to see, smell, hear, taste, and feel what is like to live next door to one of the largest petro-industrial complexes in North America. But these photos fell short in capturing the event. They also seemed invasive, as they read as fairly clichéd and sentimental. On the other hand, my initial comic book drawings, which were based on these photos, had an immediacy that was both emotive and also unobtrusive, both situated and speculative.

The comic book drawings worked on me in two primary ways: (1) they allowed me to insert myself into my critique of industrial emissions; and (2) they forced me to become less wordy and more assertive. For example, I didn't completely formulate the dissertation's anti-capitalist argument until I drew it out as comic book panels. So not only did the comics allow me an emotional shorthand, a way of invoking and mapping a shared archive of toxic public feelings, but they also forced me to recognize and declare my dissertation as a manifesto of dissent. This tension between subtle, personal imagery and abrupt declarations can be found throughout the dissertation and constitutes one of its defining characteristics. So alongside a situated discussion of how humans make toxins and how in turn these toxins remake humans, *Chemical Intimacies and Toxic Publics* is very much about my entangled process: how I worked and drew my dissertation and how, in turn, my dissertation thoroughly worked and drew me.

Chapter 1: What Does Cosmopolitics Look Like?

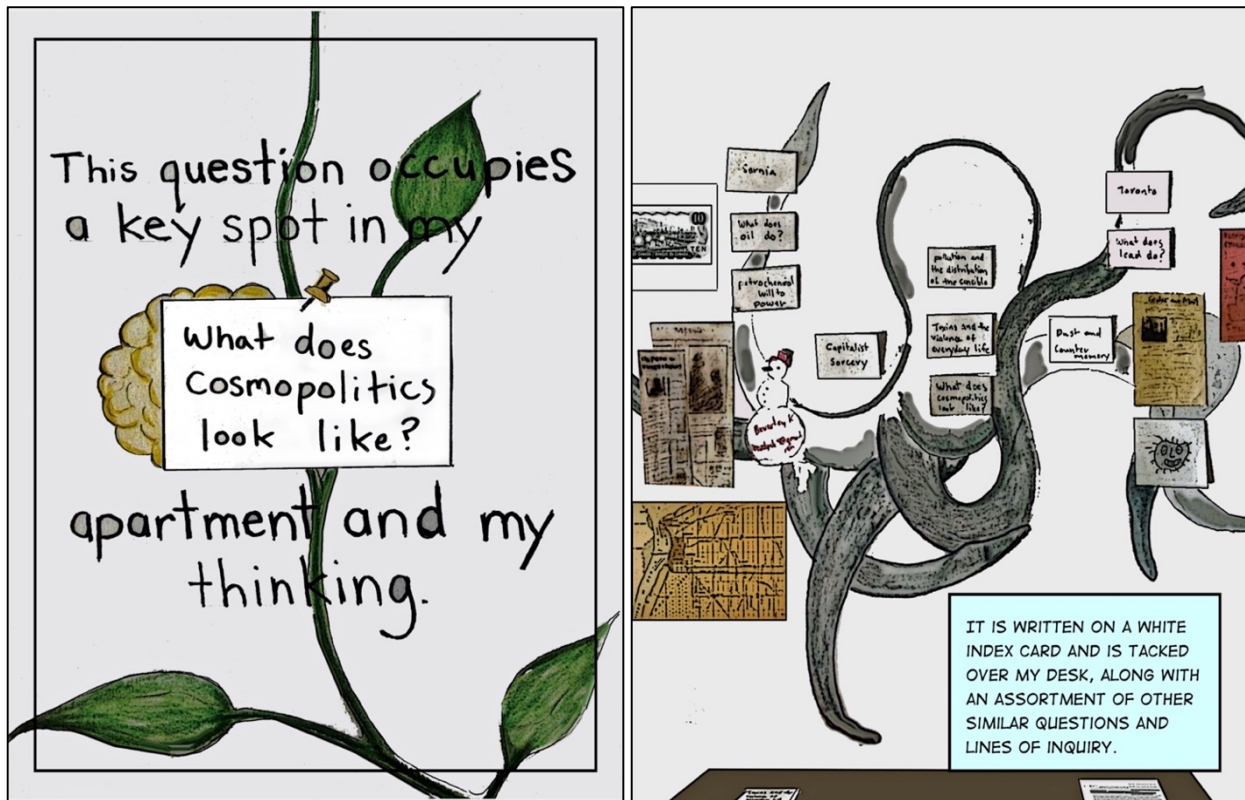


Figure 1: Inside my head and apartment

Introduction: Developing a Slime Mold Writing

What does cosmopolitics look like? This question occupies a key spot in my apartment and my thinking. It is written on a white index card and is tacked over my desk, along with an assortment of other similar questions and lines of inquiry. There are also several images on the wall (including the atomic structure of lead, a child's drawing of dust, and a snowman with the email address of Beverly, a contact in Sarnia), typed lists (including a growing bibliography, a list of important websites, and a glossary of terms), and photocopies of newspaper articles. At different points in the process of researching, writing, and revising this dissertation, this assemblage of cards, images, lists, and clippings has been augmented, disassembled, and moved about to reveal different concentrations or trails.

The question “what does cosmopolitics look like?” is both pragmatic and speculative. It demands to be answered, and then answered again, and then again. It insists on clarity and

specificity, but it also demands the very opposite of closure. While simple answers can be given in the form of facts and logic—cosmopolitics both includes and goes beyond the limits of the all-too-human—the question demands much more. Cosmopolitics can be understood a generative but harrying demand for much more, the insistence that more needs to be said, that there is much more to consider. But this demand is never for more of the same. Cosmopolitics demands that we recognize that the desire for something more and the desire for sameness, more of the same, are two opposing forces. In the demanding spirit of cosmopolitics, this dissertation aims to reveal some of the sorcery behind capitalism and pollution by tracing specific cosmopolitical nodes. More specifically, I want to compose four ethnographic stories that address some of the subtle and not so subtle ways capitalism has befriended pollution, turned it into a constant companion that people are expected to live with, to adjust to, to accept as an unavoidable consequence.

Cosmopolitics is key to mapping this constitutive relationship between capitalism and pollution, as it fully acknowledges how humans have radically altered the geochemistry of the planet, but also ventures beyond human claims of management and intervention by insisting that humans do not monopolize knowing or mattering. Bruno Latour provides some of the theoretical groundwork of cosmopolitics, presenting it as an extensive network that opposes and displaces the human as the seat of agency and meaning. “The presence of cosmos in cosmopolitics,” he states, “resists the tendency of politics to mean the give-and-take in an exclusive human club. The presence of politics in cosmopolitics resists the tendency of cosmos to mean a finite list of entities that must be taken into account. Cosmos protects against the premature closure of politics, and politics against the premature closure of cosmos” (2004: 454). He also substitutes the word *pluriverse* for the word universe as a way to insist that the cosmos is forever expanding but lacks a unifying centre (454).¹ As I argue throughout my dissertation, this idea that life and meaning unfold without a unifying centre is especially relevant to the

¹ Latour attributes *pluriverse* to William James. While James did write a series of lectures entitled the *Pluralistic Universe*, I couldn’t find this particular neologism in that text. I suspect that is Latour is slightly stretching or modifying James to include the American pragmatist in a genealogy of cosmopolitics.

dissemination of pollution, as it too resists our attempts to reduce it to a finite list of offending chemicals that can be traced back to a single source. Pollution matters/manifests in a much more complicated and diffracted form.

To foreground and challenge human exceptionalism, cosmopolitics proposes a more-than-human politics. This call for a radical reconfiguration of how we understand politics is an argument/conversation that Latour helped initiate in his 1993 publication, *We Have Never Been Modern*. In this text, Latour challenges the foundations of modernity by arguing that the Western Enlightened Subject is based on maintaining a strict division between nature and culture. Latour's point is that this division is arbitrary and affords us humans with the delusion of being modern and having control or management over ourselves and the world at large. Our shared delusion of modernity is dangerous because it does not account for the actual messiness of life: how humans are entangled in elaborate hybrid networks as a result of the interplay of cultural and natural designs, forces, urgencies, and effects, which often exceed human expectations and ways of knowing. To challenge the fictive authority of the modern subject, Latour argues for a "Parliament of Things," which involves thoroughly mapping these "nature-culture" storylines or hybrids in which humans find themselves entangled and accept as a matter of everyday life. "Everything changes," declares Latour, "when, instead of constantly and exclusively alternating between one pole of the modern dimension and the other, we move down along [a] nonmodern dimension" (96). What emerges is the active play of things: "quasi-objects" and "quasi-subjects" come together (and move apart) to form events, artifacts, and phenomena. Cosmopolitics can be understood as this continuous assemblage or parliament of things that works to supplant the fossilized bifurcations of modernity, the traditional ways of knowing and dividing up the world in which we supposedly modern humans have foolishly convinced ourselves that we are the sole agents of meaning, knowing, and mattering.

While *We Have Never Been Modern* provides some of the theoretical groundwork of cosmopolitics, it lacks concrete examples of how such a nonmodern mode of inquiry would manifest. One of the goals of this introductory chapter is a literature review: to address the body of texts that I reference in my dissertation and with which I put myself in conversation. Along with Latour, I want to begin this review/conversation by referencing Brett Walker's *Toxic*

Archipelago: A History of Industrial Disease in Japan (2010). It provides an example of a cosmopolitical text, one that specifically addresses toxins and how they physically expose us to a more-than-human politics. In language that has clear echoes of Latour, Walker explains that part of the unnerving quality of toxins is that they do not seem to respect or acknowledge boundaries that correspond with human exceptionalism and our conventional ways of understanding how the world is organized. In the joint names of capitalism and progress, toxins have been woven into everyday life in such a way that divisions that are foundational to modern subjectivity have been thoroughly corrupted:

Earth has become a gargantuan hybrid environment in which we are deeply embedded, one interlaced with complex, historically constructed ecological pathways that in inauspicious instances, eventually lead from industrial facilities to human consumers. Industrial toxins that flow through engineered Earth and its technological systems render useless academic ruminations on the differences between wilderness areas and cities, organic and inorganic, nonhuman and human, biology and technology, or even nature and artifice. Industrial toxins, when finding their way into human bodies, reject such boundaries—even placental boundaries—so it makes sense that we should, too, when tracing them. (16)

With ambient toxins floating in the air, penetrating human bodies and making their way into the blood system and affecting the brain's neuron activity, it has become apparent that toxins matter in such an intimately biological manner that one of the basic tenets of human exceptionalism – that it is only humans who determine what and what does not matter – is revealed to be a tattered and nonsensical mythos. But this intimacy that humans share with ambient toxins does not mean in any way that the designs and interests of human exceptionalism have stopped having an effect. Instead, the cosmopolitics of industrial toxins helps to clarify who benefits from the ongoing dissemination of toxins and who suffers, which regions, neighbourhoods, communities are spared the burden of toxicity and which, in turn, are sacrificed in the name of capital.

This introductory chapter has two intersecting goals. It serves as a roadmap to my dissertation, but as a separate chapter it also has a specific argument of its own. In other words,

I will outline my dissertation and account for its interdisciplinary context – the various authors, texts, ideas, and methods that I have utilized and put myself in conversation with – by making an argument for cosmopolitics. Toxins, I contend, physically expose humans to a cosmopolitical worlding, a messy ontology or way of being that radically displaces human claims of ecological management and sovereignty. But I am also arguing for a nonredemptive cosmopolitics, one that refuses the twin social imperatives of consensus and hope.² To challenge the caustic grasp that capitalism has on life, I offer a non-redemptive form of storytelling, one in which the social inscription and management of pollution is mapped alongside various nonhuman forces or actants as a way to challenge human exceptionalism, to point out the dangers of “ecological sovereignty” (Smith 2011). Rather than invoke a materialism that is unquestionably vibrant, or a cosmopolitics that is persistently effusive, I feel compelled to map dark ecologies, assembling dour stories about the steady flow of ambient toxins and the often mundane but seductive will of consumerism.

A primary goal of my dissertation is to show how toxins matter, how they function as actor-agents that both directly and indirectly inspire forms of social inscription, which is to say

² My refusal of a generative cosmopolitics draws from the critique of capitalism and affect done by a loose collective of queer thinkers, including Lauren Berlant, Eve Sedgwick, Sara Ahmed, Ann Cvetkovich, Michael Warner, and José Esteban Muñoz. These authors have made an effort to acknowledge and make some sense their own feelings—the combinations of loss, failure, frustration, happiness, desire, anger, depression to which they are regularly subject—as a tactic to map the politics of affect. The resulting conversation on the part of these authors can be seen as a concerted effort to queer the heteronormative channels of social inscription by delineating the cultural disciplinary work (the normalization) of our public and private feelings. In a recent publication, *Willful Subjects*, Ahmed describes this effort to deconstruct and queer public feelings as the allotted task of the “feminist killjoy”: “Feminist killjoys,” she declares, “[are] those who refuse to laugh at the right points; those unwilling to be seated at the table of happiness. Feminist killjoys: willful women, unwilling to get along, unwilling to preserve an idea of happiness” (Ahmed 2014: 2). Emboldened by Ahmed’s declaration, I too want to be a feminist killjoy and join this chorus of impassioned-angry-cynical queer feminists.

that that they contribute to the establishment and maintenance of the social codes and figures of normative behaviour. In addition to this socialization, toxins are of course a source of harm, and as such they also inspire antisocial feelings of contempt, anger, pessimism, and dissent. In this chapter, I want to begin mapping these twin processes of socialization and anti-socialization, or what Jacques Rancière identifies as “consensus” and “dissensus” (2010: 38). To this end, I provide a genealogy of cosmopolitics that lays out the main parameters of my dissertation and also begins to fill in specific details. This genealogy is laid out in five sections. The first section continues to draw from an assortment of like-minded critics so as to distinguish cosmopolitics from biopolitics. The subsequent sections take up individual writers who have been central to the version of cosmopolitics that I have cobbled together as my own particular mode of inquiry: Walter Benjamin, Donna Haraway, Ulrich Beck, and Don DeLillo. This divided format is further broken up with periodic sidebars and comic book panels, as a way to address possible gaps.

I more or less borrowed this fragmented format from Latour’s *Reassembling the Social: An Introduction to Actor-Network-Theory*. Latour’s use of this fractured but systematic format is in keeping with his general theme of reassembling the social, showing how the social is itself an assemblage, one that can be thoroughly mapped and readjusted. He speaks of his method (Actor-Network-Theory) as a way of slowing down, adopting the characteristics of an ant: “I was ready to drop this label for more elaborate ones like ‘sociology of translation’, ‘actant-rhizome ontology’, ‘sociology of innovation’, and so on, until someone pointed out to me that the acronym A.N.T. was perfectly fit for a blind, myopic, workaholic, trail-sniffing, and collective traveler. An ant writing for other ants, this fits my project very well” (2005: 9). Similarly, my goal in following this fragmented and somewhat idiosyncratic form of mapmaking is to pursue a slime mold writing, one that forces me to slow down, to backtrack, and move sideways, to aggregate and integrate my arguments with like-minded texts and phenomena, so that I am less likely to gloss over things that have been rendered as minor and coincidental, or have been delegated to the past, or declared abated. The more specific goal of this introductory chapter is both to introduce the particular substantive arguments of the dissertation, as well as to venture into montage, drawing, and speculation, methodological tactics that, I argue, are essential to

pursuing a cosmopolitics of pollution and to answering the question: “What does cosmopolitics look like?”

Section 1. From Biopolitics to Cosmopolitics

On the Biopolitics of Pollution

The argument of my dissertation is deliberately bold: Capitalism has turned pollution into a generally accepted form of violence, perpetuated in the name of economic health. It has fashioned pollution into a universal standard that functions as an ambient message and an effective form of socialization. Pollution, I contend, serves as a social apparatus, an atmospheric form of what Rancière refers to as “distributing the sensible” (2004). Its billowing grey clouds and algae-covered lakes serve as palpable reminders of the constitutive relations between it and capital (surplus wealth). Instead of being simply a by-product or an unavoidable consequence, pollution is a constant reminder of the production/flow of capital and modernity’s dependency on heavy industries, a glaring reminder of the excessiveness and wastefulness of capitalism. But beyond its obvious emissions, spills, dumps, and tailing ponds, many of the consequences or fallout of pollution remain hidden. Thus in my mapping the social significance of pollution, I stress these two seemingly contradictory principles: it is constantly present but also invisible. This contradiction is an essential part of its sorcery. Pollution exists in the form of microscopic particles, motes of dust that travel on the wind and in waterways, penetrating ecosystems, neighbourhoods, homes, and bodies so that people are exposed to its poisons as a matter of fact, as a condition of the everyday, as an emblem or insignia of one’s modernity. Pollution, I contend, can be understood an ambient order of things in which well-known poisons—lead, asbestos, mercury, cadmium, benzene, sulfur—are widely distributed as indelible markers of capitalism’s global sovereignty. Instead of being burdened by pollution, capitalism manufactures it as a palpable form of white noise, a constant refrain or jingle playing in the background.

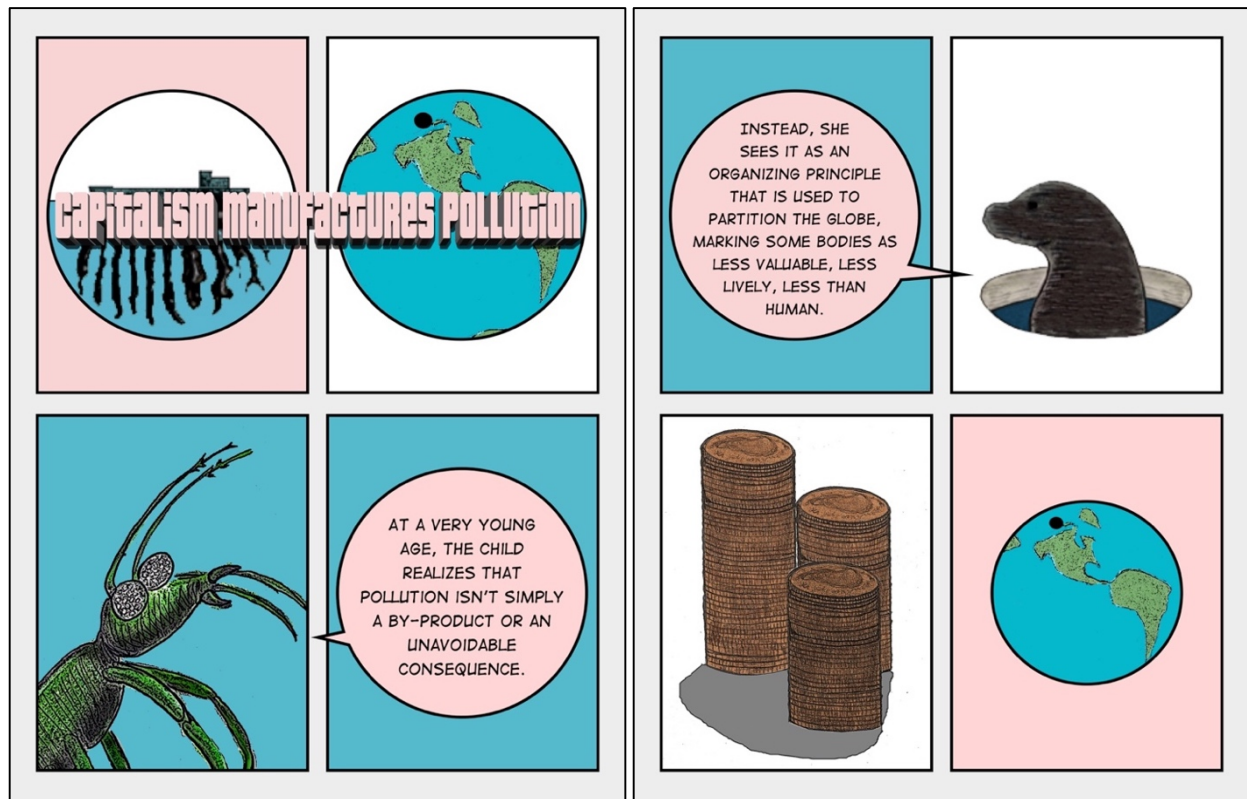


Figure 2: Capitalism manufactures pollution

But the everyday ambience of pollution—how it slips into the background and becomes more or less invisible—is only half of my argument. It gets messier, more complicated. In addition to arguing that capitalism has turned pollution into a generally accepted form of violence, I also assert that this steady flow of pollution can be turned on its head, made visible in moments of dissent. Much of my argument is founded on Michel Foucault's understanding of biopolitics, which he explains as a historic reconfiguration of power so that it manifests less as an exercise of the sovereign state and more as a diffracted and "productive" form of self-disciplining. In this reconfiguration, power is exercise in two principal forms, one "centered on the body as a machine," what Foucault refers to as "*an anatomo-politics of the human body*," and a second more bureaucratic form focused on the body politic, the population as a whole, and "effected through an entire series of interventions and *regulatory controls: a biopolitics of population*" (1978: 139; italics in original). For my combined argument of capital and pollution to take shape, it is important to stress the historical context of Foucault's famous reconfiguration of power, how the introduction or adoption of biopower is directly tied to the

Industrial Revolution and the “invention” of industrial emissions.³ This period, which Foucault refers to as the classical period, saw a massive geographic transformation, as much of the European population shifted from an agrarian society to an urban and industrial society. Europe’s emerging nation-states suffered from population explosions and subsequent public health crises, which in turn called for the sort of government intervention that Foucault distinguishes as biopolitical: the close bureaucratic management of life (and death) through the introduction of a series of disciplinary institutions that have become synonymous with modernity. “During the classical period,” Foucault declares, “there was a rapid development of various disciplines—universities, secondary schools, barracks, workshops; there was also the emergence, in the field of political practices and economic observations, of the problems of birthrate, longevity, public health, housing, and migration. Hence there was an explosion of numerous and diverse techniques for achieving the subjugation of bodies and the control of populations, marking the beginning of an era of ‘biopower’” (1978: 140). Although this often quoted excerpt from Foucault’s *The History of Sexuality: Volume I: An Introduction* serves as a departure point for my dissertation and for much of my thinking, it is also far too neat, far too seamless. It doesn’t allow for the disruptive effects and undetermined affects of things, the ways in which nonhuman forces do not always follow suit or quickly fall into line with institutions of governance, or with human designs and claims of management.

Using Cosmopolitics to Map Pollution and Offset the Deadly Claims of Risk Management

My real argument is with risk management and the claims that polluting industries make. Risk management can be understood as the bureaucratization of pollution, the attempt to govern pollution and give it a public face. The claims of risk management verge on the surreal, as

³ Just as Foucault presents the figure of the homosexual as an “invention” of the nineteenth century (1978: 43), we can also see pollution as a similar invention of the Industrial Revolution. Pollution, in other words, was given its distinct meaning during this period, and in turn it helped define the character of the modern city. For example, industrial centres like London, Manchester, Chicago, and St. Louis were often covered in a blanket of thick smog as a definitive sign of their status as powerhouses of nineteenth century capital.

governmental agencies are given such titles as the Office of Air Management and are mandated to administer the elements. To take on this Herculean task, a vast corps of risk managers has been assembled, working in both government and corporate capacities. These professionally and proficiently trained men and women use a host of virtual tools such as computer modelling to plot the atmosphere based on emission statistics supplied by polluting industries. The general mandate for this corps is to streamline and maintain the flow of capital by implementing such things as cutting labour costs, speeding up production levels, and finding new resources and markets, all to assure profits for investors. In these overlapping pursuits, risk management makes certain claims about and on life, especially about and on the lives of people and nonhuman beings immediately surrounding or downstream from industry plants, refineries, mines, smelters, mills, dams, dumps, pipelines, rail yards, oil fields, and tailing ponds. Risk management is essentially a well-organized form of “capitalist sorcery” (Pignarre and Stengers 2011), which attempts to manage or incorporate life so that these people living in close proximity to heavy industries are expected to bear the brunt of capitalism, to bear witness to the toxic fallout that besieges their community or neighbourhood on an ongoing basis, as well as to endure the high rates of illnesses and fatalities associated with these emitted toxins. All this sorcery is done in the name of “acceptable risks,” a concept conjured to avoid mention of the consequences of being on the wrong side of town and the wrong side of a ledger sheet. My real argument is with the word “risk” itself, how this word is mobilized to distract from the actual violence that is done in its name, a violence that is done to actual fleshy bodies, communities, and ecologies.

As a way to combat the antiseptic and generally accepted violence of risk management and to recoup the word pollution – to regain some of the significance that the word used to carry – I have developed a cosmopolitical mode of inquiry, a purposely crowded and gritty version of biopolitics. As Donna Haraway explains, cosmopolitics defies a concise definition. “Forbidding both the dream (and the nightmare) of a final solution and also the fantasy of transparent and innocent communication, cosmopolitics is a practice for going on, for remaining exposed to consequences, for entangling materially with as many of the messy players as possible” (2008: 106). Similarly, for Isabelle Stengers, who used the word as the title for her

seven volume opus, cosmopolitics is best understood as an open proposal, a creative experiment, an ecological practice. She is adamant that it should not be understood as a grand theory, an explanation for everything. Cosmopolitics, she explains, is unmanageable, resisting our claims of mastery, our attempts at summation, and our penchant to deploy terminal phrases such as “therefore,” “thus” and “and so”:

It does not refer to any particular cosmos, or world... It [also] does not refer to a project designed to encompass [everything], for it is always a bad idea to designate something to encompass those who refuse to be encompassed by something else. In the term cosmopolitical, cosmos refers to the unknown constituted by these multiple, divergent worlds, and to the articulations of which they might be capable. This is opposed to the temptation of a peace intended to be final, ecumenical... There is no representative of the cosmos as such, it demands nothing, allows no [conclusive] ‘and so.’” (2005: 995)

Cosmopolitics recognizes the agential plurality of life and how this plurality serves as a dynamo or engine, but it also resists the desire for airtight summations, to pinpoint the source of this dynamism and reduce it to either a divine or earth-bound narrative.

Karen Barad is included in this genealogy. She doesn’t use the term “cosmopolitics” but she can be seen part of a concerted effort to challenge human exceptionalism by arguing for a more-than-human understanding of how meaning and mattering are produced. Her notion of “agential realism” can be easily understood a cosmopolitical form of map making. In *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meeting* (2007), Barad uses the neologism “intra-action” to explain how matter and meaning emerge as the result of things and half things, ideas and partial ideas, becoming entangled:

The notion of intra-action is a key element of my agential realist framework. The neologism “intra-action” *signifies the mutual constitution of entangled agencies*. That is, in contrast to the usual “interaction,” which assumes that there are separate individual agencies that precede their interaction, the notion of intra-action recognizes that distinct agencies do not precede, but rather emerge through, their intra-action... *the notion of intra-action constitutes a radical reworking of the traditional notion of causality*. I can’t emphasize this point enough. A lively new ontology emerges: the world’s radical

aliveness comes to life in an entirely nontraditional way that reworks the nature of both relationality and aliveness (vitality, dynamics, agency). (33, italics in original)

Barad's insistence that meaning and mattering are conjointly produced as the result of agential fields of intra-action is key to the set task of mapping the contours of a cosmopolitics of ambient chemicals. The diffracted and agential nature of industrial particulate is a point that I frequently return to in this dissertation. The dissemination of airborne and waterborne industrial toxins exposes us to an agential world or ontology in which things are never solely containable or singular in purpose. Instead, toxins exist as events in the making, as things in between, as both diffused and compounded, both concrete and elusive.



Figure 3: The disappearance of the word "pollution"

Inspired by this growing list of cosmopolitical thinkers—Latour, Walker, Haraway, Stengers, and Barad—I similarly appeal, in this dissertation, to the messiness of life and offer a speculative but historically situated engagement with capitalism and pollution. In mapping my argument, a picture of a giant sea creature emerges, a mass of tentacles with pulsating suckers.

But there is no head, no brain, no main administrative building. Instead, meaning is made and unmade; it becomes frozen and thawed, fossilized and contested, in the endless entwining of matter and thought. Like all other things, humans become ensnared in the worlding and whirling of the more and more. We become human, fixed as the all-too-human, but we are also set adrift as the more-than-human, all as a result of this becoming entangled, finding ourselves embroiled in what Latour refers to “sociotechnical imbroglios” (Latour 1991:7) and Mel Chen correspondingly calls a “messy biopolitical imbroglio” (Chen 2012: 6). Cosmopolitics insists on the messiness of biopolitics, insists on including other-than-human actors, vectors, and relations in the production of power, meaning, and affect. Cosmopolitics is a version of biopolitics that insists on the unpredictable and unmanageable fur and fury of nonhuman life.

The Writing Lessons of Slime Mold:

As suggested above, instead of an octopus or squid, slime mold would be a more appropriate heraldic creature for this dissertation. But what exactly am I trying to achieve by adopting a slime mold writing? What, in other words, are the rhetorical and material lessons of slime mold? What can these microscopic creatures teach us about writing and life? I am mostly fascinated by their displays of “microbial socialization”: the ability of some species of slime mold to aggregate, to group together in the thousands and perform coordinated actions as a whole. For example, thousands of hungry *Dictyostelia* will collectively form a slug-like body and will move en masse to seek out food. And in a communal act of “altruism” these creatures will collectively sacrifice their lives to form spouting columns that are topped with spore pods. These acts of slime mold sociality are not triggered by or organized around a central-command cell. Instead, the signal to assemble is determined and relayed by multiple pheromone trails that individual cells have left in their travels.

Researching these amazing creatures further, I was surprised to find that the feminist science studies scholar Evelyn Fox Keller played a central part in figuring out the micromechanics of aggregation. Working with a mathematician, Lee Segel, Keller developed a mathematic formula that supported the idea that aggregation emerges as a result of the collective signals emanating from the pheromone trails of individual slime mold cells. Their

study was published in 1970 but was largely ignored by biologists. It is only recently with the scientific and popular interest in emergence that Keller and Segel's paper is being acknowledged as an important contribution to microbiology. In a short reflection Keller recalls how biologists at the time refused to see slime mold aggregation as a decentred and leaderless form of organization and insisted on the fixed idea that there must be a principle leader or "pacemaker cell" responsible for this phenomenon. "For reasons that are still not clear to me," states Keller, "the question of what triggers the initial differentiation [aggregation] – was *not* the question of interests to most biologists or mathematical biologists working on the subject. In fact, the pacemaker view was embraced with a degree of enthusiasm that suggests that this question was in some sense foreclosed. The assumption of the pacemaker cells was felt to be so natural, it readily explained the phenomena [*sic*], that the question I had begun with simply disappeared" (Keller, 1985: 152-153; emphasis in original). This type of collective and persistent blindness is clearly not limited to slime mold biologists but is part of a general cultural bias that looks for pacemakers in all walks of life.

While there is much more that can be learned about/from these microorganisms, this quick review is enough to posit a slime mold writing: a slow and globular approach to observation and notetaking, which has proven especially helpful in the task of assembling ethnographic narratives of pollution. Industrial emissions, spills, and waste do not lend themselves to stories that follow a standard narrative arc with a definite beginning and ending. In order to capture something of the uneasiness and uncertainty generated by lingering toxins, I found myself having to adopt a much more circular and tangential mode of storytelling, one that relied heavily on anecdotes and built up an assembled text by drifting/slithering from one subsection to the next and often circling back to early points in the chain of events. Adopting this slime mold writing was also helpful in representing dissensus: how it for the most part manifests as a series of communal acts that do not necessarily have a clear or central organizing structure or sole leaders/pacemakers, but instead build on earlier associated events and improvised group actions.

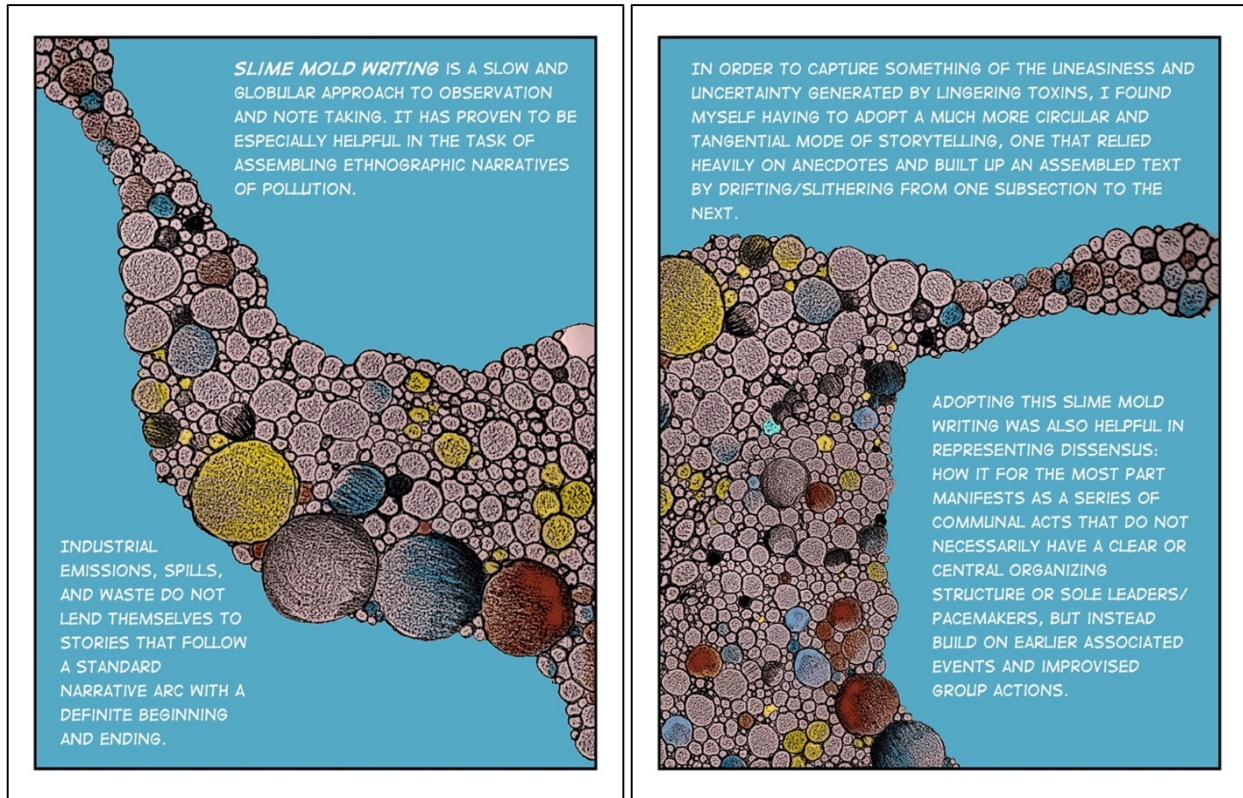


Figure 4: Developing a slime mold writing

A Brief Note on Agential Realism and Montage

In constructing the different chapters of this dissertation, montage or bricolage (Lévi-Strauss 1966: 16-36) also proved to be a helpful tool in mapping the disruptive and mobile politics of toxins. Sergei Eisenstein provides a definition of montage that fits well with cosmopolitics and the agential pheromone trails of slime mold: “Just as cells in their division form a phenomenon of another order [another thing], the organism or embryo, so, on the other side of the dialectic leap from the shot, there is montage” (1985: 97). As opposed to using montage to create continuity and seamless narratives, Eisenstein champions “collision”: a montage that is disruptive and draws attention to its own partial and particular production of meaning. He uses montage to cobble a story, but also to break things up, to form unsettling juxtapositions, to highlight the queer amongst the ordinary. By drawing attention to the traces of meaning between and among things, Eisenstein’s filmmaking can be readily understood as a form of agential realism, a way to capture some of “the world’s radical aliveness” by showing ideation in

action, using conflicting imagery to show how ideation or the production of meaning is an agential process that arises through the interplay of things and thoughts (and half things and half thoughts).

A strict timeline for a genealogy of the idea of cosmopolitics, in which I try to determine who said what first and to whom, would not reflect the slime mold motif of this dissertation. But before reading Barad or Stengers, I encountered Eisenstein and Norman Brown, who also offers a rudimentary map of ideation and the production of matter and meaning. “Meaning,” states Brown, “is not in things but in between; in the iridescence, the interplay; in the interconnections; at the crossroads. Meaning is transitional as it is transitory; in the puns or bridges, the correspondence” (Brown 1966: 247). This epic and perpetual contest of meaning taking place at the crossroads of or in between things was something we learned about at art school, as we fed off the found objects and bare bone performances of DADA, relished in the daring and glamorous appropriations of pop art and the Situationists, and absorbed the queer cut-up methods of William Burroughs, Kenneth Anger, and Jack Smith. We formed punk bands and art collectives, shot grainy super 8 films and sloppy rock videos, made fanzines, demo tapes, and flip books, inhabiting this terrain of correspondence by thinking and creating stories with everyday vernacular things, ideas, and anecdotes. Collage, montage, conceptual art, installation art, performance, site specificity: we saw them as effective means or pathways in pursuing an ecology of things, with the goal of creating juxtapositions, unearthing countermemories, troubling the normal. We also learned to leave some things unsaid, as a way to leave us wanting more and to acknowledge that we were all groping in the dark, high on the fumes of experimentation. These art school lessons were lessons in a cosmopolitical mode of inquiry, and I find myself returning to them as effective and affective ways to map the politics of toxins.

Nonhuman Actors Kicking at the Seamless Flow of Capital

While I have drifted somewhat from my specific focus on capitalism and pollution, this personal genealogy of cosmopolitics helps to explain why and how I am arguing two seemingly contradictory positions: While pollution works as a socializing apparatus and a beacon of capitalism in action, it can also “kick back” and disrupt the seamless flow of capital. In other

words, pollution both facilitates and hinders capitalism. A cosmopolitical inquiry demands such a contradictory trajectory, one that acknowledges that pollution is a complex assemblage of natural and cultural forces and does not easily align itself with an either/or mode of thinking. My reasoning would be seriously flawed if I were to invoke the messiness of cosmopolitics, gesture towards this diffracted and agential giant and mode of thinking, and then try to shoehorn all of the possible meaning of pollution into a rigid argument of biopolitics and capitalism. Instead, in this dissertation I pursue a double-edged argument, one that charts the attempts of ecological sovereignty made on the part of industry and governing bodies, and simultaneously discredits these attempts by pointing to specific forms of environmental/social injustices that have occurred in the combined names of capitalism, management, progress, and national and global economic stability. As stated above, I have composed four ethnographies, site-specific stories, each dealing with the environmental repercussions of risk management and how different chemicals and nonhuman forces have kicked back, impeding the smooth operations of capital and inspiring dissent. This is what the cosmopolitics of toxins looks like: pollution matters in ways that both enable and impede the flow of capital, that inspire both social consensus and moments of dissensus.

By rehearsing some of the central themes of cosmopolitics, I want to show that I am not alone in depicting the production of life and meaning in this complex and contradictory fashion. My claim that pollution serves capitalism but is also often the cause of anticapital sentiment is derived both from my field research in Toronto and Sarnia and from reading a number of like-minded ecological texts that similarly insist that the advent or adventure of things taking shape is never limited to humans or human understanding. These texts provide me with models of how to chart the effects and affects of capital, of how to delineate the biopolitics of life by referencing the specific ways life and death are managed, while also insisting on the mattering or worlding of nonhuman beings, forces, things. This two-pronged approach, in turn, produces a structured but necessarily messy critique: one that carefully delineates the specific ways capitalism has successfully managed to streamline and organize life on a grand scale, but also underscores how the success of capitalism has made people extremely vulnerable to nonhuman

forces, forces that often kick back and make themselves known as noncompliant/unmanageable forms of mattering.

For example, Nicole Shukin makes this sort of two-pronged argument in *Animal Capital: Rendering Life in Biopolitical Times* (2009). As her title suggests, Shukin extends the productive and inscriptive power of biopolitics to include the socialization performed on and by nonhuman animals. In addition to carefully detailing some of the specific ways nonhuman animals have been enrolled into structures that are essential to the flow of capital, she also provides examples of what could be understood as an animal anticapitalism: showing how animals and nonhuman forces can dramatically impede the flow of capital, rendering it contaminated, unsafe, and fatal. Shukin presents her argument as a way of mirroring the tautological character of animal capitalism, which involves animals being slaughtered en masse and physically rendered into capital, while, at the same time, they are also rendered ideologically through their use in a variety of popular representational formats. From the fat and bones rendered into the gelatin used to make film stock, to the bestiary of anthropomorphic animals that are used as company spokespersons in television ads, animals have been transformed into cultural agents. This thorough incorporation of nonhuman animals into neoliberal capitalism has, among other things, made people throughout the world vulnerable to bacterial diseases transferred through capitalism's transglobal food chains/delivery systems. Bovine spongiform encephalopathy (BSE, or mad cow disease), listeria, and avian flu constitute incited and uncontrollable "naturecultures" (Haraway 2003: 12), monstrous hybrids that corrupt these global food chains. In outlining the clashing layers of her critique, Shukin emphasizes how capitalism cannot help but be messy and contradictory in its attempts to manage life and death: "A perfect tautology of market and species life is never seamlessly or fully secured but is continuously pursued through multiple, often competing, and deeply contradictory exercises of representational and economic power. In actuality, the mimicry of animal capital is a 'messy,' contested, and unstable assemblage of uncoordinated wills to power, as well as immanent resistances to that power" (2009: 18). I further contend that this idea of bacteria, viruses, and nonhuman animals kicking back and disrupting the flow of capital in such a catastrophic fashion gives Shukin's text a distinctly dark or sinister tone, one that is absolutely in keeping with the brutal but orderly way

animal life is casually rendered into capital and what Giorgio Agamben identifies as “bare life” (1998).

A similar dour critique of capital can be found in Mel Chen’s *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (2012), especially in a chapter that focuses on the transglobal politics of lead. Chen details how the animacy and unease associated with lead has inspired forms of racist panic expressed in popular media about the dangers of lead-painted children’s toys imported into North American markets from China. This chapter is especially grim because it emphasizes the thorough, but often subtle, social integration of racist narratives, how they seem to be everywhere in culture so that they appear to be expressions of common international concerns. Chen shows how these popular and salacious narratives use the figure of the vulnerable white child to perpetuate racist clichés of animality, dirt, disease, and abnormality. As in Shukin’s text, there is a double edge to Chen’s argument, in which the animated and unnerving imagery of affect is shown to both serve and disrupt capitalism’s attempts to order and partition life. In regard to the unpredictable and unmanageable nature of affect, Chen asks us to consider both the order and the unease that lead and lead poisoning can jointly animate. “What biopolitical story, for instance, could a discussion of enlivened toxins like transglobal lead, their effectivity and affectivity in young white bodies, and their displacement of deathly black and contagious Asian bodies tell? At the least, a consideration of the animation of otherwise ‘dead’ lead and its downstream effects and affects challenges and extends given notions of governmentality, health, and race beyond a national [or exclusively human] framework” (2012: 7). The idea that we need to mine/rag pick popular culture to expose the biopolitical work of toxins, the social and physical chemistry that is performed by supposedly inanimate or dead matter, is of primary importance to my dissertation.

On the subject of the strategies and stories we need to develop to effectively (and affectively) critique capital, I also need to acknowledge the influence of Tim Choy’s *Ecologies of Comparison: An Ethnography of Endangerment in Hong Kong* (2011). Choy’s anecdotal ethnography, and especially his writing on air pollution, serves as model for my dissertation. He refers to his method as “an anthropology of air” that works to substantiate the politics that saturate the air that we breathe. Focusing on Hong Kong, Choy traces toxic stories to show how

the simple act of breathing is *always already* political, *always already* enmeshed in uneven relations of power and privilege. “How are Hong Kong’s air spaces distributed?” asks Choy. “Who gets to occupy those with the cleanest air? Who breathes the street? Who breathes mountains? Who breathes the sea? Who breathes flies?” (158). I am also drawn to the performative nature of Choy’s anecdotes, how his storytelling is key to his way of making the invisibility of toxicity visible. His nuanced anecdotes reveal the subtleties of living with toxins: he does not pursue clear-cut stories of environmental injustice with the intention of laying blame at the feet of corporations or consumer culture, stories that operate on a static principle of “us against them.” Instead, his anecdotes trace a much slower moving and more fragmented political ethos that weaves itself into the daily lives of people in Hong Kong and elsewhere, so that it becomes next to impossible to detach oneself from this ethos and attempt to imagine life otherwise.

In his accounts, Choy underscores some of the persistent flexibility of capital, how it is able to recover and adapt to a given setback or disaster. For example, he relates an anecdote about Chinese white dolphins living in Hong Kong and how, in the 1990s, they came to occupy a contradictory position in which they were used as the face of both wildlife endangerment and commercial development. The anecdote details how the construction of a new mega-airport, intended to assure Hong Kong’s prominence as a commercial and cultural centre, destroyed much of the dolphins’ habitat and forced them to seek food in areas of high shipping traffic. This shift in habitat resulted in many gruesome deaths in which dolphin corpses washed ashore, having been chewed up by ship propellers. Despite gory newspapers headlines and photos, the Hong Kong Handover Committee adopted the Chinese white dolphin as a “mascot for the gala ceremonies marking Hong Kong’s transformation from British colonial territory to Chinese Special Administrative District” (Choy 2011: 24-25). Choy’s point is not to ascribe corporate arrogance to one side and environmental consciousness to the other, but instead to force us to acknowledge that the inscription of power that allows for dolphins to be the public face of both endangerment and urban development, to both disrupt and smooth over the operations of capital, is much more complicated than our usual narratives of right and wrong, greed and kindness, ignorance and knowledge, would suggest. Inspired by these “enlivened” but dark

accounts offered by Shukin, Chen, and Choy, I too pursue a double-edged critique of capital, one that both challenges and extends the politics of pollution by insisting on the unmanageable and often dark effects and affects of toxins and other nonhuman forces.

A Brief Note on the Ecology of Comic Books

I think it is important to reference the dark tone running through these three texts as something of a unifying principle. I see a similar dark voice running through alternative comics, a common denominator linking the various texts of Robert Crumb, Harvey Pekar, Lynda Barry, Daniel Clowes, Chris Ware, and Seth together. By including comics in my dissertation, I hope to invoke some of the pessimism, anger, and pathos associated with these artists/authors. I don't want to reduce all these authors to a monolithic category, but I do want to point to them as a way of reiterating the need for a non-redemptive form of storytelling, one that attempts to undermine the status quo, the ceaseless demand for more of the same. In other words, I have included comics in this dissertation because they help me tell non-redemptive stories, stories that refuse the convention that humans will eventually realize their mistakes and only need to be educated or made conscious of their faults and their breaches of justice and ethics.

The comic book format also provides me with an ecological schema, a way of diagramming an expansive cosmopolitical worldview. Like slime mold, a typical comic book is made up of separate cells that aggregate to reveal a collective organism/narrative. But comic books are never read in a strictly chronological order, simply moving from cell to cell as a means of arriving at the end point. The grid format of the comic book ultimately resists the dual compulsion for linearity and closure and instead offers a much more ecological mode of reading and thinking. Yes, comics are commonly referred to as a "sequential art" (Eisner 2008: xvii, McCloud 1993: 5), in which the eye is drawn across the page and towards the final frame/cell, but many comic book artists intentionally break from this narrow definition and utilize layouts, drawing styles, and storylines in which the eye is also drawn backwards, up and down, so that the comic can be read again and again. For example, critics have celebrated the work of Chris Ware for practicing an experimental comic book storytelling that alternates the traditional comic book grid format with elaborate blueprints, diagrams, mock advertisements, and product

inserts so as to radically expand the grammar of comic books (Cates 2010; Wolden 2010). Similarly, critics have drawn attention to the metonymic nature of Charles Burns' comic books: how he fashions in a "horror comic ecology" by emphasizing isolated objects (body parts, trash, old photos, trees, animals) to construct fragmented and anecdotal stories (Kunyosying 2014). Rather than being limited to a bird's eye view, or providing what Haraway calls "the god trick" (1991: 189), such comic books portray a fractured or diffracted cosmos, in which perspective is forever partial, multiple, and decentred. Yes, in comics we are given an overview, a view from afar, but this is very much a (god) trick, a short-lived ruse that is there so the carpet can be pulled from under our feet. In a flash, readers are sucked into the belly of the whale. They fall down the rabbit hole or are submerged in a swamp, becoming entangled in the weeds. Yes, certainly there are legions of comic book superheroes who sustain the god trick and who clearly fight on behalf of the consensual demand for more of the same. But comics are also populated by misfits, degenerates, losers, and villains, along with an assortment of mutant nonhumans, human-plant hybrids, ghosts, vampires, aliens, and other chimera (Fawaz 2016). These graphic and exaggerated anti-heroes provide the pleasure of losing oneself, which is the very opposite of the unified/consolidated perspective of the god trick. Any sense of mastery or godliness loses its footing, is turned on its head when we find ourselves infected with an alien virus that causes us to break out in sores, shed our skin, and be shunned by our family and friends, or we wake up to find ourselves transformed into a human-sized cockroach, or we are a mouse in a concentration camp controlled by cats.⁴

I have explained why comics are here, but I should also explain why they don't appear throughout. Why, in other words, did I not write my dissertation solely in a comic book format? My answer is a practical one: by having comics throughout I would lose more than I would gain.

⁴ This reference is to three of my favourite comic books: Charles Burns' *Black Hole* (2003), an allegorical science-fiction story of an AIDS-like virus that plagues the teenagers of a small town in 1970s America; Robert Crumb and David Zane Mairowitz's retelling of Franz Kafka's *Metamorphosis* in *Introducing Kafka* (1994); and Art Spiegelman's *Maus: A Survivor's Tale* (1986), his epic account of his father and mother's experience of Auschwitz, in which he also tries to account for his own troubled relationship with his father.

While comics allow me to do certain things that I couldn't do in a conventional dissertation format, they are obviously not conducive to going into great detail, necessary to such things as a literature review or doing close readings of relevant documents. I also like the juxtaposition between these two formats, how they too brush up against each other so that they draw attention to their contrasting advantages and limitations.

I will have more to say about comic books, drawing, and montage below, but I want to continue my genealogy of cosmopolitics by turning to Walter Benjamin and including him in my inquiry as a progenitor. I am primarily interested in Benjamin's use of montage, allegory, and aphorisms as a way to speculate and assemble constellations of countermemory. It is also from Benjamin that I learned the combined critical importance of dust and the figure of the rag picker: how they serve as both concrete and allegorical sources of dissent.

Section 2: Walter Benjamin and the Anticapitalism of Dust

I very much like that I found most of my primary source material for this dissertation under a layer of dust. Dust, particulate, and contamination are all key to my dissertation, as is the act of sweeping things under the carpet. I also very much like the fact that the word "dust" sits in the middle of the word "industry." Early in the dissertation process, I realized that to uncover and grapple with the general acceptance of industrial pollution, its ordinariness or familiarity as an unavoidable consequence of contemporary everyday life, I would need to pursue unresolved stories and minor events. These incidents might have generated expressions of public anxiety and concern at one time but were eventually put out of people's minds: they created a stir but were then more or less forgotten. I also knew that I also needed to assemble stories in which people were shown to be exposed to toxic emissions on an ongoing basis, as a matter of geographic and socioeconomic circumstances, as a matter of following institutionalized practices and doing business as usual. The task involved finding material that embodied certain paradoxes: phenomena and situations that have been buried but continued to linger, that have been generally overlooked but are inescapable, that have been supposedly thoroughly "accessed" and "managed" but are characteristically unmanageable, and that have been viewed as simultaneously minor and catastrophic, quotidian and tragic. In seeking out these contradictions, dust served as an important clue or signal. For example, if the material was

dusty, if it was obvious that it hadn't been requested from the library stacks in a long time, if it was stuffed in a neglected file cabinet, if I found it in a damp basement, if it was industry promotional material that had lost its gloss, I knew that I was on the right track. The layer of dust both signalled and constituted a form of social and historical neglect, a trivialization of particular events, phenomena, and documentation in which the priorities, concerns, and anxieties of specific people living in specific neighbourhoods and communities had become at certain points in time insignificant in relation to the demands for the status quo, for doing business as usual, for moving forward into the future but always staying the same.

In *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* (1991), Susan Buck-Morss presents Walter Benjamin as a philosopher of dust, someone who realised the importance of dust in his critique of capitalism and the mythologies of progress. Dust also served an important clue or signal for Benjamin, as he saw the dusty Paris streets and the dusty national archives as quasi-magical or messianic sites of hidden meaning, places in which the phantasmagoria of capitalism, its absolute ghoulish and fetishistic nature, would reveal itself. Channelling Benjamin's aphoristic prose, Buck-Morss states, "Dust settles over Paris, stirs, and settles again. It drifts into the Passages [the Paris Arcades] and collects in their corners, it catches in the velvet drapes and upholstery of bourgeois parlors, it clings to historical wax figures in the Musée Grévin. The fashionable trains on women's dresses sweeps through dust" (95-96). Benjamin's goal was to awaken his readers from the slumber of capitalism so that they remove the literal and metaphoric dust from their eyes that had accumulated and impaired their vision. But Benjamin did not see this act of waking up from the dreams of capital as a simple matter of recognition or political consciousness. In other words, the spell of capitalism was not easily broken. To counteract it Benjamin engaged in a slow, methodical writing project that produced a steady stream of aphorisms and fragmented notes filled with allegory. He saw this practice of embellishing his writing with an assortment of mythical figures and scenarios as a form of counter-spell. The only way to dislodge the full force of capital was to match it with an equally dreamlike writing style. Thus, we get these sorts of brocaded sentences, heavy with allegorical figures and scenes: "Capitalism [appeared as] a natural phenomenon with which a new dream sleep fell over Europe and with it a reactivation of mythic powers... The imminent

awakening is poised, like the wooden horse of the Greeks, in the Tory of Dreams” (Benjamin 2003: 391-392).

In addition to using allegory to combat the fantastic allure of capitalism, Benjamin also referenced popular culture and drew imagery from such things as advertisements, newspaper headlines, theatre playbills, and fashion trends. He also relied on a series of street figures, including the flâneur, the sandwich-board man, the street walker/prostitute, and the rag picker/dustbin man in order to represent his practice of cultural and political critique. These figures embody, in a variety of ways, the different spectacular and consumptive charms of the nineteenth century capitalist city, as well as its continuous excesses, wastes, and abuses of power. Drawing on the work of Benjamin, cultural studies scholars have argued that scopophilia and the spectacle of consumption were in effect “invented” in the nineteenth century (like the figure of the homosexual) and, in turn, these things shaped the unique and defining character of modern, cosmopolitan life (Debord 1967; Friedberg 1993). Scopophilia and spectacle, in other words, helped to infuse the emotive and irresistible temperament of consumerism that enthralls the citizenry of the capitalist city. Intense or hyper consumption still very much marks contemporary cities as distinctly cosmopolitan (Jameson 1991; Urry 1995), even though the grand department stores of nineteenth century Paris may have lost much of their sheen and glamour, mutating into cookie-cutter malls, suburban plazas, and nondescript chain box-stores. Similarly, chaotic scenes of “Black Friday” lack the seductive charms of shopping that Emile Zola describes in *The Ladies Paradise* (1883), but the cosmopolitanism of a city is still very much understood in regards to its busy streets and shopping districts, and in the spending power of its bourgeois population and the tourists it attracts.

What fascinated Benjamin were the inherent negative consequences of capitalism: how its excessive displays of wealth and pleasure were accompanied by a proliferation of waste, disease, and hardship. And it is here, at this conflictual node in the public psyche, that Benjamin situated the psychic or cultural work of dust and the rag picker. Rather than pursue the streetwalker and the flâneur as urban muses who embody both the pleasures and spoils of capitalism, I am more fascinated by the rag picker and how s/he fashions found objects from the refuse/excesses of capital. My aim is to approach the material-semiotics of chemicals as a rag

picker and use an assortment of readymades (found objects, documents, and anecdotes) to show how the combined forces of risk management and industrial pollution have remade the world so that ambient chemicals have become constant (but often invisible) companions, something people are simultaneously encouraged to be aware of and to accept as an inevitable consequence. The specific politics of ambient industrial chemicals in Toronto and Sarnia may seem quite removed from the Paris Arcades of the nineteenth century, but like Benjamin I am very interested in the dust of capitalism and how this ambient but concentrated dusting has marked and marred contemporary life as distinctly modern.

Inspired by Benjamin, specifically by his use of ephemera, I have composed a series of four chemical constellations or assemblages, each relying on such things as regional tourist brochures and maps, street flyers, print advertisements, family snapshots, postcards, industry promotional literature, newspaper clippings, public health pamphlets, and community newsletters. I used these items of marginalia, in conjunction with an empirical and anecdotal writing style, to produce an ethnography of countermemory. Following Benjamin, I have taken up the practice of montage as an attempt to “brush against the grain of history” (Benjamin 1968: 257). My ultimate aim is to disrupt the consensual will that allows polluting industries to carry on as usual, to produce and disseminate endless volumes of ambient particulate, which is known to contain an assortment of well-known poisons. Following Benjamin, I have looked to the archive and to the routine habits and encounters of everyday life for countermemories, out of place things, clues, suggestions, feelings, and urgencies that depart from the consensual demand and slumber of more of the same.

Section 3: Site Specificity, Ecological Entanglement, and the Dark Side of Cosmopolitics

A man whose narratives could be credited as mirrors of reality was a *modest man*; his reports ought to make that modesty visible.

—Steven Shapin and Simon Schaffer

We are not immediately present to ourselves. Self-knowledge requires a semiotic-material technology linking meanings and bodies.

—Donna Haraway

One of the key lessons of science studies is its demonstration of the different ways knowledge production and the inscription of power are entangled by grounding claims and ideas in the specifics of actual places, people, and events. This lesson lies at the centre of Donna Haraway's foundational essay, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," in which she argues for situated or localized forms of inquiry that are inherently messy, partial, and rich in details, so as to forestall closure and reduction in our ongoing searches for truths and ethical ways of thinking and being. But to argue for the messiness and partiality of life, to follow the trouble and uproot contradictions, is not to subscribe to sloppy or underdeveloped thoughts and practices. Instead, Haraway wants to strengthen science, objectivity, and truth by situating them in actual bodies. "I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims" (1991: 195). By pursuing an empiricism that focuses on particular and contrasting lives and bodies as productive sites of meanings, we can avoid the lures of universals, broad generalizations that gloss over difference and that are used to forge proclamations that attach authority and power to certain figures at the expense of those who do not conform to, mirror, or parrot these proclamations and figurations. Knowledge and truth claims become situated as they are shown to be connected to actual people's lives and experiences and are understood as subject to change with shifts in history and in practices of everyday life.

While Haraway's "Situated Knowledges" was originally published almost 30 years ago, a clear sign that it is still very much relevant is the fact that the spellcheck function in Microsoft Word has underlined the word "knowledges" as a spelling mistake, insisting that knowledge can only ever be a singular entity. While the spellcheck does allow for a "s" at the end of "truths" and "worldviews," acknowledging the possibility of competing subject positions, modes of being, and even varied objectivities, it rejects the idea that the world harbours multiple knowledges or partial knowings. This insistence on the part of the spellcheck coincides with the orthodoxy that insists that numbers and measured values don't lie and that there is only one concrete or fixed reality out there, so whatever apparatuses we may deploy to measure the composition of such elemental phenomena as lead, mercury, carbon, air, water, or blood, we

should arrive at an identical set of facts and conclusions and confirm knowledge as a singular view from nowhere in particular.

One of Haraway's main objectives in "Situated Knowledges" is to remind readers that our experiences of life are never fully fixed but are always in a state of becoming, always under construction. She also wants to champion a conflictual notion of objectivity, to show how objectivity is *always already* partial and situated despite orthodox claims of an untainted realm of truth, an objective view from nowhere. These ideas of objectivity are embodied in the fictive but very real figure of the impartial scientist, a key target that Haraway wants to deflate. This impartial scientist was the product of the Western Enlightenment, and was in turn used to fashion its main embodiment: the reflective and rational subject (Shapin and Schaffer 1985; Latour 1993; Haraway 1997). Infused with this authority, the impartial scientist acts as the expert but "modest witness" (or the hired environmental consultant), an all seeing position that allows him/her, humbly, to point out fixed and unquestionable truths, which just happen to match with the phallogocentric urgencies and desires of a transglobal capitalism, which just happen to buttress an Euro-American imperialist worldview. To combat this hegemonic science, Haraway argues for pragmatic knowledge practices that are based on an awareness that expressed views, theories, and summations are always politically and historically entangled, and as a result partial and subject to change:

Feminism loves another science: the science and politics of interpretation, translation, stuttering, and the partly understood. Feminism is about the sciences of the multiple subject with (at least) double vision. [...] Above all rational knowledge does not [should not] pretend to disengagement: to be from everywhere and so no where, to be free from interpretation, from being represented, to be fully self-contained or fully formalizable. Rational knowledge is a process of ongoing critical interpretation among 'fields' of interpreters and decoders. Rational knowledge is a power-sensitive conversation (195-196).

Haraway's insistence on a fleshy and situated understanding of the world is central to my critique of neoliberal capitalism and its delineation of the world in terms of abstract risks rather

the imposition of harmful practices that have direct negative consequences on specific people, communities and ecosystems.

But while Haraway is critical of the conventional understanding of objectivity, she is equally critical of social constructionism, which she refers to as “the boys in the human sciences” (192). Haraway is adept at understanding cultural politics, and extremely thorough in her stories of the socialization of science and matter, how semiotics and material reality, words and physical things, become entangled in regimes of power. She challenges, however, the extremely metaphysical (and tautological) position that represents life as simply the product of culture, that equates life with the representation of life (although she does not name anyone directly, one might single out someone like Jean Baudrillard, whose work was at its zenith at about the same time as “Situated Knowledges” was written). Much of social constructionist theory, written in the name of sociology, structuralism, poststructuralism, postmodernism, and cultural studies underscores the socialization of meaning and life and leaves it at that, or proclaims that nature is a cultural construct and on that basis writes off science as a discreditable practice. For Haraway, it is not enough to declare that science is a myth-making practice, or to argue that the natural world is never solely natural or real but exists as a cultural artifact. She underscores the foolishness or irresponsibility of showing how scientific practices are central to the distribution of power, functioning as myth-making tools that can be used to reinforce ideas of race, gender, and sexuality, and then completely rejecting science as a one-sided and homogeneous practice that cannot help but reinforce the status quo. Instead, Haraway is arguing for a feminist and situated science, a retooling of science to fashion other myths, other cosmological but partial worldviews, that don’t attempt to fossilize truths as an objective set of things and ideas that unfold as a matter of pure coincidence.

In rejecting the figure of the impartial scientist (the boys and girls in the white lab coats), Haraway is calling for an active and experimental science, in which scientific expertise and activism are combined rather than understood as two rival positions, and in which critical practices are developed so as to mobilize dissenting worldviews and narratives. “Decoding and transcoding plus translation and criticism; all are necessary. So science becomes the paradigmatic model not of closure, but of that which is contestable and contested. Science

becomes the myth not of what escapes human agency and responsibility in a realm above the fray, but rather of accountability and responsibility for translations and solidarities linking the cacophonous visions and visionary voices that characterize the knowledges of the subjugated” (196). I have tried to use the idea of a revitalized science that helps track “the knowledges of the subjugated” as a guide for the critical practices that I adopt in this dissertation. More specifically, I am interested in local or situated forms of knowledge production – including but not limited to forms of citizen science – that work against the steady flow of capital and the dissemination of industrial toxins.

While Haraway champions a feminist technoscience, she is still very much critical of the conventional claims and systematic forms of violence that are done in the name of science, objectivity, and technological progress. At the same time, she insists that while science has certainly been used to propagate violence and forms of sexism, racism, nationalism, colonialism, and homophobic panic, the complexity of matter and an engaged pursuit of science ultimately resist reductive narratives that fossilize narrow and hegemonic modes of thinking. For example, the human genome has remained stubbornly resistant to efforts to reduce the complexity of life to social Darwinism or to a selfish gene, or to something that secures racial purity, or to the magic chromosome that indelibly marks homosexuality (the fabled gay gene). There is a big difference between pointing out the complex interconnections inherent to life, its fluid networks and relations, and saying, hubristically, that the truth of this complexity is simply a matter of what we humans make of the world. Humans do not go about structuring the world according to relative biases and beliefs (despite their best efforts). Instead, life resists our human inscriptions, and what emerges is a much more engaging and unpredictable contest of meaning in which humans are not the only producers of knowledge.

Still, I find myself departing from Haraway’s powerful brand of thinking with regards to the unpredictability of the contests of meaning in which humans become entangled, as I head in a darker, more pessimistic direction than the cosmopolitics she describes. In contrast to the collection of symbiotic figures that Haraway ask us to “think and live with” (2003)—cyborg, onco-mouse, chicken, companion animal—I find myself compelled to track darker ecological narratives that leave less hope of redemption. While Haraway often populates her texts with

gothic and science fiction figures (monsters, vampires, golems, giant squids, cyborgs, and aliens), there is no overtly dark or sinister side to her version of cosmopolitics: from chickens to cyborgs to Cthulhu, all of her emissaries of the cosmos make themselves available as more or less positive forms of worlding. For example, writing specifically about the onco-mouse and its place as a nature-culture hybrid in delineating a feminist technoscience, Haraway describes her combined interests in cyborgs and earthly and extra-terrestrial monsters as a queer and performative kinship:

Cyborg anthropology attempts to refigure proactively the border relations among specific humans, other organisms, and machines. The interface between specifically located people, other organisms, and machines turns out to be an excellent field site for ethnographic inquiry into what counts as self-acting and collective empowerment.... The relocated gaze [of these monstrous figures] forces me to pay attention to kinship. Who are we in this odd world of promising monsters, vampires, surrogates, living tools, and aliens? How are natural kinds identified in the realms of late-twentieth-century technoscience? What kinds of crosses and offspring count as legitimate and illegitimate, to whom and at what costs? Who are my familiars, my siblings, and what kind of livable world are we trying to build? (1997: 52)

This is where my version of cosmopolitics departs from Haraway's: I am not attempting to form an alliance with toxins. While I argue that the heavy industries of global-neoliberal capitalism have made ambient toxins our familiars or companions, I am not interested in presenting toxins as promising monster surrogates. While the configuration of monsters and norms, the illegitimate and the legitimate, is clearly relevant to the fear and the repercussions associated with toxins – how they are often invisible, can penetrate the human body and its defenses, wreak havoc on communities, and have been linked to genetic mutation – it would be extremely problematic to represent poisonous chemicals as kinship surrogates that help us to think and live differently. Toxins may inspire fear, anger, and dissensus, but this in itself does not offset the harm and sadness that they have on people's lives. Where in Haraway's effusive cosmopolitics of monstrous kinship would we situate the material-semiotics of lead, PCBs, asbestos, mercury, and other such poisons?

Clearly, not all the properties that the circulate in our worldings, the various things and partial things that we share the earth and our flesh with, are lively or life enriching: a great number of these actors are characteristically harmful to life. Thus, rather than represent cosmopolitics as a terrain in which we can pick and choose the actors with whom we want to forge queer but enriching symbiotic companionships, I am much more interested in tracking a dark, foreboding cosmopolitics. On a related note, perhaps Latour's analogue of a "parliament of things" isn't that helpful, either, if it causes people to think that all things and half things out there want to form generative or harmonious alliances with humans. The parliament of things is also comprised of figures, forces, and urgencies that are primarily a source of harm and clearly line up on the dark side of the cosmopolitical divide, no matter how entangled it might be. Similarly, while the periodic table can itself be seen as a parliament of things comprised of life giving chemicals, it is also made up of invisible neurotoxins that have the ability to get under our skin and into our blood, bones, brains, and thoughts in a blunt and destructive fashion. My insistence on the destructive companionships that we humans have forged with toxins and other unsavoury figures is in many ways a lesson that I learned from Haraway, but it also presents a gap between us. This gap, in turn, helps me articulate a non-redemptive version of cosmopolitics.

On The Swarm of Actant Objects-Subjects

Politics, before all else, is an intervention in the visible and sayable.

—Jacques Rancière

A vital materialist theory of democracy seeks to transform the divide between speaking subjects and mute objects into a set of differential tendencies and variable capacities.

—Jane Bennett

To further explain what I mean by a non-redemptive cosmopolitics, I want to turn Jane Bennett's celebrated publication, *Vibrant Matter: A Political Ecology of Things* (2010) and briefly rehearse her main argument. The book serves as a model of how to reference the entanglements of things so as to complicate the overlapping conventions of agency, collective will, and the public sphere. Bennett is clear in her intentions: "Why advocate the vitality of

matter? Because my hunch is that the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth destroying fantasies of conquest and consumption. It does so by preventing us from detecting (seeing, hearing, smelling, tasting, feeling) a fuller range of nonhuman powers circulating around and within human bodies” (ix). By focusing on an assortment of disparate things, including earthworms, stem cells, fatty acids, trash, and metals, Bennett argues for an expansive ecology of things. This earthy and microbial materialism eventually leads her to a reconfiguration of the public sphere and of what/who should be considered political actors or actants: “A more materialist public,” she declares, “would need to include more earthlings in the swarm of actants” (111).

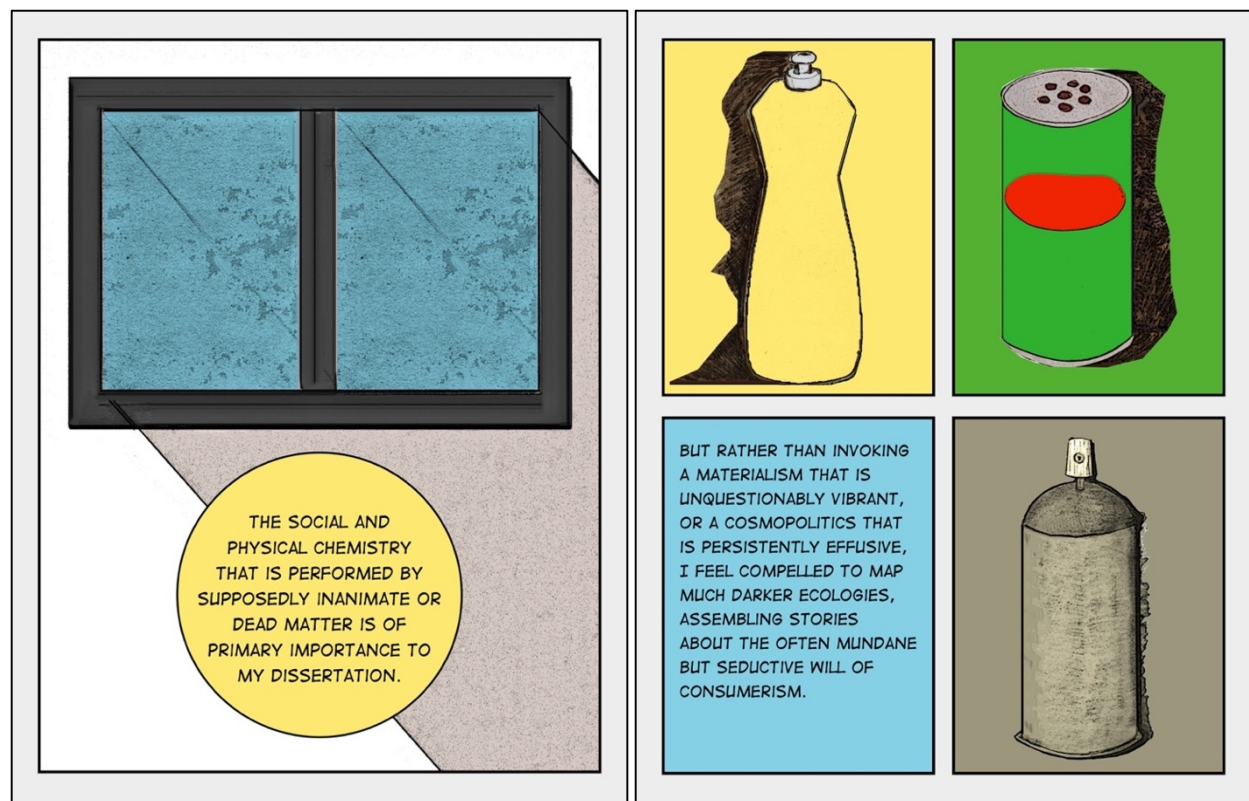


Figure 5: Mapping the dark and mundane ecologies of everyday life

In this reconfiguration of what counts as political, Bennett invokes Rancière and his formulation of politics as an intervention in the “distribution of the sensible,” in which the part that has no part makes itself known. She quotes directly from Rancière’s *Disagreement: Politics*

and Philosophy (1999), to argue for a decentred notion of politics, one that happens at the margins and manifests as disagreement, dissent, protest, anger, interjection. As Bennett writes,

The democratic act par excellence occurs when the demos [the people who make up the collective population] does something that exposes the arbitrariness of the dominant “partition of the sensible.” This is the partition that has been rendering some people visible as political actors while pushing others below the threshold of note. Politics, as Rancière frames it, consists not in acts that preserve a political order or respond to already articulated problems, but is “the name of a singular disruption of this order of distribution of bodies.” [...] For Rancière, then, the political act consists in the exclamatory interjection of affective bodies as they enter a preexisting [*sic*] public, or, rather, as they reveal that they have been there all along as an unaccounted-for part. (105)

Like Bennett, I borrow from Rancière and argue that to give a full account of the cosmopolitics of pollution we need to acknowledge that the chemistry of ambient toxins is political: the distribution of the sensible and the distribution of airborne and waterborne industrial particulate are one in the same.⁵ I also use Rancière to underscore the political interventions of local activists, how they disrupt the neoliberal distribution of the sensible by deploying local forms of knowledge production that make the invisibility of toxins visible through such things as toxic tours, using plastic buckets and dust busters to gather air samples, and organizing a blood lead street fair. But I don’t agree with Bennett’s key assertion that the acknowledgement of swarming actants, of other producers of meaning and mattering, would somehow be enough in itself to inspire less destructive violence on the part of humans. It is not enough to simply point out that matter is vibrant and that this vibrancy extends into the public sphere. “I believe that encounters with lively matter can chasten my fantasies of human mastery, highlight the common materiality of all that is, expose a wider distribution of agency, and reshape the self and its interest” (122). Like Haraway, there is a frustrating uniformity to

⁵ Rancière would have a problem with this idea that nonhuman entities can be political, as he strictly adheres to the Aristotelian notion that humans are distinguishable as the political animal, the animal with a voice (Rancière 2010; 37).

Bennett's public sphere of vibrant matter, as all the various nonhuman actants seems to vibrate or matter in a rather neutral fashion (what she refers to above as "the common materiality of all that is"). While such an ecological reconfiguration of the public sphere would be a radical challenge to human exceptionalism, what is glaringly absent from Bennett's political ecology is any specific critique of the ecological politics of capital. In fact, capitalism is not mentioned once in the text. This absence ultimately makes for a rather bland version of ecological entanglement in which things are out there generating effects and affects, but it is still up humans to inscribe context/meaning/value to them and to the world at large. This understanding of a vibrant or generative materialism is certainly more inclusive of who and what matters, but it borders on a cosmic theology in which human redemption is just a matter of recognizing that we share Earth with other agents, agents that are somehow meaningful but also neutral in regards to interests, desires, and designs. Such a redemptive understanding of materialism, I contend, simply reiterates human hubris and mastery on a grand scale and does not address the precise or situated effects nonhuman actants help bring about, including the effects and affects of toxins. In other words: Yes, I share the world with ambient particulates of lead, mercury, asbestos, cadmium, benzene, sulphur dioxide, carbon monoxide, nitrogen oxides, ethylene, and ethane, but this acknowledgement by itself does little in the way of addressing the caustic hold capitalism has on life.

Toxins matter in distinctly destructive ways. They enter into the public sphere as an ambient but invisible presence and achieve an unsettling sense of intimacy with humans, routinely ending in illnesses and fatalities. The politics of this floating particulate is a politics of harm waged on specific bodies that live in specific places. To pursue this politics, to diagram it and give it more shape (without the intention of being able to completely inscribe, contain, or capture it), I want to return to the subject of dust, the dust in our noses and the continuous onslaught of dust pumped into the air and water as a part of doing business as usual. The next thinker that I want to engage is Ulrich Beck, the sociologist most associated with risks and the demand for risk management. But the conversation I pursue with Beck is much different than the kinship I share with Haraway and Bennett. While I take considerable pleasure in reading and

wrestling with Haraway and Bennett and I struggle and take care to offset my work from theirs, it is the exactly opposite with Beck.

Section 4: The Toxic Event and the Everyday Violence of Risk Society

Flecks of lead and arsenic the size of a penny had fallen on the town, and fluoride vapours had turned leaves brown, etched windows and caused bricks to crumble away. Residents were suffering from skins rashes, nausea and headaches. There was no question where all of that originated. The white dust was pouring visibly from the smokestacks of the factory.

—Ulrich Beck

Same old song, just a drop of water in an endless sea
All we do crumbles to the ground though we refuse to see
Dust in the wind
All we are is dust in the wind

—Kansas

Perhaps this pairing of epigraphs is insensitive, the American soft rock group Kansas singing about existential dust in the wind and the pragmatic or matter-of-fact German sociologist speaking of real dust falling on a city and leaving its acidic mark on plants, buildings, and people's bodies. But the central focus of Beck's famous publication, *Risk Society: Towards a New Modernity* (1992), is not on real bodies or even real dust, as he makes an argument for the risks posed by dust rather the actual *harm* that it causes. Rather than titling his book *Harmed Society: The Dangers Incurred in a New Modernity* and addressing the specific fallout of heavy industries, Beck is much more interested in constructing an existential or metaphysical argument about the potential risks of heavy industries and how these risks serve as yet another moment of modern consciousness. His project is not to chart where the fallout of heavy industry actually lands and the specific ensuing consequences, but to ponder the mobility of dust, how it is able to travel vast distances and threaten people whose lives have been carefully removed from the original source of dust. He emphasizes how the dangerous clouds of heavy industries can travel across

borders and oceans and cannot be contained or localized. Like Kansas, Beck is speaking metaphorically, of figurative dust, winds, risks, and poisons. He is not interested in the specific physical and social fallout of dust, its cultural and palpable particularities, but rather sees toxic events as yet another way to speak about the figure of the western cosmopolitan subject.

Let me be frank: Beck angers me. His graphic picture of penny-sized flecks of lead and arsenic, vapours of fluoride, skins rashes, nausea, and headaches, is just that: a mobile, transparent picture, a spiritless ghost. He doesn't follow it up with any sort of fleshy description, any sort of information that might anchor it, give it the weight of a specific historical context. The reader is not meant to pause or reflect on the precise geographic details of this supposed toxic event, as Beck wants to draw our attention to a supposed act of reflection, what he speaks of as a matter of bearing witness. In his scenario, the seemingly pragmatic questions put to a witness—when, where, who, how, why—are left unasked and unanswered, rendered insignificant and secondary. Here, Beck turns *dust* into *risk*: the former coats bodies and houses, clogs drains, floats in through windows and get into people's lungs; the latter is a matter of speculation, projection, and worry about the future. The hypothetical nature of Beck's dust places him firmly in the realm of metaphysics. I further contend that the sociology of reflection that he posits only ever reflects back a mirror image of itself and, as a result, it constitutes a socialization of privilege, a sociology that purposely attempts to remove itself from tangible bodies and concrete locales.

Being much more interested in articulating the risk of dust than detailing its specific harm, Beck posits a tall tale of modernity that switches the focus away from the actual victims of industrial pollution to the potential victims, victims who also double as witnesses and responsive cosmopolitan subjects. "What follows," he declares as an opening salvo, "is written in the mode of an early nineteenth century observer, on the lookout for the contours of the as yet unknown industrial age.... we are eye witnesses – as subjects and objects – of a break within modernity, which is freeing itself from the contours of the classical industrial society and forging a new form – the (industrial) risk society" (9). Beck seems simply to be pointing out that as the wealth generated by transnational capitalism increases, so does the inevitable threat of environmental repercussions on a global scale, and this shift has in turn brought about a change

in how people understand modernity. Certainly, transglobal pollution is linked to the rise of transglobal capitalism. The combined act of scaling up and exporting the more harmful and heavier polluting industries throughout the globe has clearly transformed how people see and experience life. But what bothers me is the familiar ring in this opening declaration. Beck seems determined to resuscitate the cosmopolitan western subject – the phantom forged and fostered by René Descartes in *Meditations* (1641), and by Immanuel Kant in *The Critique of Pure Reason* (1781) – and in the process he is willing to ignore the suffering that is imposed on actual bodies in specific locations.

Throughout *Risk Society*, Beck invokes “we” as a collective but exclusive configuration, as a subject that witnesses its own global sense of importance, its own cosmopolitanism. For example, it is invoked in the book’s main thesis: “The thesis of this book is: we are witnessing not the end but the *beginning* of modernity – that is, of a modernity *beyond* its classical industrial design” (10). This metaphysical tautology is also familiar: the witness is both the subject and object being witnessed. The subject witnesses him or herself as a witness, seeing and confirming him or herself as a reflexive/modern/global subject. Beck’s opening scene of self-witnessing and self-fashioning echoes the way Foucault begins *The Order of Things* (1970) with a similar scene of the modern subject bearing witness to himself/herself. But Foucault offers a very different set of summations. As an example of modern self-fashioning, Foucault charts the crossing eye-lines in Diego Velázquez’ crowded portrait, *Las Meninas*, underscoring how this painting of the Spanish royal court of King Philip IV (and similar forms of “classical representation”) works to both secure and disrupt the viewing subject: here, Foucault shows how the central gaze allotted to the viewer is both captured and elided, as the viewer is absent from the frame but reflected back as the key authorial position, simultaneously there and not there. While Foucault presents this painting as an example of the structured but arbitrary rationale that lies behind the western subject and the authority/masterful point of view that he commands, Beck presents the self-reflection inspired by transglobal toxic events as an “entrepreneurial” occasion or initiative that shores up the western subject as inherently cosmopolitan, as the unquestioned seat of reason and global justice. While Foucault is clearly interested in pointing out the lures and fissures of the modern subject, stressing its fictive and

transitory nature, Beck eagerly subscribes to this version of self-fashioned modern subjectivity, complete with its unquestioned status as a self-evident (and perhaps also modest) witness, one who is able see and act on the manifest risks of modernity.

Beck goes on to clarify how this “reflexive modernization” has arisen, how “we” have long moved beyond modernity’s classical industrial framework and the earlier subject positions it imposed: “Unlike the factory-related or occupational hazards of the nineteenth and the first half of the twentieth centuries, these [new forms of risks] can no longer be limited to certain localities or groups, but rather exhibit a tendency to globalization which spans production *and* reproduction as much as national borders, and in this sense brings into being *supra*-national and *non*-class-specific *global hazards* with a new type of social and political dynamism” (13; italics in original). But I fail to see is how this scaling up of industry – and the subsequent scaling up of what Beck cavalierly refers to *supra*-national and *non*-class specific *global hazards* – could possibly be seen as an opportunity for reflexive modernity. Why would this supposed new moment of reflection not simply perpetuate more of the same, the same sorts of reflexive thoughts and actions that brought about this scaling up of industrial pollution and the global dissemination of industrial toxins in the first place?

Several pages later Beck introduces what he calls “a boomerang effect.” “Risks of modernization,” he explains, “sooner or later strike those who [financially] produce or profit from them. They contain a *boomerang effect*, which breaks up the patterns of class and national society. Ecological disaster and atomic fallout ignore the borders of nations. Even the rich and powerful are not safe from them” (23, italics in original). What Beck sees as unnerving or shattering (but ultimately an opportunity for a consolidating reflection) is the idea of toxic clouds of industrial fallout drifting across a vast terrain so that they threaten and dislodge the comfort and slumber of the rich and powerful. Beck’s elaboration of the boomerang effect is meant to be brutal and one-sided: The West has lost its other, its sacrifice zones, and now the violence it has perpetuated on the outside world has come back to haunt it. To be sure, toxic events can travel great distances and threaten people who assumed they were safe from such catastrophes. What I strongly disagree with is Beck’s representation of mobile toxic clouds as a great leveler that is supposed to inspire a modern or cosmopolitan way of being that can no

longer ignore the dangers of being modern and cosmopolitan. His assessment of the boomerang effect clearly overlooks the undemocratic and toxic *relations* that help constitute this reconfigured modernity.

Having addressed this boomerang effect, Beck goes one step further: “*Smog*,” he stresses, “*cares not a jot about the polluter pays principle*. On a wholesale and egalitarian basis it strikes everyone, independently of his or her share in smog production.... In this way, with the globalization of risks a social dynamic is set in motion, which can no longer be composed of and understood in class categories... Anyone affected by [risks] is badly off, but it deprives the others, the non-affected, of nothing. Expressed in an analogy: the ‘class’ of the ‘affected’ does not confront a ‘class’ that is not affected. It confronts at the most a ‘class’ of not-yet-affected people” (39-40; italics in original). This point in Beck’s argument is the one at which I lose my temper and toss the book across the room. Not only does he use industrial pollution as a means to re-establish the Western subject, but he also does so in a manner that completely disregards the significance of the very real and localized effects of industrial pollution. In other words, he sacrifices the pain and anguish suffered by local and specific beings in order to enshrine the faceless and transparent Western subject as once again the centre of the universe and the seat of all significant meaning and action. Beck’s logic is circular: he references the global and strictly maintained system of class or economic inequality to argue that class, economics, and geography are no longer issues of importance in the distribution of pollution. I can’t overlook this tautology. I am forced to retrieve my copy of the book from the other side of the room. It is second hand, well worn, and thoroughly marked up, giving me the impression that I am not the first to toss it across the room.

Beck further claims that gender and the hierarchy of the family have also been eliminated by this cosmopolitan reconfiguration of risks and modernity. “In the welfare [or socialized] states of the West,” he argues, “reflexive modernization dissolves the traditional parameters of industrial society: class culture and consciousness, gender and family roles. It dissolves these forms of the [former] conscience collective [...] in a *social surge of individualization*” (87; italics in original). It is never clear in Beck’s argument if this surge of individualization extends to the unfortunate “class” of the “affected” or if it just pertains to the

apparent non-class of the not-yet-affected, further suggesting that he is not interested in bodies that actually experience or feel the impact of dust, risks, and poisons. He also does not consider the reflections and actions taken by the people who live alongside or downriver from heavy industries and experience toxic emissions on an ongoing basis. Why would their situated experiences of smog not be significant in reflecting and responding to the geopolitics of pollution? Why would “they” not be included in “our” responsive form of cosmopolitan ethics and justice? As Mick Smith states, “Beck misconstrues ethics and the way it can inform public power.... His theoretical framework dissolves precisely those concerns about our ethical responsibilities towards nature and the other people which comprise the core of environmental politics, interpreting them as merely one more mysterious form of reflexive reaction” (2011: 148). There is something truly toxic in Beck’s dismissal and recuperation of the physical and economic suffering of those others that live outside his familiar rhetoric of modernity, reflection, and action.

Interestingly, Beck refers to the invisibility of toxins and calls for the fabrication of scientific tools or instruments that purposely mimic sensory organs and work to counteract this invisibility: “The focus is more and more on hazards which are neither visible nor [otherwise] perceptible to the victims; hazards that in some cases may not even take effect within the lifespans of those affected, but instead during those of their children; hazards in any case that require the ‘sensory organs’ of science – *theories, experiments, measuring instruments* – *in order to become visible or interpretable as hazards at all*” (1992: 27, italics in original). Beck also comes very close to Haraway in demanding a reconfiguration of science and objectivity so that the two are much more situated in the actual lives of people:

What becomes clear in risks discussions are the fissures and gaps between *scientific* and *social* rationality in dealing with the hazardous potential of civilization. The two sides talk past each other. Social movements raise questions that are not answered by risk technicians at all, and the technicians answer questions which miss the point of what was really asked and what feeds public anxiety... Scientific and social rationality do [often seem to] break apart, but they remain at the same time interwoven and interdependent... To modify a famous phrase: scientific rationality without social

rationality remains *empty*, but social rationality without scientific rationality [and tools of measurement] remains *blind*. (30, italics in original)

This call for a scientific rationality that attempts to circumvent both the invisibility of toxins and the imposition of stubborn forms of cultural blindness, is the closest Beck comes to questioning his own assumptions.

There are also many points in *Risk Society* in which Beck seems to be on the verge of warning of the dangers of detachment, in which he seems to be stressing the specificity of the harm caused by pollution: how it is imposed in specific ways, on specific people, and in specific places. But in the same breath he argues that the specificity of these individuals is secondary or overshadowed by the *individualism* of the cosmopolitan, global subject. For example, I had to read the following excerpt several times to make sure I was following Beck's dismissive line of argument correctly:

One could almost say, we seen it all before, there is nothing new. But the systematic differences stick out.... These are the hazards that employ the language of chemical formulas, biological context and medical, diagnostic concepts. This constitution of knowledge does not make them any less hazardous.... On the contrary, intentionally or not, through accident or catastrophes, in war or peace, a large group of the [global] population faces devastation and destruction today, for which language and the powers of our imagination fail us.... But it only *threatens*. Only? Here another essential difference is revealed [a difference from the older and more contained threats of "classical industrialization"]; we are dealing today with a *threatening possibility*, which sometimes shows a horrified humanity that it is not just a possibility, but a fact in *abeyance* (and not just a chimera of dreamers). (52, italics in original)

Here, the arrogance of Beck's argument is rather stunning. In the same breath that he gestures to specific human suffering, this suffering only figures sociologically and politically as a way to restate the risks that such toxic events represent to the Western cosmopolitan subject. There is simply no room in Beck's schema for the individuals who fall outside his sphere of bearing witness, those people who are not only exposed to incidents of horrific *abeyance* (a rupture or suspension in the regular order of things) but experience them with such frequency that they

lose their abeyance and, to a certain degree, come to be experienced as a matter of *continuance*, as a matter of fact.

Section 5: The Toxicity and White Noise of Everyday Life

Chemical infrastructures have histories. But these histories refuse to remain in the past. Gaps in time, between chemical emissions and effects, work to support the regulatory fantasy that the chemical infrastructure is safely contained as good business. The chemical industry calls this Responsible Care™. However, on occasion the chemical infrastructure does spike into visibility with a tragic event – the actions of chemicals become acute and no longer incremental.

—Michelle Murphy

A few minutes later, back on the road, we saw a remarkable and startling sight. It appeared in the sky ahead of us... It was the black billowing cloud, the airborne toxic event, lighted by the clear beams of seven army helicopters... The enormous dark mass moved like some death ship in Norse legend, escorted across the night by armored creatures with spiral wings. We weren't sure how to react.

—Don DeLillo

A version of Beck's boomerang effect is featured in Don DeLillo's satirical novel, *White Noise* (1985), as a train car carrying a notorious hazardous chemical ("Nyodene D.") is accidentally ruptured near the idyllic college town of Blacksmith in Middle America, sending up a "black billowing cloud" (127). The novel's narrator and protagonist Jack Gladney and his family find themselves thrown into the thick of the event and have to evacuate their home in the middle of the night. Piling into their station wagon, they flee to a designated shelter, trying to avoid the unpredictable path of this menacing cloud. Earlier that evening, Jack attempts to assure his precocious son, Heinrich, that everything will be okay and in the process comes very close to Beck: their lives are purposefully removed from the typical scenes of toxicity that his son sees on television. "I'm not just a professor," Jack calmly states, "I'm the head of a department. I don't see myself fleeing an airborne toxic event. That's for people who live in mobile homes out in the scrubby parts of the county, where the fish hatcheries are" (117). But despite this echo in

the two books, the dominant messages of *Risk Society* and *White Noise* could not be further apart. While Beck follows an orthodox sociology to pursue a rather predictable line of inquiry, DeLillo engages in a much messier practice: using fiction to dramatize the unease and ambiguity inherent in such toxic events. *White Noise* offers a rich, multilayered story that stresses how the consensual will for more of the same, for the “white noise” of the status quo, ultimately perseveres in the face of this toxicity and ambiguity.

DeLillo presents Jack and the rest of the Gladneys as modern, suburban, and inherently dysfunctional or, at the very least, fractured. The four Gladney children come from four previous marriages, and they all have very conflicting personalities. To add to the confusion, other step-children and various ex-wives and ex-husbands drop in throughout the novel. Jack is also decidedly an intellectual, an academic but, like his nuclear family, he too is a caricature: he teaches “Hitler Studies” at the prestigious “College on the Hill,” where his colleagues similarly teach speciality seminars in “The Cinema of Car Crashes,” and head up “The Department of Fast Foods.” And Jack’s wife, Babette, is a parody of a housewife: she can’t cook, takes mind-numbing pharmaceuticals, and volunteers her time giving community classes in posture and eating habits to the elderly, as well as reading salacious stories from the tabloids to blind people. Despite all their competing idiosyncrasies (and Babette’s brief and mysterious infidelity), the Gladneys constitute a nomadic family unit that stumbles from one crisis to the next and more or less survives.

The Gladneys’ flight from the billowing toxic cloud unfolds in a series of chaotic scenes that reinforce how people remain ignorant of the hazardous chemicals that pass through their communities via trains, tanker trucks, and pipelines, until there is a rupture, an accidental release, a spill, an explosion. These concrete and metal pathways and channels assure the continuous flow of crude oil, natural gas (the raw materials), and the flow of volatile and toxic chemicals (the refined or “cracked” products) such as gasoline, jet fuels, fertilizers, insecticides, and industrial cleaners. To get these chemical products to their various points of sale, the chemical industry depends on vast transportation and storage systems, what Michelle Murphy refers to as “chemical infrastructures” (2013). These networks are integrated into the engineered landscape, woven into the mesh of cities and communities, in such a way that they

are simultaneously public but also hidden and innocuous. The structures and vehicles that comprise these networks have achieved an ordinariness so that they can be right before our eyes, marked with warning signs, but yet be somewhat invisible. The monotony associated with these structures has, in turn, transformed the volatile and toxic chemicals they contain into stealth phantoms: they too remain invisible and in the background until there is a rupture, an accidental release, a spill, an explosion. For the Gladneys, this moment is both unsettling and awe inspiring:

It was a terrible thing to see, so close, so low, packed with chlorides, benzines, phenols, hydrocarbons.... Our fear was accompanied by a sense of awe that bordered on the religious. It is surely possible to be awed by the thing that threatens your life, to see it as a cosmic force, so much larger than yourself, more powerful, created by elemental and wilful rhythms. This was a death made in a laboratory, defined and measurable, but we thought of it at the time in a simple and primitive way, as some seasonal perversity of the earth like a flood or tornado, not something subject to control. (127)

But rather than be inspired to reflection or take up the opportunity for a weighted response, the Gladneys are never sure what they have witnessed, what exactly they have been exposed to, and what would be the rational course of action. Should they be concerned about their (possible) exposure or should they try to ignore it and get on with their busy lives? This crucial question is never resolved. In other words, Jack and his family find themselves thrown into the thick of things but they have no idea of the exact dangers or consequences that this toxic event has had, or will have, on their lives. This theme of ambiguity, of not knowing, is vital to DeLillo's text, as he insists that the act of being a witness to – and both subject and object of – a toxic event does not provide this witness with a better or clearer understanding of what s/he has just witnessed. Rather than any sense of clarity, such toxic events actually work to infuse everyday life with a much greater sense of ambiguity and anxiety.

In addition to challenging the idea of what it means to bear witness to a toxic event, DeLillo is also determined to contest the distinction made between a first-hand experience and the mediated experience that results from viewing events from a safe distance and through the layers of representation. To challenge this fundamental distinction, he foregrounds the constant

presence of media, how everyday life is saturated with an audiovisual white noise. Radio, television, tabloid news forms of “infotainment” are constantly present in the novel, as they serve as an ambient background to the Gladneys’ daily routines. Their day to day lives are peppered with jingles, taglines, and competing commentaries, so that it is virtually impossible to distinguish any aspect of life that is not experienced in a highly mediated fashion. How, where, and when would a firsthand experience be able to free itself from the onslaught of diffracted bits/bites of information? It is rather remarkable that DeLillo’s text was written in 1986, just as the full integration of cable television was getting underway in North American cities and 24-hour news stations were being introduced. Written well before the internet boom and advent of cellphone news footage and Facebook and Twitter postings, the novel’s scenes of media saturation and psychological detachment are very relevant to the ways in which these newer and more immediate/instantaneous communication technologies have helped people document and bear witness to world events. At the same time, however, such constant exposure has been seen as a source of apathy rather than reflexive and responsible actions (McKee 2005). By emphasizing the Gladneys’ confusion and indifference, DeLillo wants his readers to recognize the fortitude of the status quo, how the consensual will for more of the same is actually reinforced rather than challenged or reflected on in such moments of crisis and uncertainty.

Crucially, the toxic event in *White Noise* doesn’t happen until more than a hundred pages into the narrative. Despite its abrupt arrival into the Gladneys’ routine existence, the toxic event also does not change the overall tone of the story. Although Jack becomes more and more obsessed with death as the novel progresses, there is no clear break in his general demeanour, outlook, or behaviour. Jack’s obsession does eventually drive him to attempt a violent act of jealous vengeance, but his actions unfold without any sense of real direction or commitment on his part. Similarly, most of *White Noise* (before and after this toxic event) is spent rehearsing scenes that embody the very opposite of clear reflection, commitment, and radical change, as we witness scenes in which the Gladneys appear to be often detached, distracted, and confused. Rather than reflection and responsible action, the novel’s primary focus is on the ambient static or “white noise” of everyday life. Not only are the television and

radio forever on in the Gladney's home and car, but there is also considerable attention given to trivia or piecemeal information. DeLillo saturates the Gladneys (and the reader) with garbled or grey information, especially alongside the unfolding of the toxic event. For example, to help pass the time in the car and emergency shelters, and to maintain a sense of normalcy, the Gladneys quiz each about their trivial knowledge of current affairs and science. These conversations reveal how knowing and not knowing cannot easily be distinguished, as the characters only ever have a vague idea of what they are talking about. The unfolding of the plot also attends to the general dependency people have on electronic technologies and how many of the things that we rely on that have been "black boxed," so most people (me included) only have a partial idea of how these key tools of everyday life work (like the laptop that I am using), what we would do without them, and how would we imagine life otherwise.

In their flight from the toxic cloud, the Gladneys also kill time listening to talk radio shows and to Jack's wife, Babette, reading aloud from tabloids. Through these familial conversations, we are meant to bear witness to some of the psychic and cultural work of information overload: how it provides an effective form of detachment so people can actively choose to focus their attention on incidental things and not on things that pose a threat to their lives, or that concern the lives of people (far) removed from their immediate sphere of concern. DeLillo wants us to bear witness to the gaps that come with knowing things only in piecemeal or vague fashion, or with being more interested in fantastic stories of UFOs and dead celebrities than in practical experiences. The dominant theme in these familial scenes is how the nuclear and media-saturated family takes a considerable comfort in this white noise, and how this constitutive relationship between white noise and the family in turn contributes to the persistent will of normalcy, the consensual demand for more of the same.

By unpacking some of the conflicting layers of *White Noise*, my main intention is to echo DeLillo's messy portrait of everyday life, showing how the everyday is saturated by a toxic will or consensus: a logic of tolerable toxicity that is not easily challenged even when it directly exposes people to dangerous chemicals. But I also don't want to misrepresent the novel, to suggest that the Gladneys managed to be blasé or unaffected by their encounter. The menacing cloud of Nyodene D. does prove to have lingering psychological and physical consequences that are

never resolved or successfully swept under the carpet. Much of this uncertainty is because the consequences of such toxic events are by nature hard to pin down. Jack, for example, doesn't know if his two-minute exposure to the cloud while he was filling the car with gas was enough to make him sick. Trying to get a concrete answer about his health, he has the following comical exchange with a public health agent:

"Am I going to die?"

"Not as such," he said.

"What do you mean?"

"Not in so many words."

"How many words does it take?"

"It's not a question of words. It's a question of years. We'll know more in fifteen years. In the meantime we definitely have a situation."

"What will we know in fifteen years?"

"If you're still alive at the time, we'll know that much more than we do know. Nyodene D. has a life span of thirty years. You'll have made it halfway through."

"I thought it was forty years."

"Forty years in the soil. Thirty years in the human body."

"So, to outlive the substance, I will have to make it into my eighties. Then I can begin to relax." (142)

These frustrating exchanges with authority figures repeat throughout the book, as Jack encounters a series of evasive doctors and other medical personnel. The focus of the second half of the book is Jack's obsession with his own mortality and the nagging grey zone of not knowing if he has been sufficiently exposed to the Nyodene D. to be considered poisoned.

Being unsure of the possible consequences of this toxic event, the Gladneys attempt to normalize the situation. This constant demand for normality is suggested at various points in the car and in the emergency shelter in which the family converses, eat snacks, and generally behaves like it is on a family vacation or a weekly excursion to the mall, rather than a dangerous flight from a menacing toxic cloud. Similarly, weeks after the family's encounter with Nyodene D., Babette points to the frequency of such events, again to reassure Heinrich and the other

Gladney children (as well as herself) that everything is okay and that life has returned to normal. “That’s the point,” she states. “Every day on the news there’s another toxic spill. Cancerous solvents from storage tanks, arsenic from smokestacks, radioactive water from power plants. How serious can it be if it happens all the time? Isn’t the definition of a serious event based on the fact that it’s not an everyday occurrence?” (174). Babette’s reassurance is purposefully dark and perverse. It echoes the kind of gothic doublespeak regularly channelled by risk managers, environmental consultants, and government agents, the corps of public relations representatives whose job is to normalize pollution and capitalism’s distribution of the sensible by assuring communities living alongside or downstream from heavy industries that, despite the steady flow of emissions, spills, and the steady increase in cancers, asthma, and other airborne and waterborne illnesses and fatalities, all is safe, regulated, and normal.

Some Final Notes on the Structure of My Dissertation and on Making Things Up



Figure 6: Comics as an emotional shorthand for fictive truths/true fictions

Like DeLillo, in this dissertation I want to tell biting tales that verge on the farcical but are also very much based on structured and institutionalized truths and modes of being. Much of the direction and tone of my dissertation is borrowed from *White Noise*. It is from this book that I worked up the competing layers of my thesis: (1) insisting on the incredible perseverance of capitalism, its ability not only to survive the repercussions of toxic events, but also to thrive in the face of such events; (2) but also insisting on the perseverance of toxins, their ability to linger and frustrate claims of management, containment, and abatement. This dual perseverance on the part of capitalism and toxins only intensifies the need for finding and championing new methods of intervention and dissent. There is a pressing need for assembling engaging and situated stories of toxicity, stories that are rag-picked from the everyday and evoke counter-memories, unresolved thoughts and feeling that brush up against the status quo and the steady dissemination of pollution.

I have referred to my objective as cosmopolitical, and to my method as rag picking, but I also wholly subscribe to James Clifford's description of "fictive ethnography." In his short essay, "Partial Truths," which serves as the introduction to *Writing Culture: The Poetics and Politics of Ethnography* (1986), Clifford proposes using ethnography as an especially effective way of soliciting "true fictions":

To call ethnographies fictions may raise empiricist hackles. But the word as used in recent textual theory has lost its connotation of falsehood, of something opposed to truth. It suggests the partiality of cultural and historical truths, the ways they are systematic and exclusive. Ethnographic writings can be properly called fictions in the sense of "something made up or fashioned," the principle burden of the word's Latin root *figere*. But it is important to preserve the meaning not merely of making, but also of making up, of inventing things not actually real... Moreover, the maker (but why only one?) of ethnographic texts cannot avoid expressive tropes, figures, allegories that select and impose meaning as they translate it. In this view, more Nietzschean than realist or hermeneutic, all constructed truths are made possible by powerful "lies" of exclusion and rhetoric. Even the best ethnographic texts—serious, true fictions—are systems, or

economies of truth. Power and history work through them, in ways their author cannot fully control. (6-7)

Imagine reading this paragraph for the first time, shortly after the book was published. For me, Clifford's words reverberated like a codex, like finding a Rosetta Stone. Here was the permission I was looking for: permission to speculate, to make things up from the stuff surrounding me, the stuff that has come to hold special and unresolved meanings. This paragraph still carries tremendous significance for me. The basic job of the ethnographer-artist is to delineate the structural lines that run through cultures and secure communal life, common sense, and shared ethics. How could the author-ethnographer point to these various structuring devices—language, folk tales, kinship, sexuality, eat habits, television, rock and roll, sports, and fashion—and claim that s/he is immune or has sufficient distance from his or her own set of seemingly natural forms of social inscription? How and why would s/he claim not to have made things up, not out of thin air, but out of the weighted, tainted air that runs through her blood and thoughts?

This dissertation is organized as four ethnographic tales of toxicity that delineate the constitutive relationship of neoliberal capitalism and pollution. I focus on two primary sites (Toronto and Sarnia) and two heavy industries (the refining of lead and the refining of crude oil). Two of these chapter-stories take the form of comic books, while the other two follow a more conventional format. Chapter Two: Toxicity Takes a Holiday is the first of two comic book chapters and specifically examines the threat of lead poisoning in Toronto by focusing on a blood lead street fair that was mounted in the 1980s in South Riverdale, a small working-class neighbourhood in Toronto. Chapter 3: The Lead Archive and the Toxic Politics of Consensus continues the story of lead poisoning in Toronto but focuses on another working-class neighbourhood, Niagara, and the obstructive methods deployed by the Ontario Ministry of the Environment to maintain the status quo and avoid addressing the apparent health hazards of having a large lead refinery situated within a residential neighbourhood. Chapter 4: The Tale of the Sarnia Nose is the second comic book chapter and its focus is Canada's Chemical Valley, a vast industrial corridor that is responsible for much of Canada's petrochemical refining and production. This chapter traces the toxic and detrimental practices that are inherent to the

interconnected flow of crude oil, the manufacture of chemical feedstocks, the capital gains reported by the region's petrochemical plants, and the dissemination of ambient toxins.

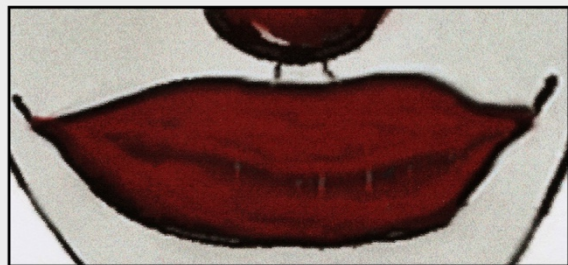
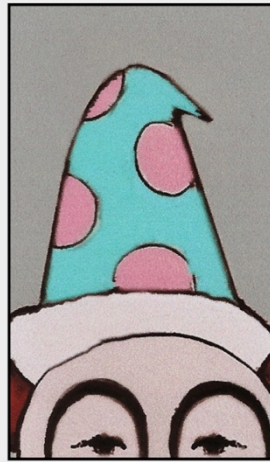
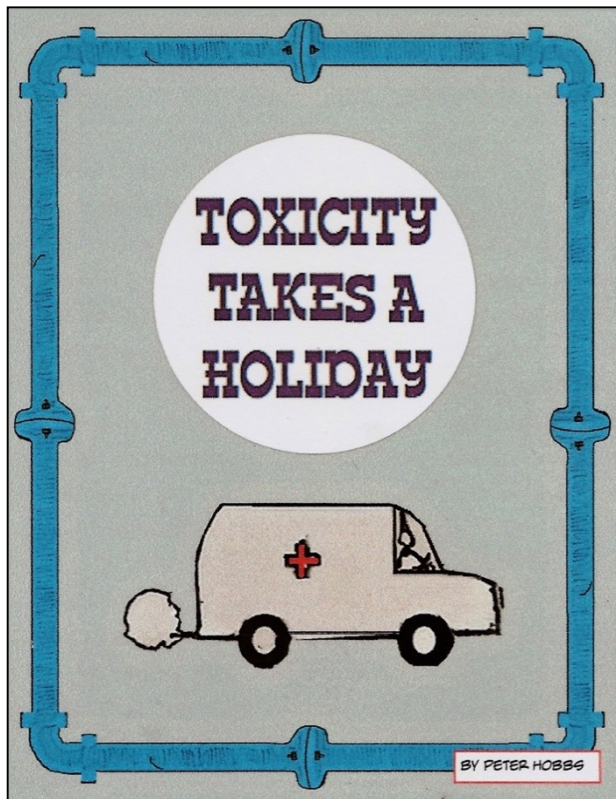
Chapter 5: In Pursuit of a Regional Sensorium uses an assortment of regional texts, including petrochemical promotional material, tourist guides, postcards, and local newspaper articles, as a way to map the region's intimate relationship with oil and how the insatiable demand for petroleum products has had tragic consequences for many local residents. For example, the region suffers exceptionally high levels of asthma, lung cancer, and mesothelioma. While each of these chapters pursues specific arguments, various themes are constantly returned to: environmental justice, local forms of community activism, epistemic racism, hegemonic whiteness, the politics of the public sphere and the imperative of consensus, the figure of the vulnerable child, the cultural dominance of the reproductive family, and the parasitic nature of neoliberal governance. These four ethnographic chapters are in turn framed by this introductory chapter and a short comic book conclusion.

With this structure in mind, Clifford's poignant paragraph is one final signpost that speaks directly to what I am trying to accomplish with my dissertation, including my own place within the text. I have intentionally chosen to focus on sites with which I have had a close and long connection: Toronto is a large city where I have lived most of my life (for a short period in the 1980s I lived in South Riverdale and I currently live in close proximity to Niagara); Sarnia is a small city where my mother has lived for more than 30 years; and my youngest brother and his family live in Corunna, which is approximately 13 kilometres south of Sarnia. My direct connection to these sites informs both the content and format of these chapters, as I make no claims of objectivity and unabashedly insert myself and my family into the text. At various points, the writing slips into autobiographical musings, childhood memories, and unresolved thoughts. This auto-ethnography is especially true for the two comic book chapters, where I insert images that are more suggestive or connotative than they are denotative. These anecdotal and speculative moments are an important part of my method, which, as I have outlined above, is a mixture of ecological critique and ethnography, a combined mode of inquiry that I have adopted from making site specific art and from my training in science studies, environmental humanities, and cultural studies.

Deciding to incorporate the comic book format into my dissertation was incredibly exciting for me, as it has allowed me to combine my skills as both a practicing artist and an academic. In addition to helping me trace some of the combined biopolitics and cosmopolitics of pollution, comic book imagery has also allowed me to pursue some inherently slippery ideas (affect, the technological sublime, posthumanism, agential realism) as well as slippery phenomena (ambient particulate, the effects of low industrial emissions/slow poisons, the neuron activity of the human brain). And while I have used the comic format to depict sequential events, much of the imagery consists of isolated fragments that together provide a larger ecological story or assemblage. Not wanting to use comic book drawings to simplify things, I have pursued a graphic form of “thick description” (Geertz 1973: 6). For the most part, I have used the comic book format as a type of *ethno-graphic* notetaking, focusing on mundane imagery as a way of foregrounding some of the broader discursive framework that allows for the dissemination of pollution. In other words, I have isolated common objects and depicted routine practices in an effort to diagram the subtle and not so subtle structures of power inherent to the technological landscapes, that people, including my mother and me, live in and call home.

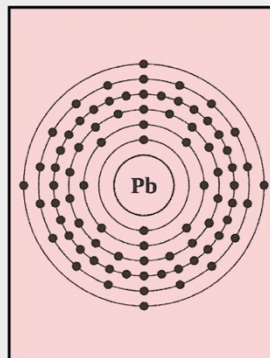
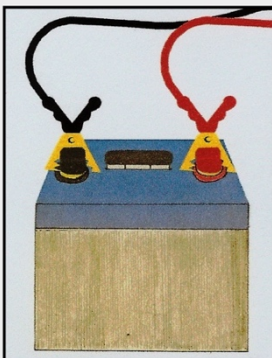
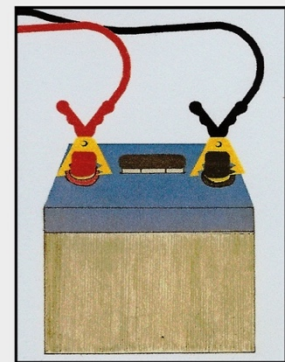
Chapter 2: Toxicity Takes a Holiday

The following comic book chapter traces the lingering politics of lead poisoning in Toronto. The assembled story is anchored by a set of documents that I found in a black binder in a small branch of the Toronto Public Library, which included photocopied community newsletters, factsheets tips for lead prevention, and a faded pink flyer. My memory is that the flyer slipped out of the binder, more or less presenting itself to me as something that needed my attention. If I had to pick a germinating seed for my dissertation, it would be this flyer, with its juggling clown, rather dull layout, and unnerving but casual announcement of a travelling blood lead testing street fair: A mobile family event in which the residents of South Riverdale would be blatantly reminded of the polluting industries that they lived alongside and the high levels of lead found in the local soil and in the blood of local children.

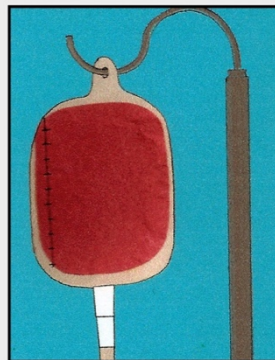
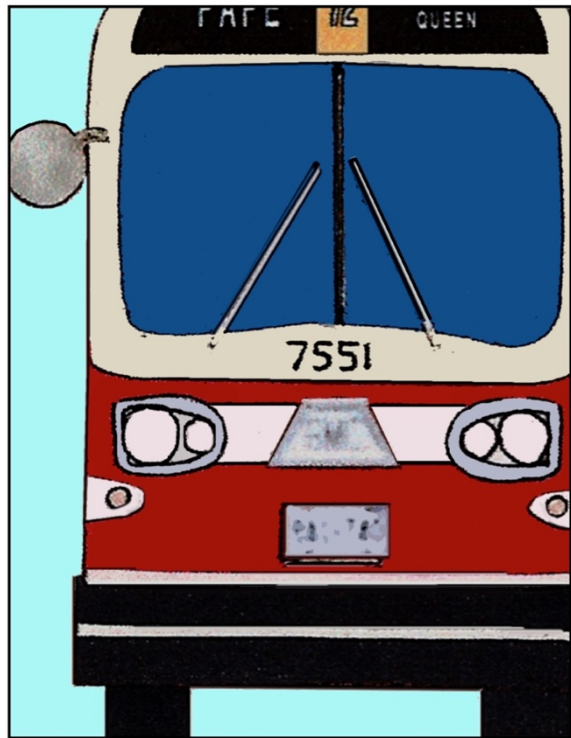
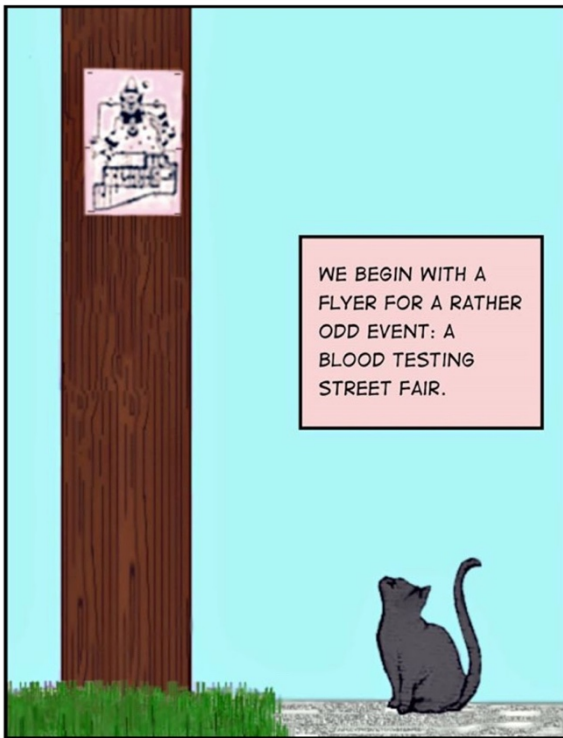


LEAD IS THE PROTAGONIST OF THIS TALE OF TOXICITY, A STORY THAT TAKES PLACE IN TORONTO IN THE 1980S. TO BE MORE PRECISE, THE YEAR IS 1984 AND WE FIND OURSELVES IN THE SMALL NEIGHBOURHOOD OF SOUTH RIVERDALE.

	13 Al	14 Si	15 P	16 S
30 Zn	31 Ga	32 Ge	33 As	34 Se
48 Cd	49 In	50 Sn	51 Sb	52 Te
80 Hg	81 Tl	82 Pb	83 Bi	84 Po
112 Cn	113 Uut	114 Fl	115 Uup	116 Lv
66 Dy	67 Ho	68 Er	69 Tm	70 Yb



HERE A CONVERGENCE OF
EVENTS HAS TRANS-
FORMED LEAD INTO A
MATTER OF PUBLIC
CONCERN. IN EFFECT,
THESE EVENTS ANIMATED
LEAD, OR, RATHER, THEY
SHOWED HOW LEAD IS
**ALWAYS ALREADY
ANIMATED, IMMANENT,
AND ATOMIC.**

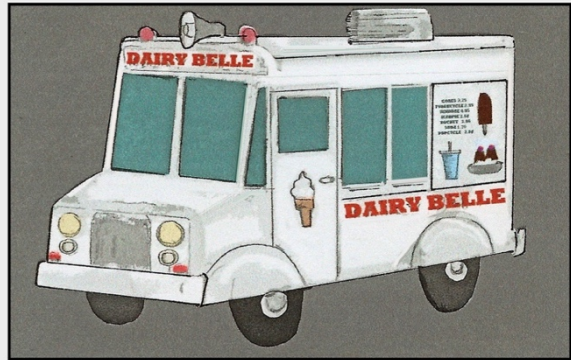


SEVERAL IMPORTANT DETAILS CAN BE GLEANED FROM THE FLYER ITSELF: (1) THE FAIR RAN FOR A WEEK. (2) IT WAS PUT ON BY THE CITY'S DEPARTMENT OF HEALTH IN CONJUNCTION WITH THE SOUTH RIVERDALE COMMUNITY HEALTH CENTRE.

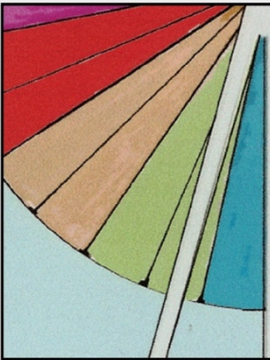
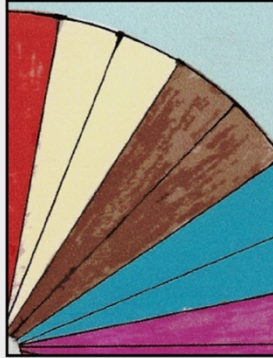


WHAT WOULD THIS STRANGE AMALGAMATION OF STREET FAIR AND COMMUNITY CLINIC LOOK LIKE?

THE FLYER FEATURES A JUGGLING, SMILING CLOWN, TRIGGERING IMAGES OF CARNIVAL GAMES AND FOOD VENDORS, ALONGSIDE MEDICAL PERSONNEL SPORTING HOSPITAL WHITES AND SYRINGES.

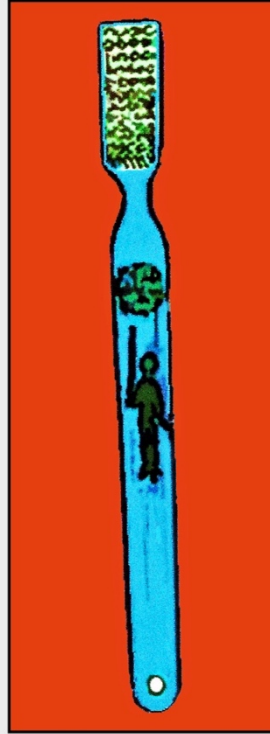


(3) IT WAS A MOBILE FAIR THAT TRAVELED TO DIFFERENT RESIDENTIAL STREETS IN THIS TORONTO NEIGHBOURHOOD, PROVIDING "LEAD TESTS FOR CHILDREN UNDER 6 YEARS OF AGE" (I AM QUOTING DIRECTLY FROM THE FLYER). (4) THE SOIL IN THE AREA HAD "HIGH LEAD LEVELS (FREQUENTLY OVER 1000 PARTS PER MILLION)."



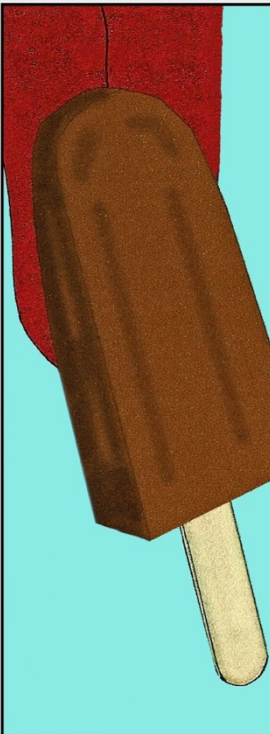
AND (5) "1 OUT OF 5 CHILDREN HAD BLOOD LEAD LEVELS TOO HIGH."

A TOOTH FAIRY IS ALSO LISTED AS ONE OF THE FAIR'S ATTRACTIONS.

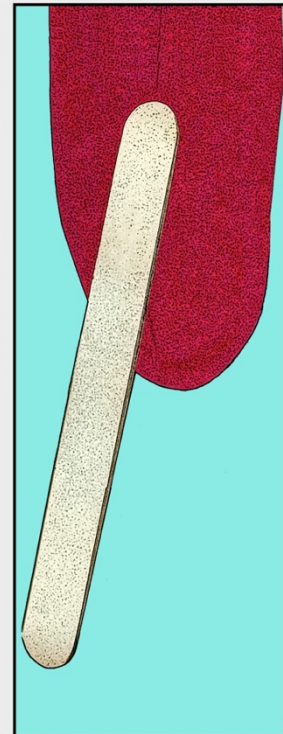


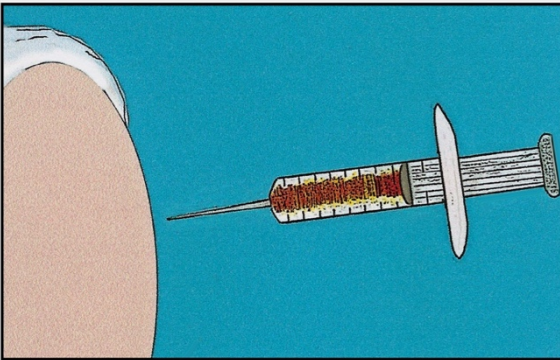
THERE IS NO MENTION OF A TOOTH FAIRY IN THE FOLLOW-UP REPORT PREPARED BY THE TORONTO DEPARTMENT OF HEALTH, BUT IT EXPLAINS THAT THE FAIR/CLINIC ALSO INCLUDED A COUPLE OF DENTAL HYGIENISTS. THEIR JOB WAS TO INSTRUCT THE CHILDREN AND THEIR PARENTS ABOUT COMBATING LEAD POISONING BY "EATING HEALTHY FOODS AND PRACTICING GOOD TOOTH CARE" (ELLIS, ERB AND MCFARLANE 1985: 4).

THE REPORT ALSO STATES THAT EACH OF THE TESTED CHILDREN WAS GIVEN "A STAR WARS TOOTHBRUSH" (4).



ONE ARTICLE REPORTS OF A CHILD'S HAIR TURNING BRIGHT GREEN AS A RESULT OF HAVING "LEAD LEVELS FOUR TIMES WHAT IS CONSIDERED DANGEROUS" (ROBERT BREHL 1988: A7). UPSET PARENTS ARE QUOTED, DEMANDING THAT THE CITY SHUT DOWN CANADA METAL, A LOCAL LEAD REFINERY.





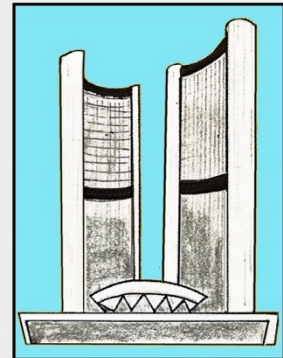
IN ADDITION TO THE FLYER AND THE REPORT, I ALSO HAVE A COLLECTION OF NEWSPAPER CLIPPINGS FROM THE 1970S AND 80S THAT REVEAL A SPORADIC HISTORY OF CHILDREN FROM SOUTH RIVERDALE BEING RUSHED TO THE HOSPITAL WITH HIGH CONCENTRATIONS OF LEAD IN THEIR VEINS.

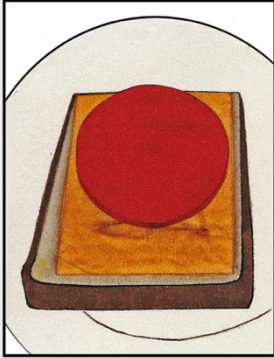


IN REALITY THE BLOOD LEAD TESTING STREET FAIR TURNED OUT TO BE RATHER LOW KEY, CONSISTING OF A SINGLE CLOWN WHO ACCOMPANIED A SMALL GROUP OF CLINICIANS AS THEY TRAVELED TO THE DESIGNATED STOPS IN A DARK GREEN VAN SUPPLIED BY THE ONTARIO MINISTRY OF HEALTH.

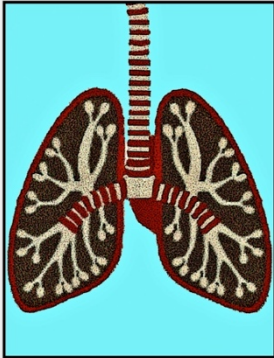


IN THE OFFICIAL HISTORIES OF TORONTO, THE BLOOD LEAD TESTING STREET FAIR DOES NOT REGISTER AS A SIGNIFICANT EVENT. LIKE SO MANY OTHER MINOR EVENTS, IT GOES UNMENTIONED.



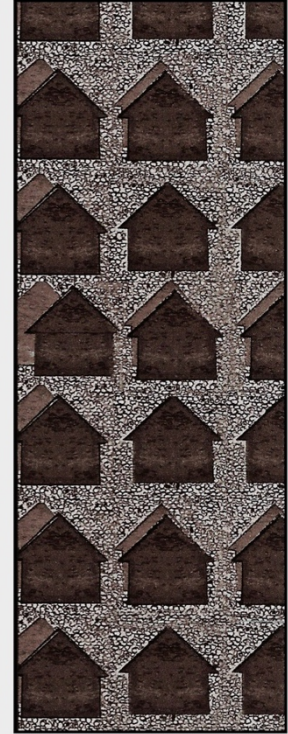
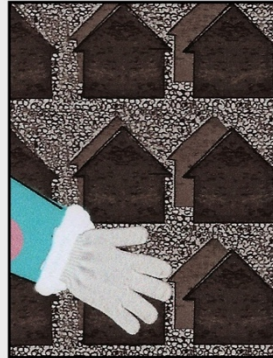


HOWEVER, AS AN INCIDENTAL EPISODE, IT PROVIDES US WITH AN ENTRY INTO THE MICROPHYSICS OF EVERYDAY LIFE, AS IT REVEALS SOME OF THE CONFLICTING TRUTHS, VALUES, AND POISONS THAT ARE EMBODIED IN OUR DAILY ROUTINES AND THAT ARE PRESENTED AS THE UNAVOIDABLE CONSEQUENCES OF LIVING IN CONTEMPORARY SOCIETY.

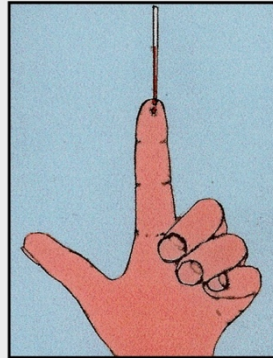
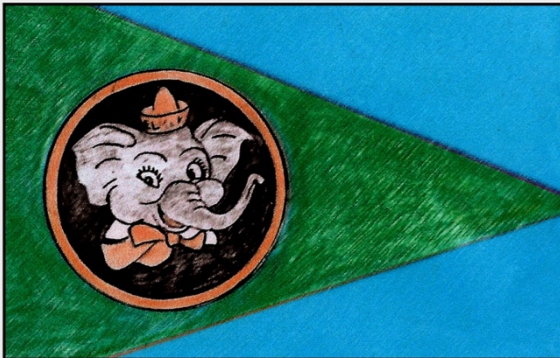
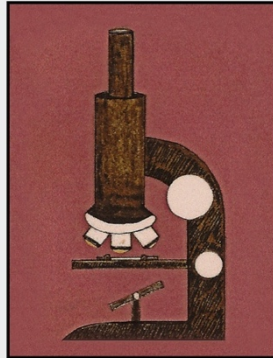


BY BEING CONCENTRATED IN A PARTICULAR NEIGHBORHOOD, THE FAIR REMINDS US THAT THESE SO CALLED UNAVOIDABLE SOCIAL COSTS ARE NEVER EQUALLY SHARED.

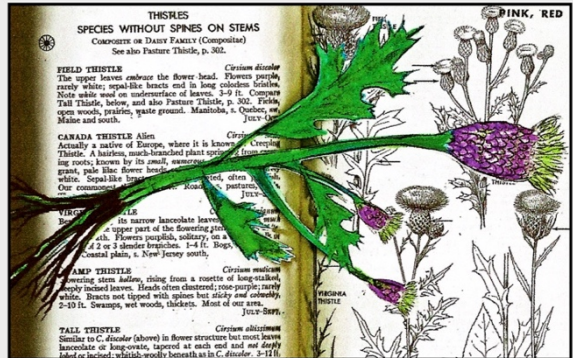
SOME OF THE PARTICULAR COSTS OF LEAD IN SOUTH RIVERDALE CAN BE TRACED BY REFERENCING SOME GENERAL INFORMATION.



YOUNG CHILDREN ARE ESPECIALLY SUSCEPTIBLE TO LEAD POISONING BECAUSE THEIR BONES AND BRAINS ARE UNDERGOING RAPID DEVELOPMENT. IN ADDITION TO THIS FACTOR, CHILDREN LIVING CLOSE TO SOURCES OF LEAD PARTICULATE ARE THE MOST VULNERABLE.



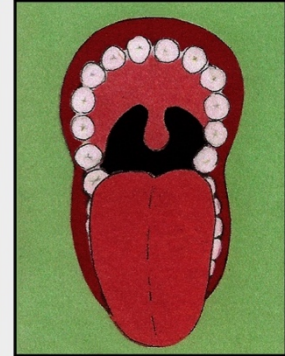
THESE SPECIFIC FACTORS ARE LOST WHEN WE APPEAL TO A UBIQUITOUS "WE" AND ASK: HOW MUCH LEAD TOXICITY ARE WE WILLING TO LIVE WITH? THE FAIR REMINDS US THAT **WE ARE NOT ALL BEING ASKED TO TAKE ON THE SAME LEVELS OF RISKS.**



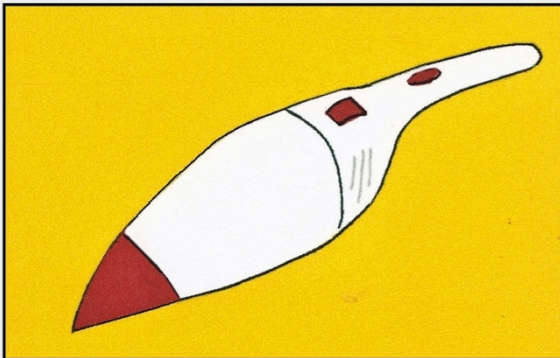
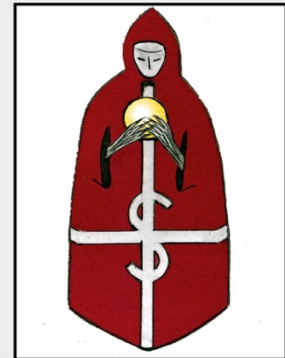


THE UNEQUAL DISTRIBUTION OF RISKS IS THE RECURRING LESSON OF ENVIRONMENTAL JUSTICE: *TOXICITY IS NOT DEMOCRATIC.*

HISTORY SHOWS THAT IT IS PEOPLE LIVING IN ECONOMICALLY DIS-ADVANTAGED NEIGHBOURHOODS AND REGIONS WHO CONTINUALLY BEAR THE BRUNT OF INDUSTRIAL POLLUTION AND THE RESULTING RESPIRATORY ILLNESSES AND OTHER DISEASES.



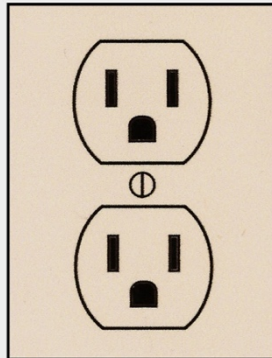
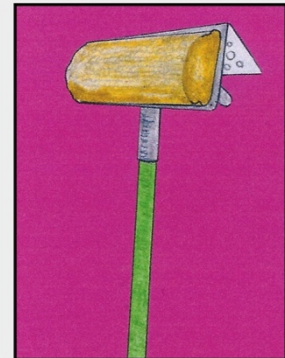
THIS SITUATION WAS THE CASE IN SOUTH RIVERDALE: IN THE 1980S IT WAS A WORKING-CLASS NEIGHBOURHOOD WITH ONE OF THE LOWEST AVERAGE HOUSEHOLD INCOMES IN THE CITY (TEELICKSINGH 2001: 238).



THE PRACTICAL MISSION OF THE FAIR WAS TO TEST THE BLOOD OF THE YOUNG CHILDREN AT RISK OF LEAD POISON AND TO EDUCATE PARENTS ABOUT PREVENTION.

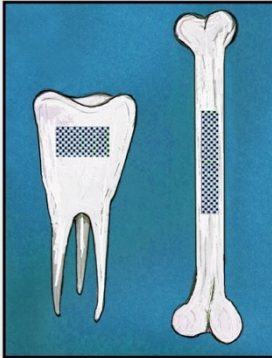
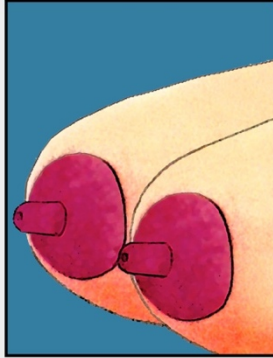


THESE LESSONS OF PREVENTION IN TURN PROMOTED A FAMILIAR REGIME OF DOMESTIC CHORES, ONE IN WHICH EXAMPLES OF GOOD AND BAD CIVIC AND FAMILIAL BEHAVIOUR WERE EXPRESSED AND CONFIGURED IN WAYS THAT REINFORCED TRADITIONAL GENDER ROLES.



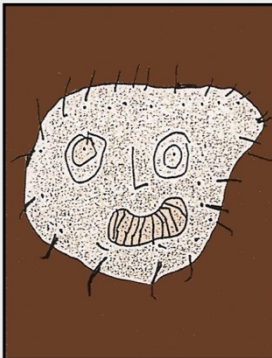
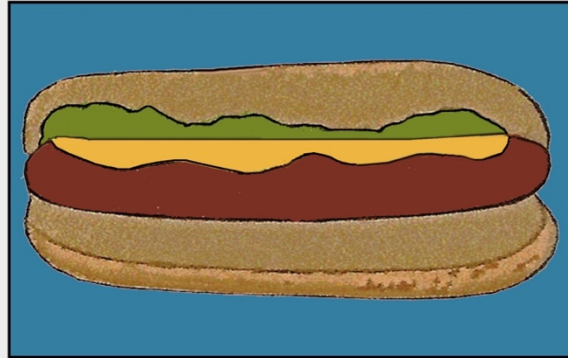
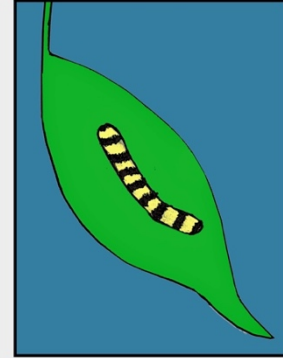
TWO KEY FIGURES IN THESE LESSONS WERE THE VIGILANT MOTHER AND THE VULNERABLE INFANT. WHILE THE FORMER CONTROLLED DUST IN THE HOME BY FREQUENTLY VACUUMING AND WET MOPPING, THE LATTER SUFFERED FROM PICA AND WAS ALWAYS IN DANGER OF CONSUMING HANDFULS OF CONTAMINATED DIRT.

IN MAPPING THE AGENTIAL RELATIONS SHARED BY THESE TWO FIGURES IT IS IMPORTANT TO POINT OUT THE ROLE BREAST FEEDING PLAYS IN LEAD POISONING AND HOW NURSING MOTHERS OFTEN OFFLOAD AND PASS ON SOME OF THEIR STORED-UP TOXIC BURDENS.



AS HEALTH CANADA REPORTS, "BREAST MILK NOT ONLY IS A BIOMARKER OF EXPOSURE FOR LACTATING WOMEN BUT ALSO IS A SOURCE OF EXPOSURE FOR BREAST-FED INFANTS" (2013: 37).

IN A SOMEWHAT SIMILAR FASHION, A FETUS CAN ABSORB THE LEAD STORED UP IN THE "MATERNAL BONE [THAT IS] MOBILIZED AND USED IN THE PRODUCTION OF THE FETAL SKELETON" (IBID: 36).

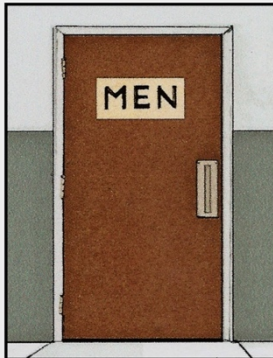


SO FAR WE HAVE IDENTIFIED FOUR PRIMARY CHARACTERS IN THE SOUTH RIVERDALE STORY OF LEAD: (1) THE VIGILANT MOTHER; (2) THE VULNERABLE CHILD; (3) LEAD ITSELF; AND (4) THE CLOWN FEATURED ON THE POSTER AND WHO WAS PART OF THE ACTUAL BLOOD TESTING STREET FAIR.

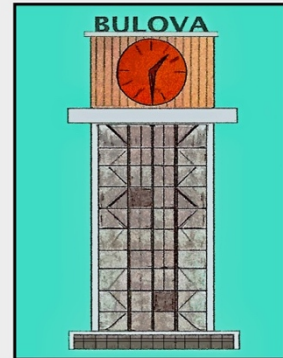


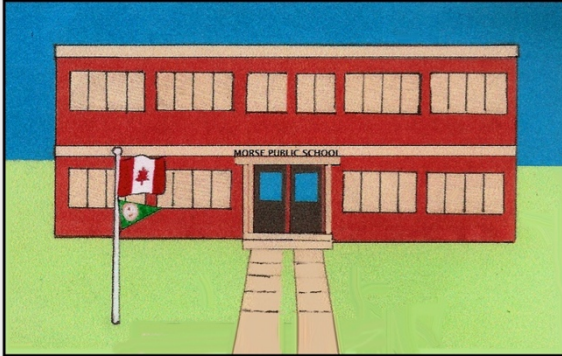
THERE ARE TWO MORE PLAYERS THAT WE NEED TO ADD TO OUR LIST: (5) THE LEAD INDUSTRY; AND (6) CIVIC GOVERNMENT.

THIS COMIC ATTEMPTS TO DRAW/DIAGRAM THESE DIFFERENT ACTORS AND THE MAGNETIC FIELD IN WHICH THEY ENCOUNTER AND REACT TO ONE ANOTHER.

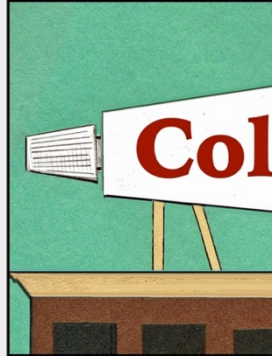
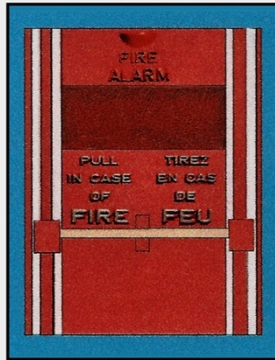


LET US BRIEFLY TURN OUR ATTENTION TO GOVERNMENTALITY. HOW EXACTLY DO CIVILITY AND PUBLIC SENTIMENT MANIFEST? IN OTHER WORDS, WHAT ARE THE SUBTLE AND NOT SO SUBTLE WAYS IN WHICH GOVERNANCE AND THE COMMON GOOD ARE GIVEN A PUBLIC FACE?



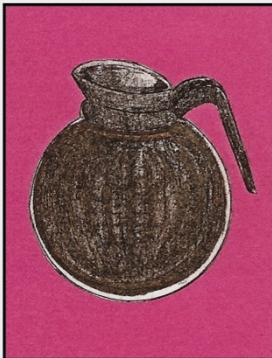
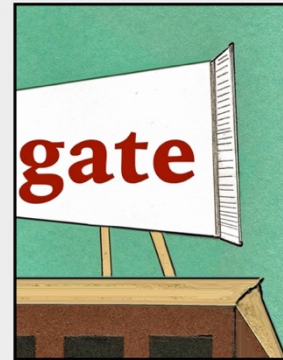


CIVIC ORDER AND THE DICTATES OF COMMON SENSE CAN TAKE A MULTITUDE OF FORMS. PUBLIC STANDARDS, IN OTHER WORDS, FIND EXPRESSION IN A VAST ARRAY OF ORDINARY THINGS, SUCH AS A GESTURE, A BUILDING, A BILLBOARD, AND A COUPLE KISSING ON THE SUBWAY.

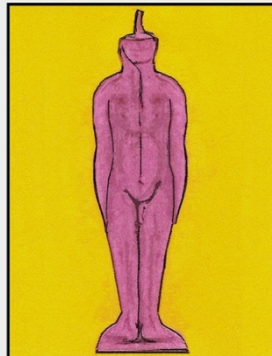


FOR EXAMPLE, THIS GRINNING CLOWN, COULD BE VIEWED AS AN AGENT OF PUBLIC SENTIMENT. HIS/HER JOB WAS TO ENTERTAIN AND REASSURE THE CHILDREN BEING TESTED FOR LEAD POISONING, AS WELL AS THEIR ANXIOUS PARENTS, THAT EVERYTHING WAS FINE AND UNDER CONTROL.

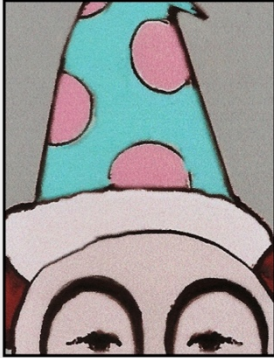
LIKE THE FIGURE OF THE POLICEMAN, THE CLOWN'S PRIMARY ROLE WAS TO EMBODY THE INCESSANT CIVIC IMPULSE/DEMAND TO REMAIN CALM AND PRESERVE ORDER.



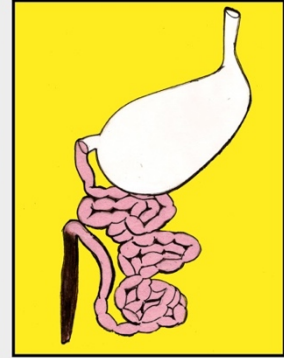
IT CAN BE FURTHER ARGUED THAT THE CLOWN AND THE FAIR ITSELF CONSTITUTED A FORM OF PUBLIC ALCHEMY IN WHICH LEAD POISONING WAS SIMULTANEOUSLY ASSAYED AND SMOOTHED OVER.



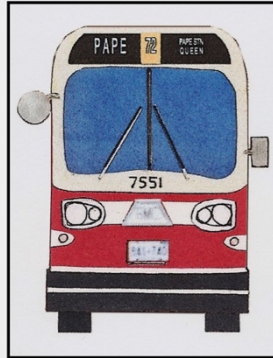
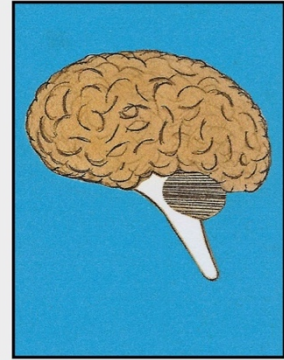
BY MOUNTING A FAIR WITH BALLOONS, GAMES AND MAKEUP, TOXICITY - THE THREAT OF CONTAMINATED SOIL AND BLOOD - WAS GIVEN A HOLIDAY, REPACKAGED AS A FUN COMMUNITY EVENT.



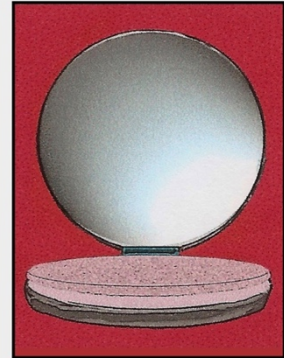
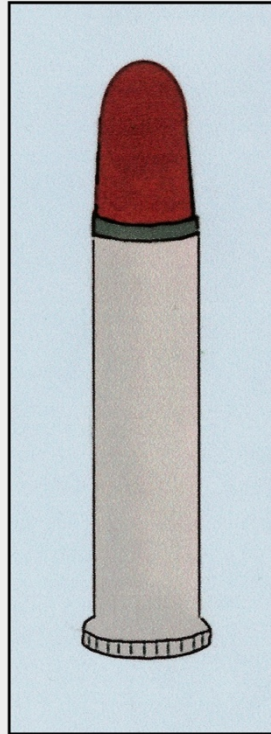
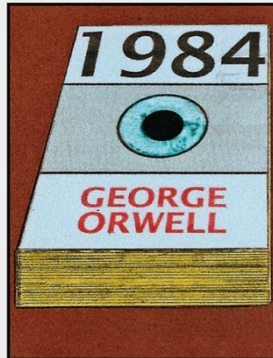
THE TACIT MESSAGE OF THE STREET FAIR WAS PRETTY CLEAR: EVEN THOUGH LOCAL CHILDREN HAVE CONSISTENTLY SHOWN ELEVATED/TOXIC LEVELS OF LEAD IN THEIR BLOOD, PEOPLE SHOULD NOT BE TOO ALARMED, *EVERYTHING WAS UNDER CONTROL.*



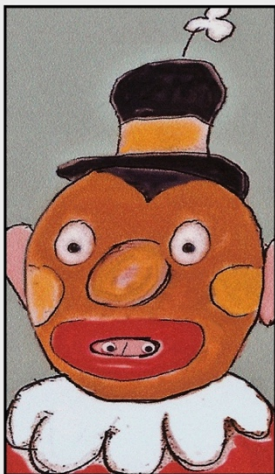
THROUGH THE FIGURE OF THE CLOWN, LEAD'S TOXICITY WAS GIVEN A PUBLIC FACE AND A PUBLIC FOOTHOLD. INSTEAD OF BEING SEEN AS A SOURCE OF PUBLIC AND PARENTAL ANGER, LEAD WAS CONFIGURED AS SOMETHING THAT THE PEOPLE OF SOUTH RIVERDALE COULD LEARN TO LIVE WITH.



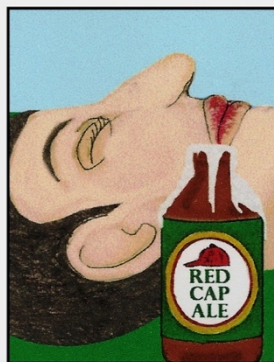
BEFORE MOVING ON, I SHOULD ALSO ACCOUNT FOR THE DISTURBING NATURE OF THE CLOWN, A RESONANCE THAT ATTRACTED ME TO THE FADED PINK FLYER IN THE FIRST PLACE.



THERE IS SOMETHING IMPLICITLY UPSETTING OR CREEPY ABOUT THIS PARTICULAR CLOWN. IN OTHER WORDS, THERE IS MORE HAPPENING HERE THAN THE CLOWN SIMPLY SERVING AS AN AGENT OF COMMUNAL HEALTH. THIS SUPPLEMENTARY MEANING NEEDS TO BE FLESHED OUT.

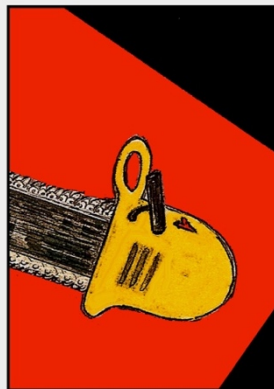
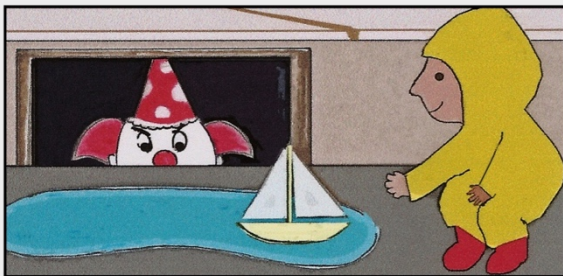


IN GENERAL, CLOWNS HAVE THE NOTORIOUS ABILITY TO EMBODY POLAR FEELINGS: TO BE BOTH HAPPY AND SAD, MANIACAL AND PLAYFUL, COARSE AND SENTIMENTAL.

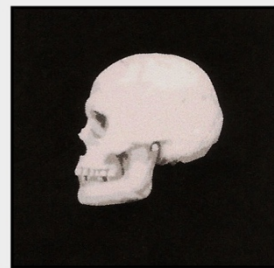
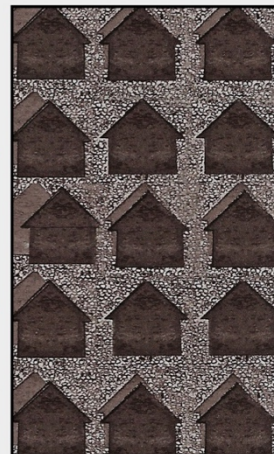


PULP NOVELS AND HORROR FILMS ARE POPULATED WITH JANUS-FACED CLOWNS HIDING IN CLOSETS AND UNDER BEDS, INSPIRING NIGHTMARES.

THERE IS ALSO THE FIGURE OF THE CLOWN CHILD MOLESTER AND SERIAL KILLER, PERSONIFIED BY JOHN WAYNE GACY. IN THE 1970S AND 80S, GACY, KNOWN AS THE KILLER CLOWN, USED HIS POSITION AS CHARITY PERFORMER TO LURE YOUNG TEENAGE MEN INTO HIS SUBURBAN HOME IN CHICAGO, WHERE HE RAPED AND MURDERED THEM, BURYING THEIR BODIES IN HIS BASEMENT.



IT SHOULD ALSO BE POINTED OUT THAT BY COVERING THEMSELVES WITH MAKEUP, A COMMON SOURCE OF LEAD POISONING, CLOWNS AS A WHOLE SERVE AS THE VERY EMBODIMENT OF A GROTESQUE DISFIGUREMENT CAUSED BY TOXINS.



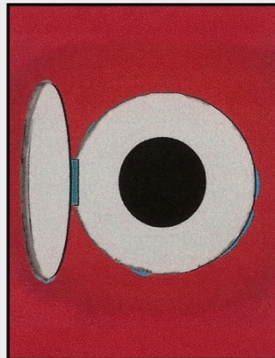
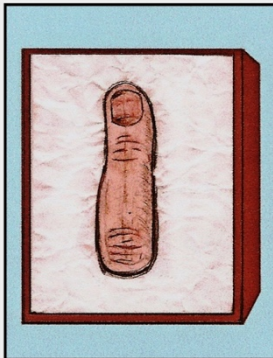
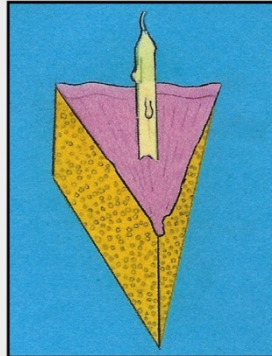
BATMAN'S NEMESIS, THE JOKER, SUFFERS THIS FATE, HAVING BEEN TURNED INTO A PSYCHOTIC CRIMINAL CLOWN WITH BLEACHED-WHITE SKIN, GREEN HAIR AND RUBY RED LIPS, AFTER FALLING INTO A VAT OF TOXIC CHEMICALS.



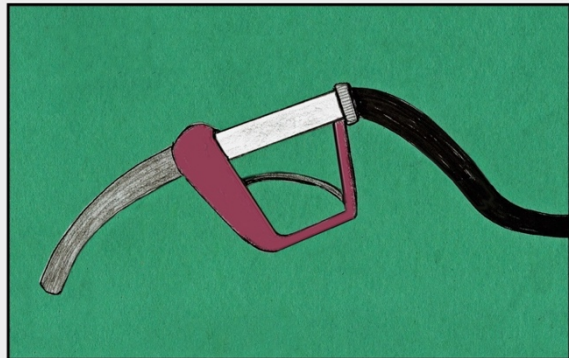
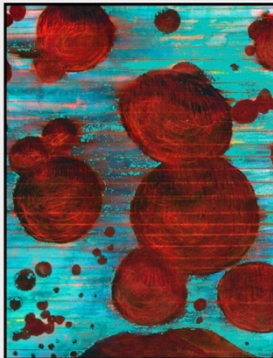
BY REFERENCING THESE REAL AND FICTIONAL KILLER CLOWNS, I AM NOT TRYING TO EQUATE ALL CLOWNS WITH JOHN WAYNE GACY, OR TO SUGGEST THAT THE TORONTO HEALTH DEPARTMENT SENT OUT THE EQUIVALENT OF HEATH LEDGER PLAYING THE JOKER.



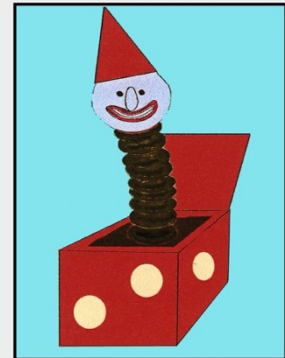
INSTEAD, I AM SUGGESTING THAT USING A CLOWN AS THE FRIENDLY FACE OF THE CITY'S EFFORTS IN CONFRONTING LEAD POISONING WOULD HAVE SENT A DISTURBING MESSAGE.

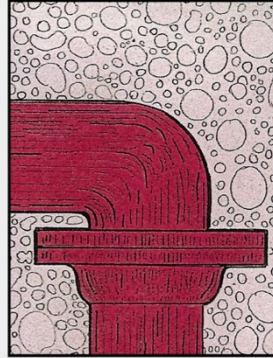
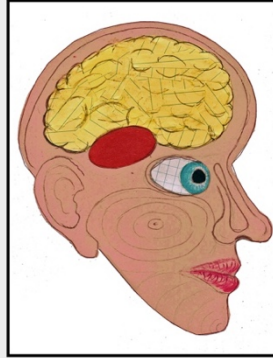
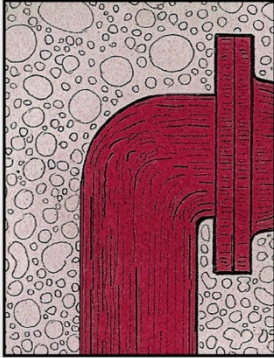


THE SCENARIO OF A CLOWN ENTERTAINING CHILDREN, AS THEY LINED UP TO BE PRICKED WITH A NEEDLE AND TESTED FOR LEAD POISONING, COULD NOT HELP BUT SUGGEST TO THE PEOPLE OF SOUTH RIVERDALE THAT THINGS WERE *NOT* AS THEY SHOULD BE.

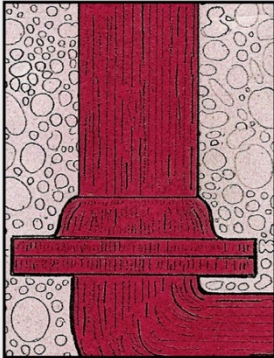


THE TRADITIONAL GOAL OF WORKING HARD TO SECURE A SAFE PLACE TO RAISE A FAMILY HAD CLEARLY GONE AWRY, REPLACED WITH AN AFTERNOON OF INDUSTRIAL PARTICULATE, CONTAMINATED SOIL, BLOOD TESTS, AND ELEVATED LEAD LEVELS.

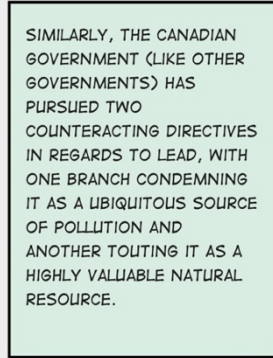




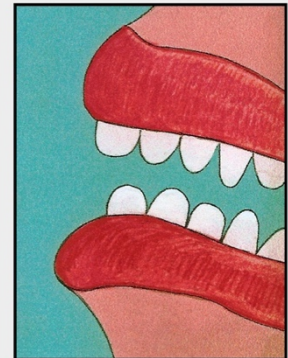
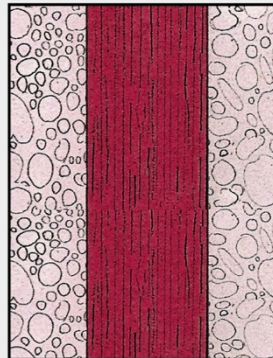
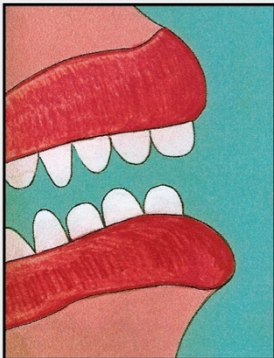
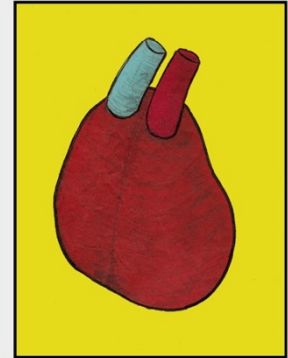
LIKE THE FIGURE OF THE CLOWN, LEAD ALSO EXHIBITS OPPOSING QUALITIES. IT HAS BEEN LONG VILIFIED AS A SOURCE OF POISON, BUT WAS ALSO SEEN AS AN IDEAL MEANS TO CONVEY FRESH WATER BECAUSE OF ITS MALLEABILITY.



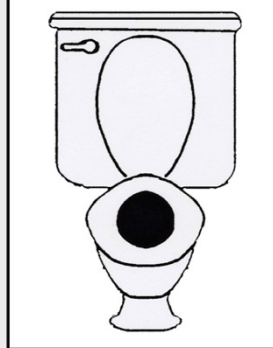
THE CLOWN'S ABILITY TO SIMULTANEOUSLY TELEGRAPH THESE TWO OPPOSING MESSAGES - EVERYTHING IS UNDER CONTROL AND THINGS ARE NOT AS THEY SHOULD BE - IS ANALOGOUS TO THE POLARIZED PROPERTIES OF LEAD.



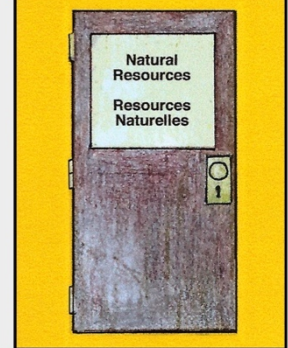
SIMILARLY, THE CANADIAN GOVERNMENT (LIKE OTHER GOVERNMENTS) HAS PURSUED TWO COUNTERACTING DIRECTIVES IN REGARDS TO LEAD, WITH ONE BRANCH CONDEMNING IT AS A UBIQUITOUS SOURCE OF POLLUTION AND ANOTHER TOUTING IT AS A HIGHLY VALUABLE NATURAL RESOURCE.



BEHIND ONE DOOR WE CAN IMAGINE HEARING THE MINISTER OF HEALTH PROUDLY CITING MEASURES THAT THE GOVERNMENT HAS INTRODUCED TO REDUCE EXPOSURE TO LEAD, SUCH AS THE REMOVAL OF LEAD FROM GASOLINE AND HOUSE PAINT.

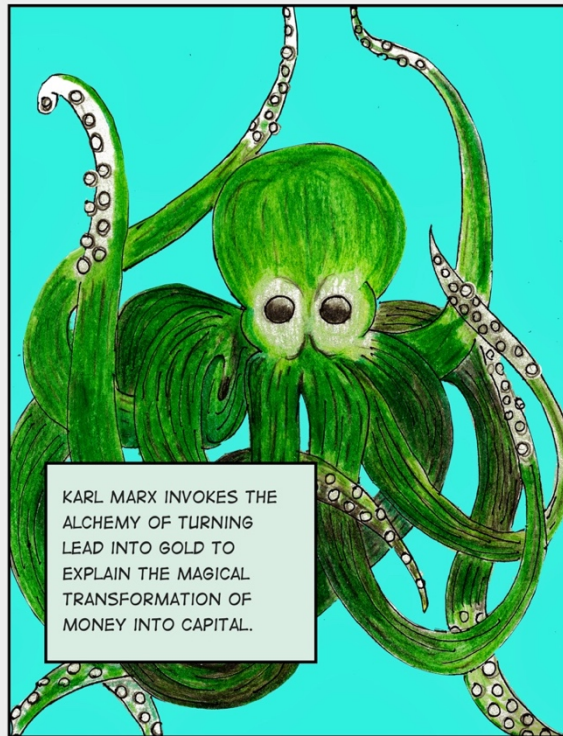


MEANWHILE DOWN THE HALL, THE MINISTER OF NATURAL RESOURCES IS PRAISING CANADA'S POSITION AS AN IMPORTANT PRODUCER OF REFINED LEAD, RANKED SIXTH IN THE WORLD.

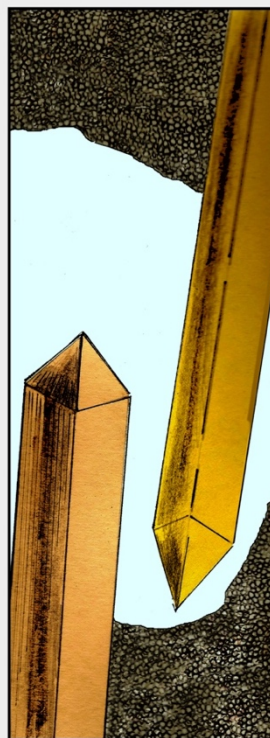
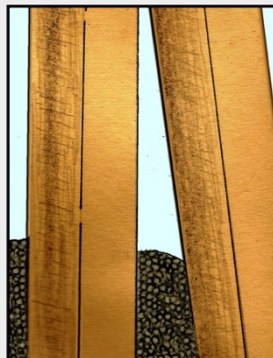
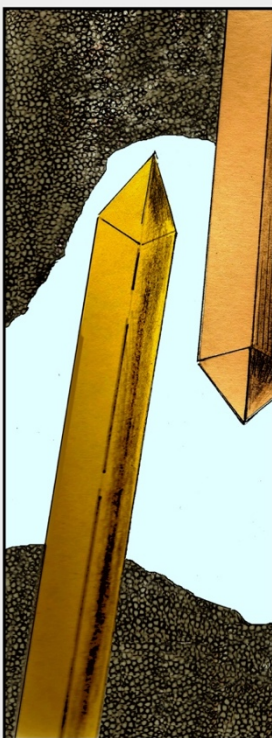




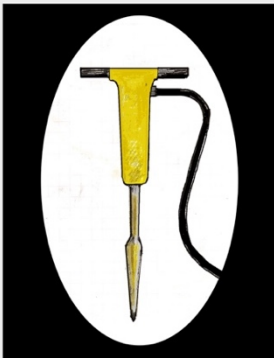
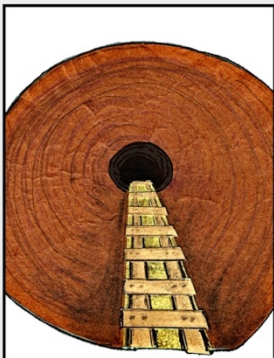
WHILE WE ARE ADDRESSING LEAD'S CONFLICTING PROPERTIES, IT SHOULD BE NOTED THAT THE ELEMENT HOLDS A PRIMARY PLACE IN ALCHEMY. IT IS OF COURSE LEAD THAT IS USED AS THE BASE IN THE ALCHEMIST'S GOAL OF MANUFACTURING GOLD.



KARL MARX INVOKES THE ALCHEMY OF TURNING LEAD INTO GOLD TO EXPLAIN THE MAGICAL TRANSFORMATION OF MONEY INTO CAPITAL.



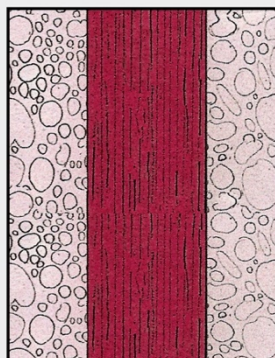
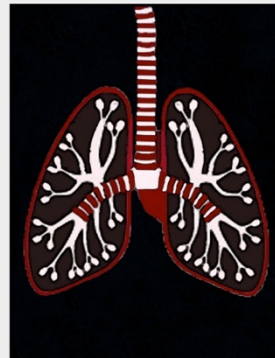
"CIRCULATION," STATES MARX, "BECOMES THE GREAT SOCIAL RETORT INTO WHICH EVERYTHING IS THROWN, TO COME OUT AGAIN AS THE MONEY CRYSTAL" (*CAPITAL, VOLUME I*, 229). HIS POINT IS THAT MONEY HAS THE MIRACULOUS ABILITY TO AUGMENT ITSELF JUST BY BEING PUT INTO CIRCULATION. FOR EXAMPLE, FOR THE SHAREHOLDER OF A SUCCESSFUL COMPANY, MONEY RETURNS EXPONENTIALLY. SOMEWHERE IN THE MARKETPLACE IT INCREASES IN SIZE. CAPITAL IS THIS CRYSTALLIZATION OF MONEY THAT ENDS WITH THE SHAREHOLDER COLLECTING HIS PROFITS.



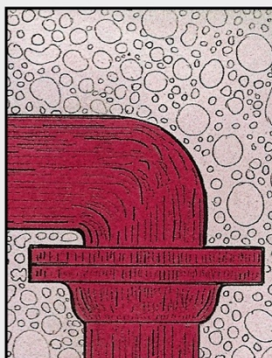
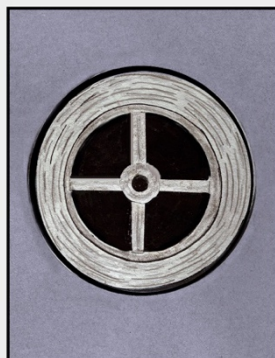
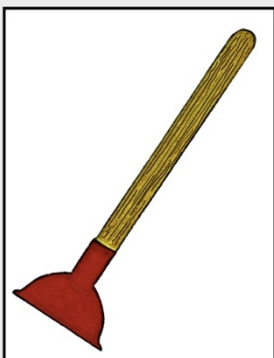
MICROSCOPIC TRACES OF LEAD ALSO PERFORM A FORM OF ALCHEMICAL MAGIC: ONCE INSIDE THE HUMAN BODY LEAD MAKES ITS WAY INTO THE BLOOD STREAM BY "MIMICKING" THE PROPERTIES OF OTHER CHEMICALS.

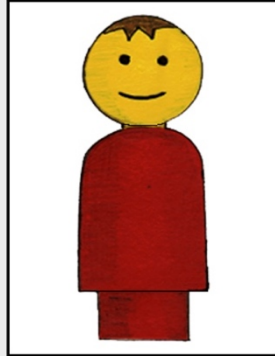


IN OTHER WORDS, BLOOD CELLS "MISTAKE" THE LEAD PARTICULATE FOR ESSENTIAL NUTRIENTS, SUCH AS CALCIUM, IRON, AND ZINC. THIS AGENTIAL AND COMBINED PROCESS OF CELLULAR DECEPTION, ABSORPTION, AND ACCUMULATION IS REFERRED TO AS BIOCHEMICAL MIMESIS IN MEDICAL JOURNALS.



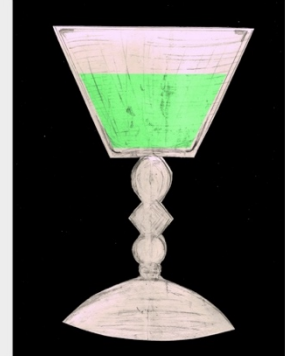
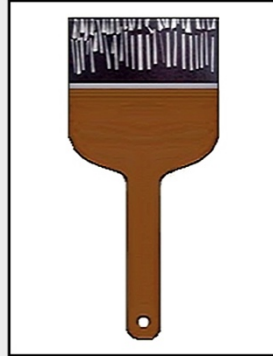
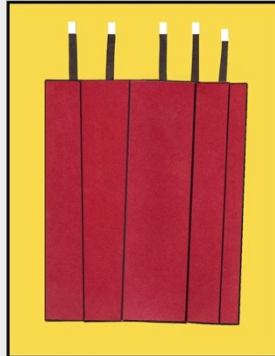
WE HAVE DRIFTED FAR FROM THE SPECIFICS OF SOUTH RIVERDALE BUT IT IS IMPORTANT TO SITUATE THE BLOOD TESTING STREET FAIR IN A BROADER CONTEXT BY TRACING THE VARIOUS TWISTS AND TURNS THAT ALLOW LEAD TO BE AN ELEMENT, RESOURCE, COMMODITY, TECHNOLOGY, POLLUTANT, AND NEUROTOXIN, ALL AT ONCE.



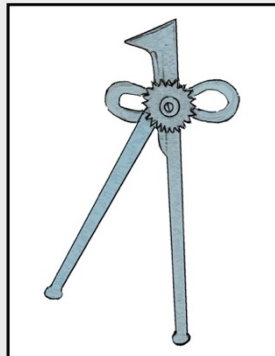
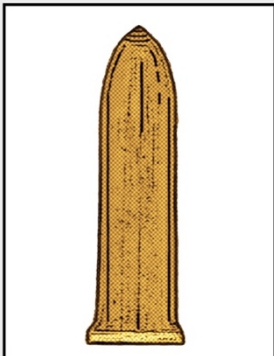


THIS COMBINATION OF DANGEROUS AND BENEFICIAL PROPERTIES IS OF COURSE NOT UNIQUE TO LEAD. RISK MANAGEMENT IS BASED ON THIS PRINCIPLE.

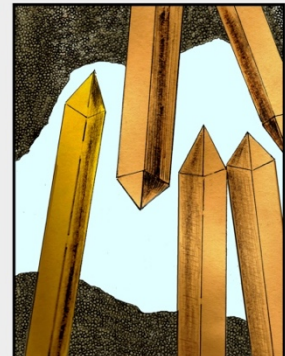
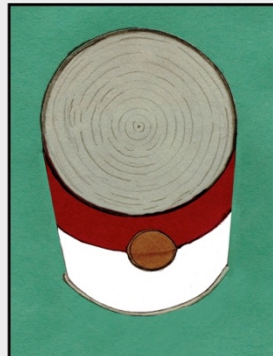
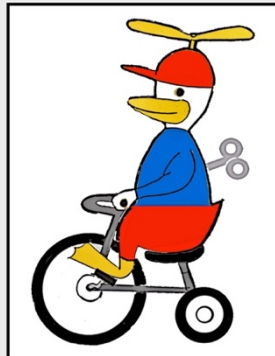
WHAT IS UNIQUE IS THE RELATIVE ANONYMITY THAT LEAD ENJOYS.



LEAD HAS MANAGED TO INFILTRATE EVERYDAY LIFE SO THAT IT IS BOTH UBIQUITOUS AND DISREGARDED, BOTH ACKNOWLEDGED AS BEING EVERYWHERE AND GENERALLY OVERLOOKED.



BY RELYING ON LEAD FOR THE PLUMBING OF CITIES AND FOR THE MANUFACTURING OF SUCH COMMONPLACE ITEMS AS BATTERIES, GASOLINE, HOUSE PAINT, GLASSWARE, CHILDREN'S TOYS, AND BULLETS, HUMANS HAVE BEFRIENDED LEAD, TURNED IT INTO A CONSTANT COMPANION.



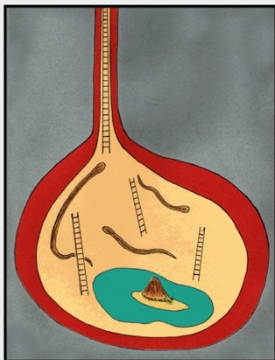
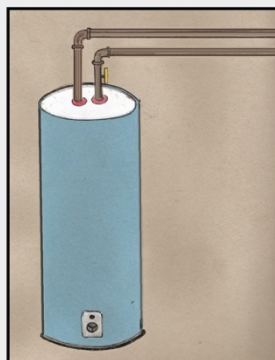
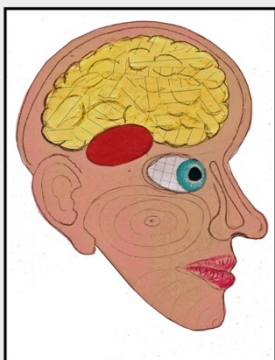
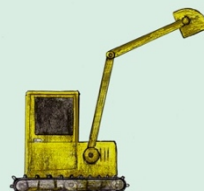
AS CHRISTIAN WARREN ASSERTS IN HIS SOCIAL HISTORY OF LEAD POISONING, WE HAVE MADE OUR "CITIES VERITABLE LEAD MINES" (2000: 13).



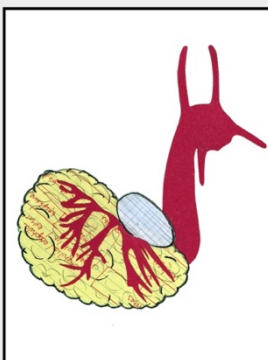
WHILE IT IS IMPORTANT TO HIGHLIGHT THE SORCERY OF CAPITALISM AND HOW THE DISCIPLES OF RISK MANAGEMENT CONTINUE TO TRANSFORM LEAD (A KNOWN POISON) INTO DESIRED COMMODITIES, IT IS ALSO ESSENTIAL TO POINT OUT THE UNRULINESS OF LEAD.

KEY TO LEAD'S MATERIAL PROPERTIES IS ITS ABILITY TO LINGER ON, RESISTING OUR ATTEMPTS TO MANAGE AND ABATE IT.

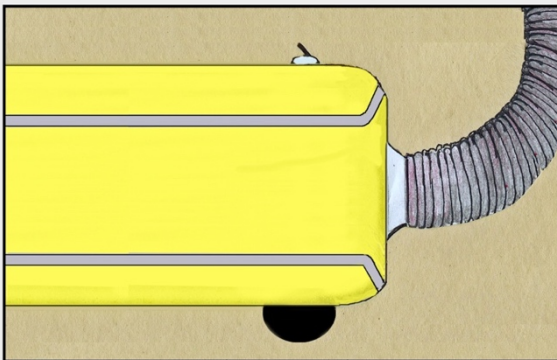
SOME PLANTS CAN ABSORB AND FILTER OUT LEAD FROM THE SOIL (SUNFLOWERS AND DANDELIONS ARE ESPECIALLY EFFECTIVE) BUT BIOREMEDIATION CANNOT KEEP PACE WITH MINING AND MANUFACTURING.

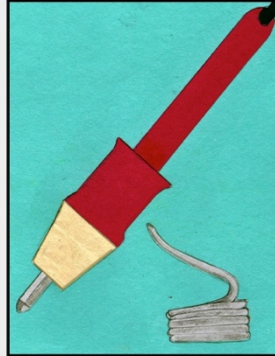
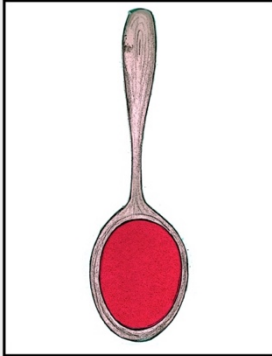


IT TOOK HUNDREDS OF MILLIONS OF YEARS FOR THE EARTH'S CHEMISTRY TO PRODUCE CONDITIONS CAPABLE OF SUPPORTING LIFE. AS PART OF THIS PROTRACTED NEGOTIATION OF ELEMENTAL FORCES, LEAD WAS LOCKED AWAY IN MINERAL DEPOSITS DEEP IN THE GROUND.

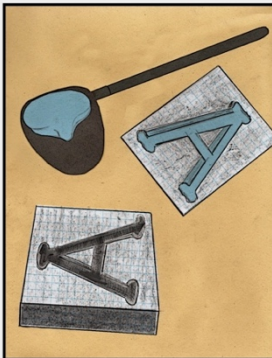
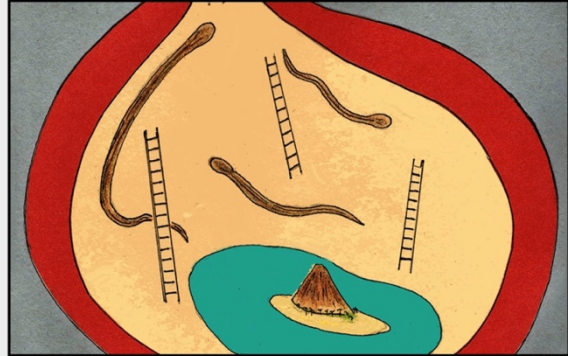
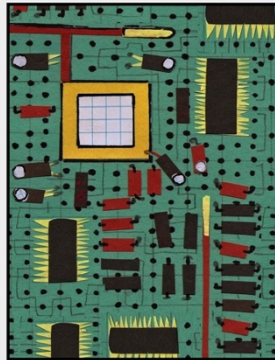


THIS GEOLOGICAL FACT UNDERSCORES THE IDEA THAT LEAD BELONGS TO AN ANCIENT PLANETARY ORDER OF THINGS THAT DOES NOT COINCIDE WITH HUMAN ASPIRATIONS OR HEALTH.



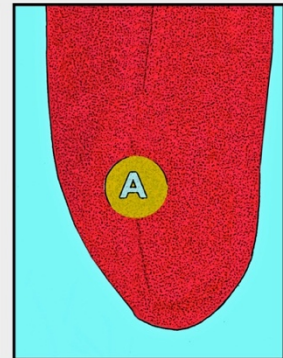


MUCH OF THIS COBBLED STORY REVOLVES AROUND THIS GEOLOGICAL FACT: WE CAN ATTEMPT TO ABATE OUR CITIES BY DIGGING UP CONTAMINATED SOIL AND MOVING IT ELSEWHERE BUT LEAD'S COMPANIONSHIP AND SORCERY ARE WITH US FOREVER.

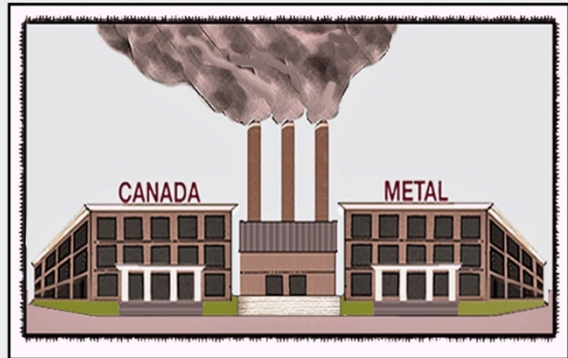


GIVEN THE DANGERS ASSOCIATED WITH LEAD, IT IS HARD TO IMAGINE THAT THE INDUSTRY WOULD BE ABLE TO INSPIRE CONFIDENCE OR PUBLIC GOODWILL, BUT IT IS IMPORTANT TO REMEMBER THAT SUCH SENTIMENTS ARE SUBJECT TO HISTORY.

THIS AGED POSTCARD, WITH ITS COMBINED MESSAGES OF INDUSTRY AND CIVIC PRIDE, SPEAKS OF A TOXIC WILL TO POWER THAT CANNOT BE SIMPLY WRITTEN OFF AS A SET OF PRIORITIES THAT BELONG TO THE PAST. THE SAME SORTS OF PRIORITIES ARE STILL WITH US, AS IS THE LEAD.

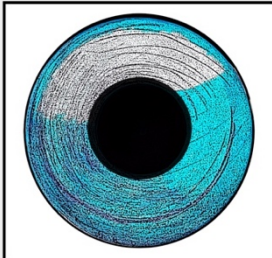
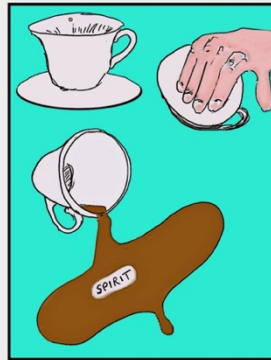
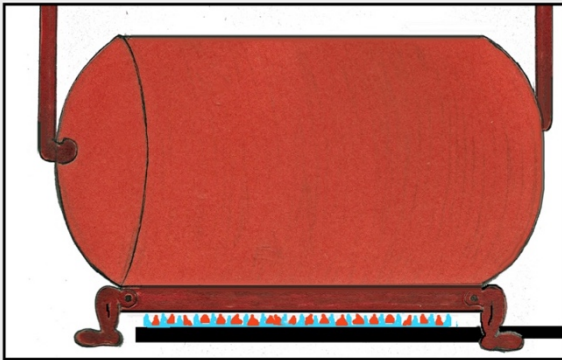


INITIALLY CANADA METAL OCCUPIED A VAST SEVEN-ACRE LOT IN THE WEST END OF THE CITY. A POSTCARD REPRESENTS THE COMPANY AS A BEACON OF INDUSTRY. THE TALL CHIMNEYS AND PLUMES OF SMOKE PORTRAY A VICTORIAN TORONTO EARNESTLY TRYING TO ESTABLISH ITSELF AS A POWERHOUSE OF THE GREAT LAKES.

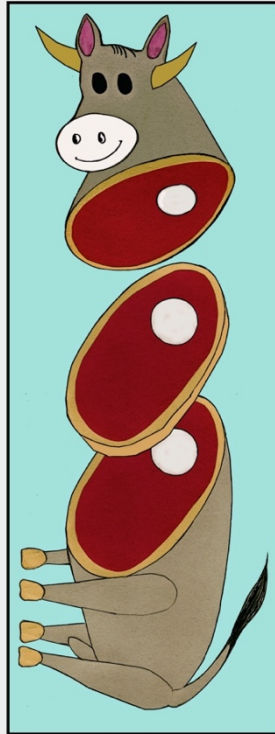




ALONG WITH LEAD PIPING AND PAINTS, THE COMPANY ALSO MANUFACTURED WATER-HEATING TANKS AND LAUNDRY TUBS, MARKETING UNDER SUCH NAMES AS THE "ARISTOCRAT" AND THE "PUSSYFOOT" (J. E. MIDDLETON 1923).

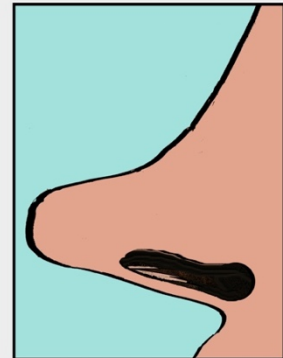


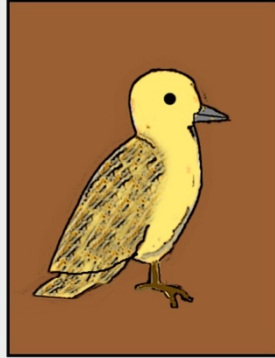
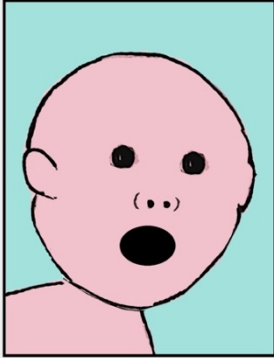
IN 1925 CANADA METAL MOVED PART OF ITS OPERATIONS TO SOUTH RIVERDALE, BUILDING A LEAD REFINERY ON EASTERN AVENUE.



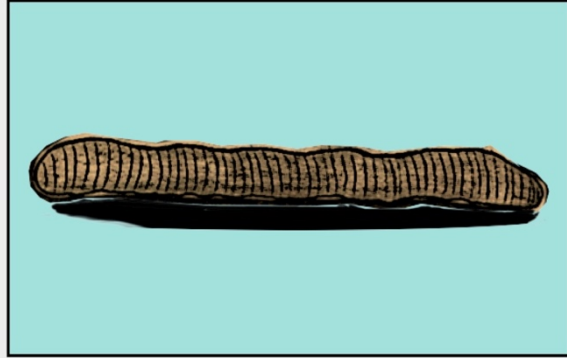
ALONG WITH PROVIDING HOMES FOR WORKING CLASS FAMILIES, THE AREA WAS ALSO HOME TO A VAST STOCKYARD, TWO COMPETING TANNERIES, A SLAUGHTERHOUSE, AND A NUMBER OF LARGE FACTORIES INCLUDING LEVER BROTHERS SOAP, COLGATE PALMOLIVE, AND WRIGLEY'S CHEWING GUM.

THE CITY'S FIRST LARGE-SCALE SEWAGE TREATMENT PLANT WAS ALSO SITUATED ON EASTERN AVENUE. I MENTION THESE OTHER SOURCES OF POLLUTION TO MAKE THE POINT THAT SOUTH RIVERDALE WAS SO SATURATED WITH FUMES, NOISE, AND DUST THAT THE LEAD SMELTER WOULD HAVE MORE OR LESS BLENDED IN.

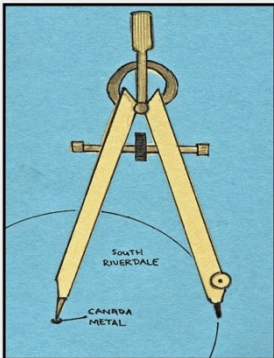
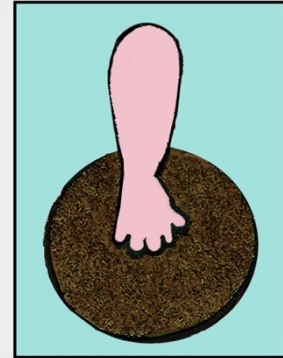




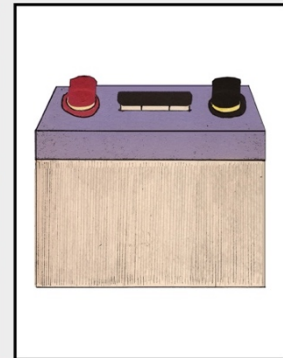
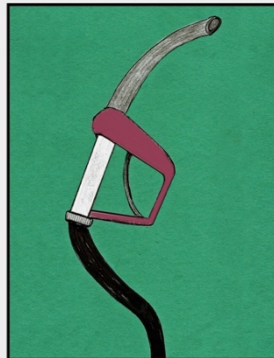
IT WASN'T UNTIL THE 1970S THAT THE RISK OF LEAD POISONING IN SOUTH RIVERDALE WAS VOICED AS A MATTER OF PUBLIC CONCERN. THE ISSUE WAS FUELLED BY THE PASSING OF THE ONTARIO ENVIRONMENTAL PROTECTION ACT IN 1973, AND BY THE EFFORTS OF A SMALL GROUP OF RESIDENTS, WHO FOUND THEMSELVES UNIFIED AS NEIGHBOURHOOD ACTIVISTS.



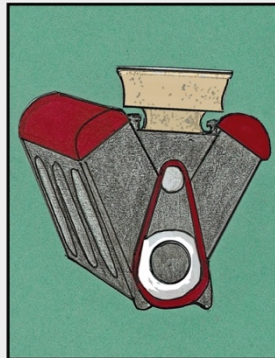
CHALLENGING THE STATUS QUO THAT WOULD ALLOW CANADA METAL TO OPERATE IN THEIR NEIGHBOURHOOD, THESE RESIDENTS UTILIZED THE SOUTH RIVERDALE COMMUNITY HEALTH CENTRE AS THEIR HEADQUARTERS. THEY WORKED WITH THE CENTRE'S STAFF TO INITIATE LOCAL FORMS OF ENVIRONMENTAL EDUCATION AND ACTIVISM, INCLUDING THE BLOOD TESTING STREET FAIR.



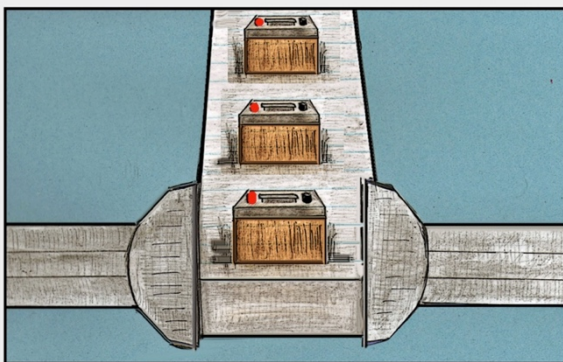
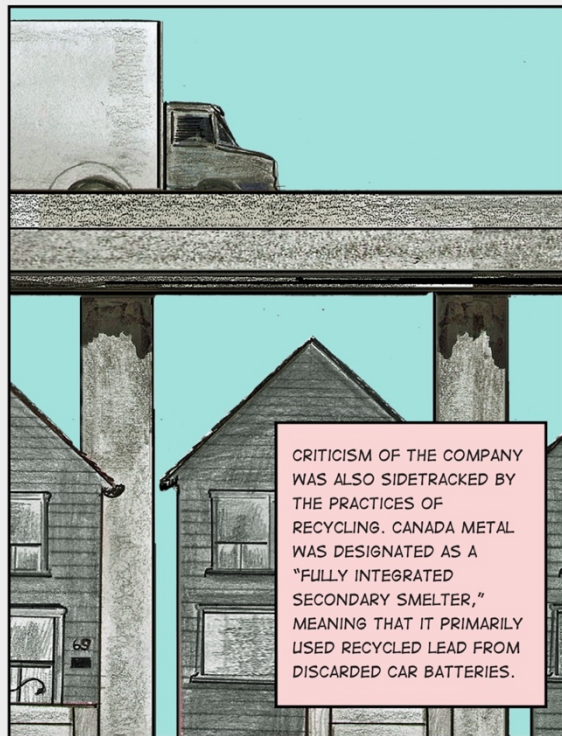
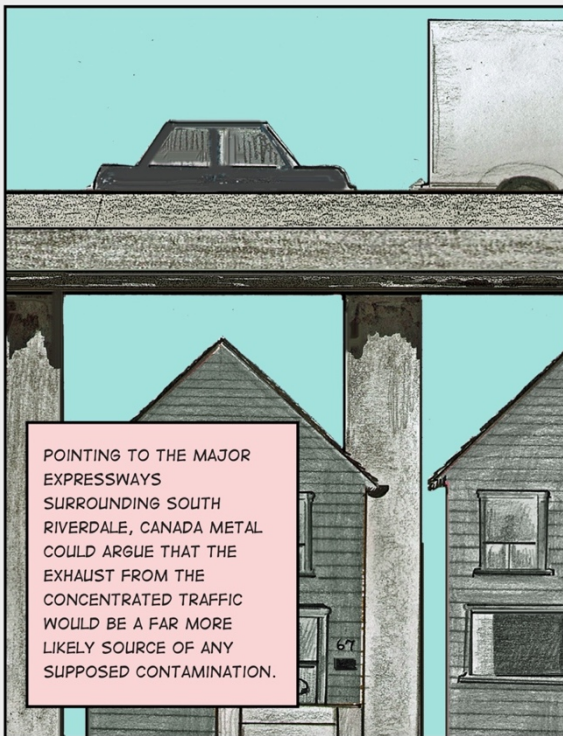
WHILE SPOKESPERSONS FOR CANADA METAL (CONSISTENTLY MALE) ARGUED THAT THE COMPANY ADHERED TO STRICT SAFETY STANDARDS, COMMUNITY SPOKESPERSONS (CONSISTENTLY FEMALE) ARGUED THAT THE HEALTH OF THE NEIGHBOURHOOD CHILDREN SHOULD TRUMP ALL OTHER CONCERNS.



FROM THE ADVANTAGE OF HINDSIGHT, ONE WOULD IMAGINE THAT DRAWING A DIRECT LINE BETWEEN LEAD POISONING AND A LOCAL LEAD SMELTER WOULD BE A SIMPLE MATTER THAT WOULD NOT GENERATE DOUBT OR REQUIRE MUCH CIVIC DEBATE.



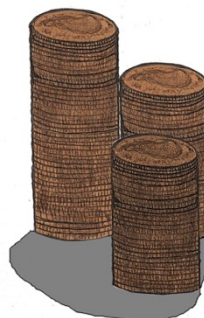
HOWEVER, THE TASK OF FRAMING CANADA METAL AS A NEIGHBOURHOOD BULLY WAS COMPLICATED BY THE FACT THAT UP UNTIL 1993 GASOLINE IN CANADA CONTAINED LEAD IN THE FORM OF TETRAETHYL LEAD, AN ANTI-KNOCKING AGENT.



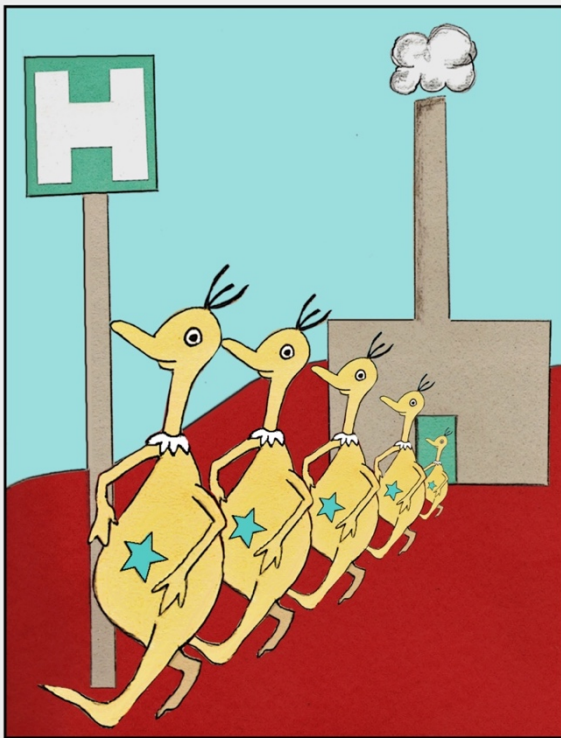
THE TEXT GOES ON TO LIST VARIOUS PRODUCTS MANUFACTURED BY THE COMPANY. WHILE MUCH OF THE RECYCLED LEAD WAS USED TO CREATE NEW CAR BATTERIES, THE COMPANY STRESSED THAT IT ALSO PRODUCED THE LOCKING MECHANISM USED IN SAFETY BELTS, AND RADIATION SHIELDING, NECESSARY FOR X-RAYS AND CANCER TREATMENTS.



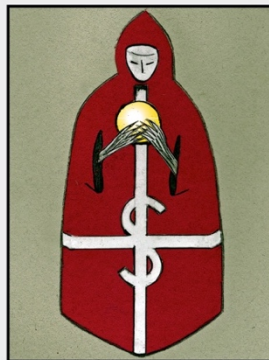
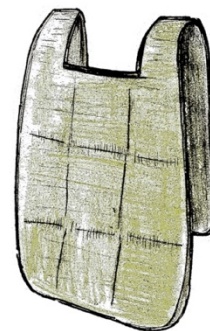
IN A PUBLIC STATEMENT ISSUED IN 1986 CANADA METAL WENT SO FAR AS TO PRESENT ITSELF AS A PIONEER IN INDUSTRIAL RECYCLING AND SUSTAINABILITY: "BY RECYCLING WE ELIMINATE 30,000 TONS OF AUTOMOTIVE BATTERIES BEING DUMPED INTO LANDFILL SITES AND POLLUTING OUR ENVIRONMENT."



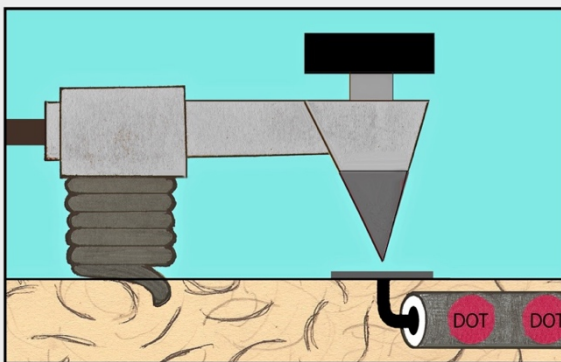
SUCH DECLARATIONS OF RESPONSIBLE BUSINESS PRACTICES ARE ESSENTIAL TO CAPITALISM'S CLAIM OF BEING OUR ONLY VIABLE OPTION. THIS FASHIONING OF RESPONSIBLE "CORPORATE CITIZENS" AND "COMMUNITY STAKEHOLDERS" IS PART OF THE INSIDIOUS NEOLIBERAL INDOCTRINATION IN WHICH HEALTH - TAKING CARE OF THE SICK - BECOMES A PRIMARY SOURCE OF CAPITAL.



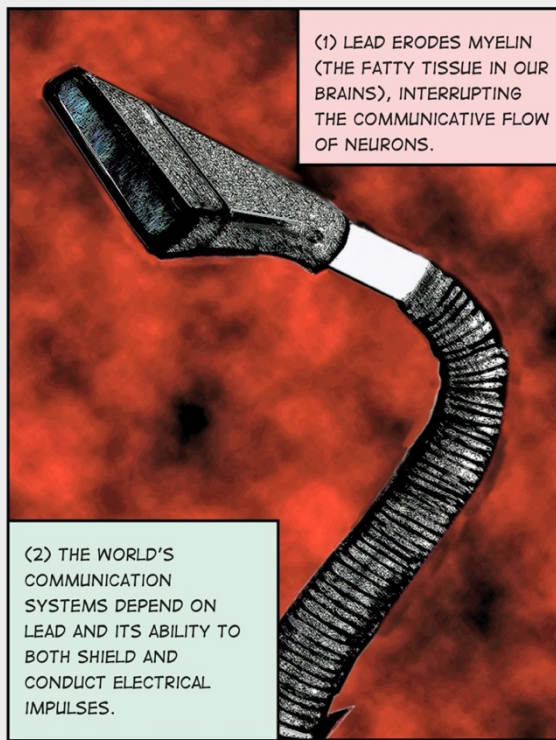
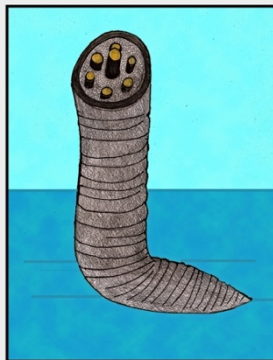
CAPITALISM SUCCESS-
FULLY MAINTAINS A
GHOULISH ECONOMY IN
WHICH POLLUTING AND
MEDICAL INDUSTRIES
WORK IN TANDEM SO THAT
MONEY IS MADE IN WAYS
THAT MAKE PEOPLE SICK
AND THEN MORE MONEY
IS MADE TREATING THESE
SICK PEOPLE.



THE LEAD INDUSTRY
PROVIDES US WITH A VIVID
EXPRESSION OF THIS
FORM OF CAPITALIST
SORCERY: HOW CAN WE
COMBAT CANCER IF WE
CAN'T MANUFACTURE LEAD
VESTS AND IN THE
PROCESS EXPOSE PEOPLE
TO LEAD DUST, A KNOWN
CARCINOGEN?

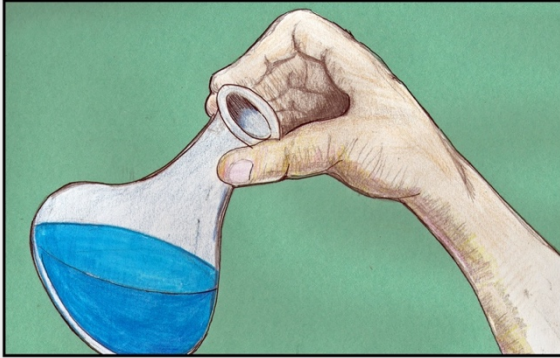


THE STORY OF LEAD HAS
MANY LINES OF INQUIRY
THAT I CAN'T GET TO. FOR
EXAMPLE, IN DOING THE
INITIAL RESEARCH FOR
THIS COMIC BOOK I
QUICKLY BECAME
OBSESSED WITH THESE
TWO OPPOSING FACTS:



(1) LEAD ERODES MYELIN
(THE FATTY TISSUE IN OUR
BRAINS), INTERRUPTING
THE COMMUNICATIVE FLOW
OF NEURONS.

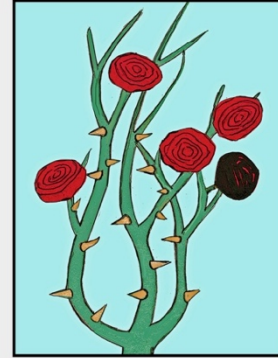
(2) THE WORLD'S
COMMUNICATION
SYSTEMS DEPEND ON
LEAD AND ITS ABILITY TO
BOTH SHIELD AND
CONDUCT ELECTRICAL
IMPULSES.



THESE OTHER STORYLINES AND VISUAL CUES WILL HAVE TO WAIT FOR OTHER COMICS. BUT HOW AM I GOING TO END THIS ONE? HOW DO I PUT AN END TO THIS DIALOGUE OF IMAGES AND TEXT AND PROVIDE SOME SENSE OF CONCLUSION WHILE ARGUING THAT THERE IS NO END TO TOXICITY?



I COULD RETURN TO THE SPECIFICS OF SOUTH RIVERDALE AND NOTE THAT THE BLOOD TESTING STREET FAIR RAN FOR FOUR YEARS, CONSISTENTLY CONFIRMING THAT THE CHILDREN IN THE NEIGHBOURHOOD HAD ELEVATED LEVELS OF LEAD IN THEIR BLOOD.



THESE TESTS IN TURN HELPED CONVINCE THE CITY AND THE PROVINCE TO JOINTLY INITIATE A LARGE ABATEMENT PROJECT. THUS I COULD END WITH THIS HARD-WON VICTORY ON THE PART OF THE NEIGHBOURHOOD ACTIVISTS IN THEIR PROLONGED BATTLE WITH CANADA METAL.

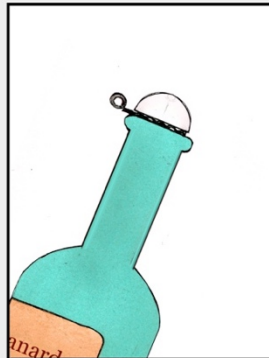
MORE SPECIFICALLY, THIS STORY COULD END WITH A PRESS CONFERENCE HELD ON A FRONT LAWN IN SOUTH RIVERDALE. IT IS THE FALL OF 1987 AND THE CITY'S MAYOR, (ART EGGETON) AND THE PROVINCE'S MINISTER OF THE ENVIRONMENT (JIM BRADLEY) POSE IN FRONT OF CAMERAS.



NEIGHBOURHOOD WOMEN AND CHILDREN ARE WEARING YELLOW T-SHIRTS PRINTED FOR THE OCCASION.



IN A ARCHIVED TV NEWS REPORT, THE TWO MEN ARE SHOWN WEARING WHITE DRESS SHIRTS AND BLACK TIES. THEIR SLEEVES ARE ROLLED UP AND THEY ARE HOLDING SHOVELS IN THEIR HANDS.

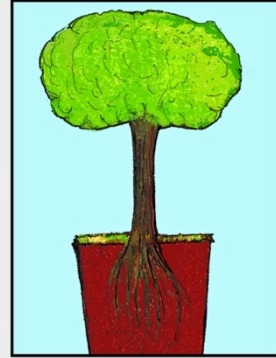
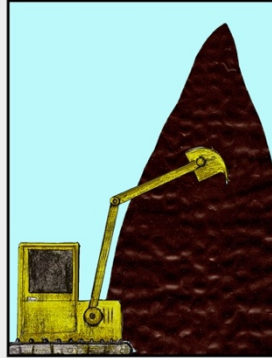


IN FRONT OF A BACKGROUND OF BALLOONS AND PLAYING CHILDREN, THE MINISTER ANNOUNCES A MASSIVE SOIL REPLACEMENT PROJECT, TARGETING OVER 1000 HOMES.

HE ALSO DECLARES ON CAMERA THAT CANADA METAL WILL BE HELD RESPONSIBLE FOR THE COSTS OF THE CLEAN UP AND HE THREATENS TO TAKE THE COMPANY TO COURT IF THEY REFUSE TO PAY.

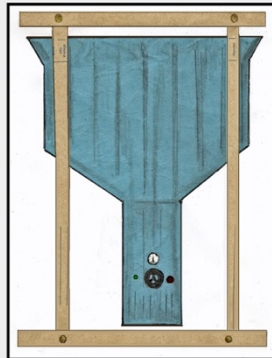
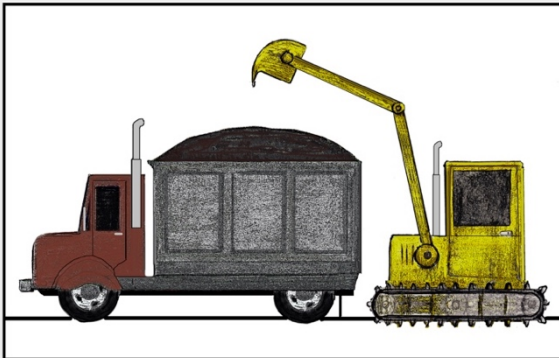
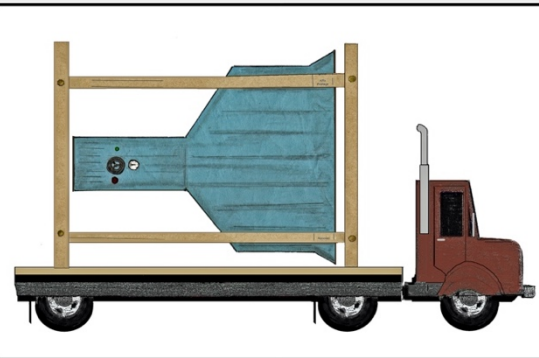


I DON'T WANT TO BELITTLE THIS COMMUNAL VICTORY BUT TO END OUR STORY ON THIS COMBINED NOTE OF ABATEMENT, CELEBRATION, AND GOVERNMENT RESOLVE WOULD BE DISHONEST.



WHILE THE PROJECT DID REMOVE CONTAMINATED SOIL FROM MANY SOUTH RIVERDALE HOMES, IT WAS RELATIVELY LIMITED IN ITS SCOPE AND EFFECTIVENESS.

THERE WAS ALSO A GREAT AMOUNT OF CONFUSION AND ANGER IN REGARDS TO PEOPLE BEING EXPOSED TO THE DUST FROM THE PILES OF CONTAMINATED SOIL SPREAD THROUGHOUT THE NEIGHBOURHOOD, WAITING TO BE TRUCKED TO A DUMP OUTSIDE OF THE CITY.



CANADA METAL CONTINUED TO DISCHARGE LEAD PARTICULATE AND EXCEED THE PROVINCE'S "DESIRABLE AMBIENT AIR QUALITY CRITERIA." AND ON THE HEELS OF THE ABATEMENT, THE COMPANY INSTALLED A GIANT BATTERY CRUSHER, WHICH SUBSTANTIALLY INCREASED ITS PRODUCTION AND EMISSIONS.

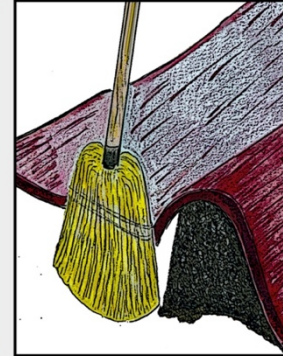
THE PROVINCE LAUNCHED AN \$11 MILLION LAWSUIT AGAINST CANADA METAL IN 1988 TO RECOVER THE COST OF THE ABATEMENT. THE COMPANY IN TURN REFUSED TO PAY AND USED THEIR LAWYERS TO STALL LITIGATION.

MEANWHILE



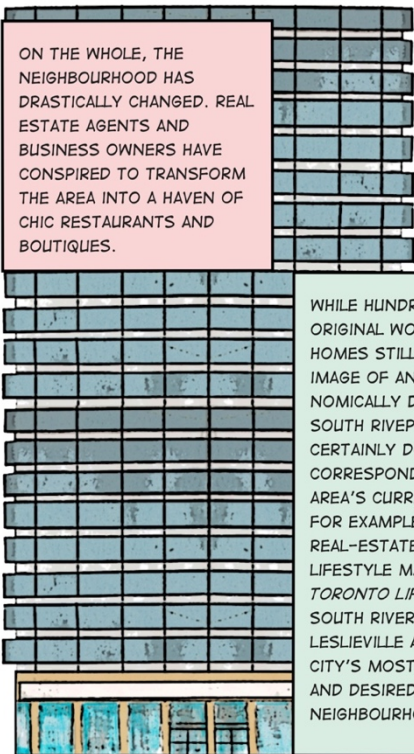
IN 1996, AFTER THE CASE HAD LAGGED IN THE JUSTICE SYSTEM FOR EIGHT YEARS, THE PROVINCE MORE OR LESS CONCEDED DEFEAT, AGREEING TO DROP ITS LAWSUIT IN RETURN FOR CANADA METAL'S MEAGRE OFFER TO ESTABLISH A \$65,000 TRUST FUND (COOPER 1998).

BY THIS POINT IN TIME, THE COMPANY HAD CLOSED ITS PLANT ON EASTERN AVENUE AND HAD SET UP A MUCH SMALLER FACILITY ON A NEARBY STREET. TWO YEARS AGO (2013), WHEN I WENT TO TAKE PHOTOS OF THIS NEW LOCATION I FOUND THE BUILDING BEING DEMOLISHED TO MAKE WAY FOR CONDOS.

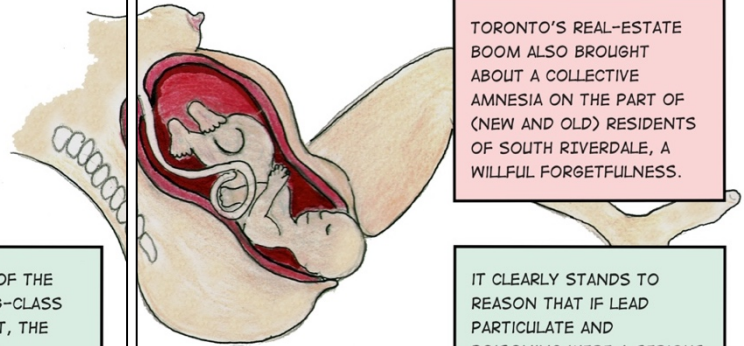


THE EASTERN AVENUE ADDRESS - THE SITE AT THE CENTRE OF THE LEAD DRAMA - HAS ACTUALLY MANAGED TO SURVIVED THE WRECKING BALL. THE BUILDING WAS ORIGINALLY SCHEDULED FOR DEMOLITION BUT IT WAS EVENTUALLY GUTTED AND NOW SERVES AS A BUSY FILM STUDIO.

ON THE WHOLE, THE NEIGHBOURHOOD HAS DRASTICALLY CHANGED. REAL ESTATE AGENTS AND BUSINESS OWNERS HAVE CONSPIRED TO TRANSFORM THE AREA INTO A HAVEN OF CHIC RESTAURANTS AND BOUTIQUES.



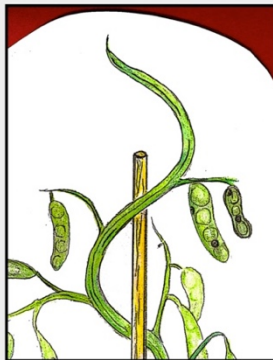
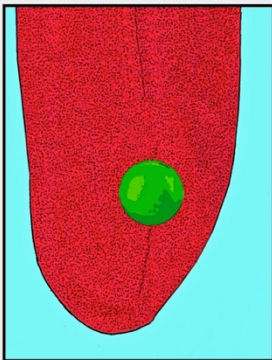
WHILE HUNDREDS OF THE ORIGINAL WORKING-CLASS HOMES STILL EXIST, THE IMAGE OF AN ECO-NOMICALLY DEPRESSED SOUTH RIVERDALE CERTAINLY DOES NOT CORRESPOND WITH THE AREA'S CURRENT PROFILE. FOR EXAMPLE, THE ONLINE REAL-ESTATE GUIDE OF THE LIFESTYLE MAGAZINE, *TORONTO LIFE*, DESIGNATES SOUTH RIVERDALE/ LESLIEVILLE AS ONE OF THE CITY'S MOST FASHIONABLE AND DESIRED NEIGHBOURHOODS.



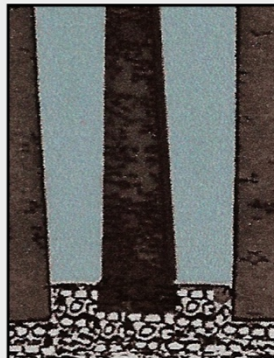
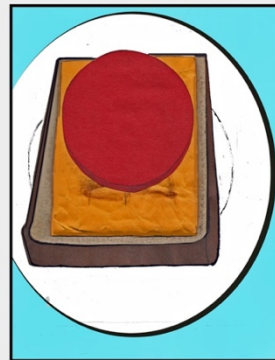
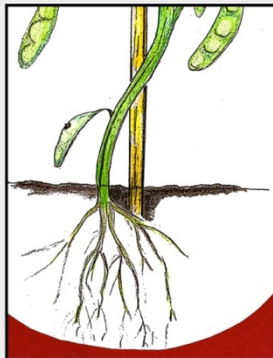
TORONTO'S REAL-ESTATE BOOM ALSO BROUGHT ABOUT A COLLECTIVE AMNESIA ON THE PART OF (NEW AND OLD) RESIDENTS OF SOUTH RIVERDALE, A WILLFUL FORGETFULNESS.



IT CLEARLY STANDS TO REASON THAT IF LEAD PARTICULATE AND POISONING WERE A SERIOUS PROBLEM IN THE 1970S AND 80S THAT WARRANTED GOVERNMENT INTERVENTION, THEN MUCH OF THAT PARTICULATE WOULD STILL REMAIN AND WOULD CONSTANTLY BE STIRRED UP WITH THE CONTINUOUS CONSTRUCTION AND RENOVATIONS THAT ACCOMPANY GENTRIFICATION.



DESPITE THIS LOGIC, THERE IS TACIT CONSENSUS THAT ALTHOUGH LEAD WAS A CONCERN IN THE RECENT PAST, THE CITY AS A WHOLE HAS SURVIVED THESE DANGERS AND RESIDENTS NEED NO LONGER TO BE WARY OF WHAT MIGHT LIE BURIED IN THEIR YARDS.

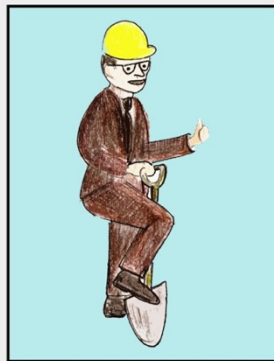


BUT CHILDREN IN TORONTO AND OTHER CITIES STILL SUFFER FROM ELEVATED LEVELS OF LEAD IN THEIR BLOOD, ESPECIALLY THOSE WHO LIVE IN OLDER HOUSES AND APARTMENTS AND ARE EXPOSED TO THE FLAKES AND DUST OF LEAD PAINT ON A DAILY BASIS.



THIS COMIC IS OFFERED AS A COUNTER-HISTORY, AN ASSEMBLED TALE THAT WORKS TO DISPEL OR DISLODGE THIS FIXED NOTION THAT LEAD POISONING BELONGS TO THE PAST.

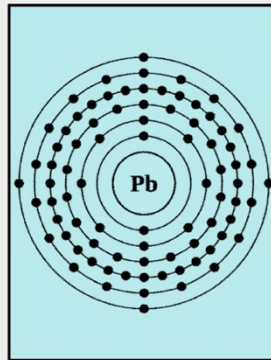
IN A WORLD SATURATED WITH LEAD IT SHOULD BE APPARENT THE REPEATED CLAIMS OF GETTING THE LEAD OUT, REASONABLE RISK, AND ACCEPTABLE THRESHOLDS, HAVE BEEN EXHAUSTED AND RING HOLLOW.



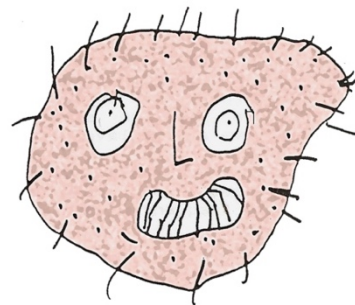


STORIES THAT WERE TOLD
OF ECOLOGICAL
REDEMPTION HAVE BEEN
REPLACED WITH GOTHIC
ACCOUNTS IN WHICH
HUMANS AND LIFE IN
GENERAL ARE RENDERED
AS *ALWAYS ALREADY
POISONED, GREY AND
METALLIC.*

IN THIS GOTHIC
RECONFIGURATION OF
LIFE, THE AGE OF CAPITAL
AND THE AGE OF LEAD ARE
IMPOSSIBLE TO PRY
APART. AND JUST LIKE THE
SORCERY OF CAPITAL,
THERE SEEMS TO BE NO
END TO THE SORCERY OF
LEAD: IT ONLY PAUSES TO
BE PICKED UP LATER.



the End



Chapter 3: The Lead Archive and the Toxic Politics of Consensus

Setting the Story

There appears to be no threshold level below which lead causes no injury to the developing human brain.

—The World Health Organization

Lead (Pb) is a naturally occurring element found in rock and soil, yet widespread anthropogenic use has resulted in its ubiquitous presence in the environment.

—Health Canada

In a 2013 report entitled *Final Human Health State of the Science Report on Lead*, Health Canada acknowledges that lead enjoys a ubiquitous presence as the result of human designs and desires. By mining and incorporating lead into essential commodities (car batteries, paint, gasoline, electronic soldering, plumbing, glassware), humans have, in effect, befriended lead, turning it into a constant companion. But unlike the ubiquitous dog or cat, lead is a well-known poison that attacks the human brain and nervous system and can cause a range of effects, from learning disabilities to death. Recently, neurologists have determined that lead disrupts the brain's circuitry by eating away at myelin, the white fatty material that functions as a sheath of insulation between neurons (Drum 2013: 33). This idea that humans have befriended a neurotoxin should not sit well with the Canadian public, however lead poisoning is generally seen as old news, a problem that was dealt with in 1980s along with acid rain. A quick survey of the websites of popular environmental groups operating in Canada (ecojustice, Greenpeace Canada, David Suzuki Foundation) accentuates the anonymity that lead poisoning enjoys, as it is completely absent from the mission statements of these groups and their detailed lists of pressing environmental concerns. Similarly, the unnamed authors of the Health Canada report attempt to undercut lead's ubiquity by continually emphasizing that rates of exposure have fallen significantly since the 1990s and the phasing out of leaded gas and lead-based house paints. The report's overall message is the contradictory idea that lead is an ever-present danger that refuses to go away but that there is no reason for alarm because it was much worse in the past and now everything thing is more or less under control.

Along with acknowledging lead's ubiquity, the authors of the report also point out that Health Canada's current blood lead threshold of 10 µg/dL—the maximum amount of lead a person in Canada can have in their blood before it is considered toxic—has been seriously challenged by toxicology experts.⁶ “There is sufficient evidence,” they state, “that blood lead levels below 5 µg/dL are associated with adverse health effects. Adverse health effects have also been associated with blood lead levels as low as 1-2 µg/dL” (Health Canada 2013: 4).⁷ Based on this new evidence, the World Health Organization (WHO) went so far as to declare that there is no safe level of lead.⁸ But in sharp contrast to the WHO, the authors of the Health Canada report insist that these new findings are tainted with a degree of uncertainty. In a concluding section of the report, subtitled “Level of Confidence and Uncertainties,” the authors list a number of uncertainties that detract from the notion that people are affected by low levels of exposure to lead:

The use of BLLs [Blood Lead Levels] as the biomarker of exposure is well correlated with health effects, but does not represent whole body burden (e.g., lead sequestered into bone). Also, confounders such as socioeconomic factors, which can influence IQ score results, were not always accounted for in human studies. Effects may be related, in part,

⁶ The measurement µg/dL is the number of micrograms per decilitre.

⁷ Canada and a number of other countries established blood lead thresholds as national standards in the 1970s. In 1978, Health Canada established its first blood lead threshold (also referred to as a “level of concern”) at 40 µg/dL (with no age group specified). In 1987, it reduced this level of concern from 40 to 30–35 µg/dL for male adults and 20–25 µg/dL for female adults and children. And in 1994, after consultations with provincial health officials, this level was further deduced to the current level of 10 µg/dL (again with no age group specified). A similar history of steady reduction in blood lead levels can be charted in other countries. Medical practitioners are meant to use blood lead level thresholds as markers of the potential need to intervene.

⁸ The WHO provides a helpful factsheet in which they clearly state: “There is no known level of lead exposure that is considered safe” (www.who.int/mediacentre/factsheets/fs379/en/).

to co-exposures to other chemicals. (60)

But these uncertainties are not specific to low exposure and actually detract from making any sort of conclusive statement about lead exposure and contamination in general. Health Canada follows this list by asserting cautious restraint: “It is considered appropriate,” it states, “to apply a conservative approach when characterizing risk; accordingly, additional measures to further reduce exposures of lead to Canadians are warranted” (61). Here we are presented with an inverse and perverse expression of the precautionary principle, one that favours on the side of maintaining higher blood lead levels as an index of toxicity.

The report’s final directive is not to take any sort of immediate action but to stay the course. Thus, the authors can maintain that Health Canada is working in the best interests of the Canadian population, while at the same time refusing to introduce new measures that would deter the dissemination of lead particulate or hinder the standard operations of polluting industries. By recommending caution—essentially doing nothing—while simultaneously pointing out a clear gap between Canada’s current threshold for medical intervention and the latest evidence of lead’s toxicity, Health Canada occupies a contradictory position that ultimately puts Canadians at risk.⁹

In addressing this evident complacency of the part of Health Canada, it is important to point out that Canada is a leading nation in lead mining and that Canadian mining companies are in the business of bring tons of lead-containing alloys to the surface and refining them to extract concentrated/purified lead. So while the Health Canada website warns the general public of the ubiquity of lead, the success of Canadian lead mining companies is celebrated on another federal website, that of Canada’s Ministry of Natural Resources. According to this ministry, Canadian

⁹ This combined sense of duplicity and inaction on the part of Health Canada inspired me to construct a letter to federal research scientists at Health Canada as part of the Write2Know campaign (www.write2know.ca). This online letter-writing campaign was organized as a series of letters addressed to federal ministries, government scientists, and members of parliament to foreground the gag order on civil servants imposed by Canada’s by the government of the former prime minister, Stephen Harper.

mines produced over 65,000 tons of lead in 2011 (the last year these statistics were compiled), placing it in the top ten of the world's lead producers. The website also declares that the global mining output of lead that year was over 4.6 million tons, making it a record breaking year for international production. While it is not surprising that the Ministry of Natural Resources wants to promote Canada's position as lead producer, it is somewhat unnerving that its message about lead is not that different from Health Canada's. Both ministries declare that lead has assumed a global presence as the result of marketplace demands, as an unavoidable consequence of doing business as usual.

Whereas Health Canada continues to maintain 10 µg/dL as an acceptable blood lead level, the American Centers of Disease Control (CDC), the central agency that determines health policies in the United States, reacted to the new evidence of the effects of low lead doses by cutting its acceptable level in half in 2012, going from 10 µg/dL to 5 µg/dL. In their thorough history of lead poisoning in the United States, *Lead Wars: The Politics of Science and the Fate of America Children* (2013), Gerald Markowitz and David Rosner point out how this shift has significantly altered national health statistics, as approximately 200,000 individuals suddenly became designated as lead poisoned. They explain that as a result of this newly recommended threshold, "the number of children considered at risk of lead poisoning dramatically rose, from an estimated 250,000 children with levels above 10 µg/dL to as many as 450,000 with levels exceeding 5 µg/dL, placing renewed pressure on government, industry, and public health officials to take action" (18).¹⁰ While the CDC's decision to cut the blood lead level of acceptability in half is to be applauded as a step in the right direction, it still constitutes a form of compromise that does not address the dangers of doses of lead below this new threshold. No doubt the reduction will reduce the overall threat of lead poisoning in the United States, but the notion that instituted thresholds of toxicity can be used to prevent (and manage) lead poisoning remains intact. According to the fixed mindset of thresholds, the health of certain people, communities,

¹⁰ The disjuncture between blood lead thresholds in Canada and the United States also produces the absurd situation in which individuals would be considered lead poisoned just by traveling across the border.

and ecologies is always subject to negotiations and to the will of capital.

Mapping a Clear Contradiction

Lead is a normal constituent of the of the earth's crust and it is harmless if undisturbed but highly toxic once mined and transformed for human use. The adverse health effects of this element are well known today as it is one of the most widely studies toxic substances. [...] Lead toxicity has been recognized since Antiquity, even though exposure to the metal has varied significantly throughout history. At first, this exposure was only a problem for the workers that directly mined or worked the metal; later, mainly during the Roman Empire, lead was used extensively in everyday life and this led to more widespread exposure.

—José Casas and José Sordo

Currently, the production of batteries, used predominantly in the automotive industry, comprises the single largest global market for refined lead, since the phase-out of lead in household paints, gasoline additives and solder in food cans. Lead is also used extensively in a variety of other applications, including the manufacture of cable sheathing, circuit boards, lining for chemical baths and storage vessels, chemical transmission pipes, electrical components, polyvinyl chloride (as a chemical stabilizer), and radiation shielding.

—Health Canada

The idea that lead is the base for an array of essential industrial and household products and is also a well-known neurotoxin toxin that has long been seen as a social threat (dating back to Ancient Rome and its use of lead aqueducts), is a clear contradiction. To maintain this long-standing contradiction requires a highly managed rhetoric that typically produces convoluted policy statements, such as Health Canada's assertion that its implemented blood-lead threshold is considered both out of sync with current toxicology and also the most reasonable course of action. This convoluted rhetoric is used in turn to help impose harmful government policies and practices. A primary goal of this chapter is to show how the material-semiotics of lead, its combined physical and psychic presence, resists closure and thereby frustrates our conventional

narratives and claims of control, abatement, progress, health, and justice. More specifically, this chapter examines the implementation of harmful government policies and practices on the part of the Ontario Ministry of the Environment (OMOE) and the Toronto Department of Public Health (TDPH) in the small Toronto neighbourhood of Niagara. The focus of this second story of the politics of lead in Toronto is on an insidious form of public care, one in which the very institutions that are responsible for the health of the population and the environment as a whole are shown to have perpetuated a convoluted rhetorical stance: to represent the *harmful* dissemination of lead dust in Niagara as a *risk*, which the local residents of Niagara could live with if they took proper precautions. This stance was essentially one of inaction – “staying the course” – which in turn allowed Toronto Refiners and Smelters, a large lead refinery in the neighbourhood, to stay in business.

In this chapter I use archival documents to further map the politics of lead in Toronto, giving specific details of how the dissemination of lead particulate in this downtown neighbourhood constituted an imposed order of things in which the health of local residents was tacitly placed below the joint goals of free enterprise and maintaining the status quo. I also draw from a selection of critical texts – primarily Michel Foucault and Jacques Rancière – to address the socialization that is achieved with the implementation of silence and consensus. More specifically, my goal is to delineate some of the silences and implemented public health practices that were deployed in Niagara to maintain the status quo and help keep Toronto Refiners and Smelters in business. My mapping involves identifying how these silences and tacit practices were put into effect by weighing them down with specific events and documents, and by referencing actual people who lived adjacent or in close proximity to the lead refinery. Like the previous comic book chapter, the following assemblage covers a 45-year period (from the early 1970s to the present) and challenges the broad consensus that lead poisoning is something that belongs to the past. As both of these chapters tell very similar stories of lead pollution in Toronto, they can’t help but repeat some of same scenarios and summations. But each of the two separate neighbourhoods, Niagara and South Riverdale, also provide accounts of distinctly personal tragedies that deserve our attention and that tell us additional things about the agential politics of lead, pollution, and capital.

I want my argument to be especially clear: The bureaucratic stance taken by OMOE and TDPH did not simply *allow* for an unjust situation in Niagara to happen. It also did not simply put people *at risk*. Instead, it constituted a *harmful act of public care* or what Rob Nixon identifies as “slow violence” (2011), an implicit and instituted violence that is woven into the everyday lives of people, especially those who have been marked as working class, poor, and marginal. Together OMOE and TDPH tried to occupy and promote a working contradiction, one that they in turn asked the residents of Niagara to absorb, embody, digest. This working contradiction will sound familiar, as it the same basic public policy that I argue was essential to the dissemination of lead particulate in South Riverdale: “Yes, our scientific findings more or less confirm that you and your family are being exposed to dangerous amounts of lead, which is most likely linked to the emissions coming from the lead smelter in your neighbourhood, but you should be okay if you follow a series of simple health precautions.” In both South Riverdale and Niagara this public policy functioned as a powerful organizing principle that for most part was tacitly expressed and implemented. Like the ambient lead dust, this working contraction seemed to float in the air and be absorbed into the thoughts and actions of the residents.

My primary fascination with the politics of lead is the combined ubiquity and anonymity afforded lead particulate: how it is everywhere but is not generally viewed as a pressing environmental threat. A central theme fueling my inquiry is the awkward idea that Toronto experienced a lead contamination problem in the 1970s and 1980s (in two particular downtown neighbourhoods) but at certain point this problem was sufficiently resolved so that lead faded into the background and was not longer seen as a matter of public concern. How did this particulate go from being a problem that necessitated annual blood lead tests (not only in these neighbourhoods but throughout the city) and a series of expensive abatement programs, to becoming something that doesn’t seem to generate much interest or warrant particular attention in the city as a whole and in these two neighbourhoods? For example, in searching through the various pages that comprise the website for the South Riverdale Community Health Centre (which once served in as an epicentre for lead community awareness and activism), I could only find one reference to lead poisoning, as part of a timeline history of the centre:

- 1982 — SRCHC and the City of Toronto carry out Canada's largest screening for lead levels in blood, testing 2,300 schoolchildren and adults.

(<http://www.srchc.ca/brief-history-1976-2013>)

This single reference underscores how lead particulate (and the toxicity it represents) appears to be contained to this period in the city's history. Similarly, there is no mention of lead poisoning in a 2014 *Toronto Star* article, entitled "A tale of income inequality in five Toronto neighbourhoods," which details how radically both South Riverdale and Niagara have changed. The article reports that in both these neighbourhoods average incomes and home values have surged, transforming them from traditional havens for working-class families to two of the most gentrified areas in the city (Rider).

How do we explain the collective sense of amnesia that places lead so firmly in the past? Yes, the two lead refineries that were seen as the main contributors to the problem – Canada Metal and Toronto Refiners and Smelters Limited – were eventually shut down. Yes, the abatement programs removed thousands of tons of contaminated soil. And yes, as shown in the Health Canada report cited above, blood lead levels in Canada and specifically in Toronto have fallen. But the idea that Toronto has survived its encounter with lead does not coincide with the chemical's ability to linger. It is important to acknowledge this fundamental characteristic of lead: It belongs to a cosmic timescale that is thoroughly incompatible with human desires and notions of abatement. Its atomic composition is fixed so it doesn't simply become absorbed by bio-remediating plants or microbes and disappear. Once lead has been brought to the surface and refined, it will remain part of the biosphere indefinitely. It is also wrong to assume that Toronto was able to rid itself of all its lead-contaminated soil. Vast areas of Toronto, especially in the Don Valley and the Portlands, are contaminated with lead, which the city has responded to by allowing brownfields to develop as the best strategic use of this land. We also know that the city's abatement programs were limited to certain parts of South Riverdale and Niagara and that some yards were abated more than once because they quickly became re-contaminated. The programs were also criticized for focusing attention on homes immediately surrounding Canada Metal and Toronto Refiners and Smelters, while other prime sources of lead particulate, such as the city's incinerators, did not receive the same sort of scrutiny. All these factors contribute to

the nagging idea that if areas were inundated with lead particulate from the early 1970s to the late 1990s (the timeline that is consistently used to represent the city's encounter with lead), then it stands to reason that much of that particulate remains in the city, has penetrated watersheds, and is still disturbed and blown about with the subsequent waves of demolition, construction, and home renovations that are part of Toronto's lucrative real estate market and its seemingly endless gentrification and condo boom.

On the Politics of Silence

Silence itself—the things one declines to say, or is forbidden to name, the discretion that is required between different speakers—is less the absolute limit of discourse, the other side from which it is separated by a strict boundary, than an element that functions alongside the things said, with them and in relation to them within over-all strategies.

—Michel Foucault

In *The History of Sexuality: Volume I: An Introduction* (1978) Michel Foucault speaks about the role silence plays in the inscription of sexuality and the establishment of normative behaviour. "There is no binary," he states, "between what one says and what one does not say; we must try to determine the different ways of not saying such things, how those who can and those who cannot speak of them are distributed, which type of discourse is authorized... There is not one but many silences, and they are an integral part of the strategies that underlie and permeate discourses" (27). While Foucault is specifically focused on sexuality and the discourses it incites, he is also speaking about the cultural significance of silence in general, how it plays a foundational role in the way meaning is constructed. Foucault argues that the institutional attention given to figures who were seen as embodying different forms of aberrant sexuality—such as the hysterical woman, the child, the homosexual—afforded the heterosexual couple a certain degree of silent authority so that their matrimonial bed was implicitly configured as the seat of normative behaviour "The legitimate couple," explains Foucault, "with its regular sexuality, had a right to more discretion. It tended to function as a norm, one that was stricter, perhaps, but quieter" (38). Similarly, Jacques Derrida speaks of the play of difference inherent to language and how meaning is always a matter of saying one thing by not saying another.

“Silence,” he declares, “plays the irreducible role of that which bears and haunts language, outside and *against* which alone language can emerge” (1978: 54; emphasis in original). Derrida’s deconstructive method is based on the act of closely reading various foundational texts in the Western canons of philosophy and literature, so as to make them speak their repressed content, the various abrupt and subtle cuts, omissions, assumptions, and biases that are essential to the foundations of power.

In their 1999 publication *Sorting Things Out: Classification and Its Consequences*, Geoffrey Bowker and Susan Leigh Star similarly stress the idea that acts of classification always produce and mark off a negative category by default. “Each standard and each category,” they explain, “valorizes some point of view and silences another” (5). They also stress that while some classifications will have very limited repercussions, causing minor inconveniences, others can help bolster forms of epistemic violence. By focusing on specific sites and specific forms of classification, their book serves as another model for producing countermemory, as it shows that by methodically charting the categories and standards used to shape contemporary life, you can get the archive and the ethnographic field to speak its secrets. Bowker and Leigh Star provide this directive: “First, we seek to understand the role of invisibility in the work that classification does in ordering human interaction. We want to understand how these categories are made and kept invisible, and in some cases, we want to challenge the silences surrounding them. In this sense, our job here is to find tools for seeing the invisible...” (5). Borrowing this directive, I argue that the evasive bureaucratic rhetoric expressed on the part of OMOE and TDPH worked in conjunction with factory emission thresholds (set by OMOE) and acceptable blood-lead levels (set by Health Canada) as a way of using governmental authority and classifications (and their silences) to demarcate the social and impose a certain ordering of things, one in which lead particulate was configured as both a urban menace and also something that local residents in Niagara could learn to live with as an ambient companion.

The Lead Menace

This second assembled story of lead contamination in Toronto begins with a yellowed newspaper clipping and a grainy image of The Toronto Refiners and Smelters.



Figure 7: The Lead Menace (Source: *The Toronto Star*)

Written by David Israelson, the article is from the Oct. 6, 1986 edition of *The Toronto Star*. The headline reads: “The lead menace.” The following isolated lines emphasize how lead poisoning at the time constituted a clear public threat:

Children under 6 are particularly vulnerable doctors say. They absorb it when they play outside, when they eat, and even when breathe in polluted South Riverdale and Niagara.

For residents of Toronto’s South Riverdale and Niagara neighborhoods, the phrase “fill you full of lead” is not merely some worn-out line from a TV cop show—its reality. (A22)

The clipping also clearly identifies the two main (suspected) sources of the lead dust in Toronto: Canada Metal, in the top right corner, and Toronto Refiners and Smelters. There aren’t many surviving photographs of Toronto Refiners and Smelters still in circulation. This grainy image is possibly the best because it gives a sense of the plant’s large size and how it consisted of a collection of separate buildings and a network of furnaces and black piping. The photo also provides a jolt, as the plant’s erratic and scattered architecture is very much removed from the clean lines of the condos that currently dominate the skyline of Toronto’s Harbourfront, the neighbourhood immediately south of Niagara, and the numerous condos that have sprung up in Niagara itself.

Niagara Street and its immediate surroundings comprise the small neighbourhood of

Niagara, which occupies a densely packed area squeezed in between the busy shops and restaurants of Queen Street West and a key railroad line and a set of city expressways (the Gardiner and the Lakeshore), which all run along the southern end of Toronto along the lakefront. The neighbourhood has radically transformed in the last 30 years, but many of neighbourhood's original buildings still stand, including one of city's oldest slaughterhouses, Toronto Abattoirs. In the 1980s, Niagara was just beginning to be gentrified, and was primarily a mixture of busy factories and small, working-class houses.

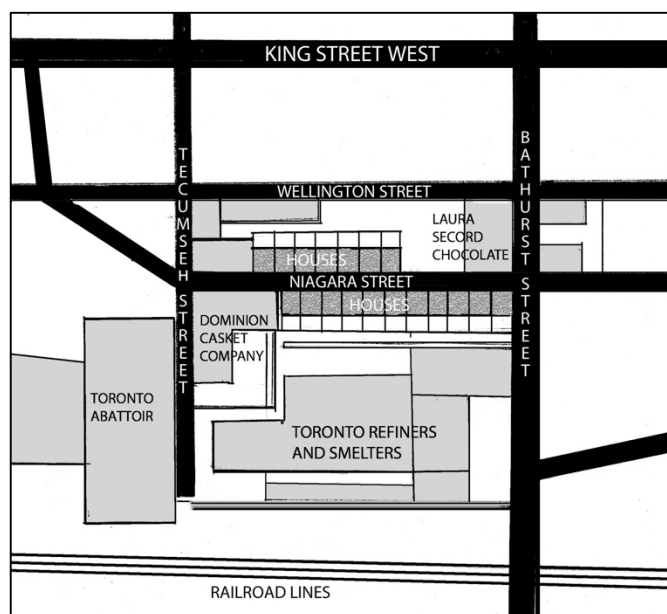


Figure 8: The Niagara Street neighbourhood in the 1980s (Author's rendering based on similar maps)

This bird's eye view (or god trick) also helps jumpstart the story, by giving it a specific locale or geography, with specific streets and key buildings. As we can see in this map, some of the residents of Niagara Street lived adjacent to the giant lead plant. Like children in South Riverdale, children living in Niagara also routinely showed high blood-lead levels throughout the 1970s, 1980s, and 1990s. Air and soil quality tests similarly reported dangerously high concentrations of lead particulate. And Toronto Refiners and Smelters consistently exceeded allowable emission levels from its network of furnaces, smoke stacks, and vents. But the company stayed in business until November 1989, after the Toronto City Council agreed to purchase the property. Soon after the sale was completed, the city started a prolonged

abatement program, which, in addition to refinery, involved over 1000 residential and commercial properties (McDonald 2003), at a cost of \$11.9 million (Wilson 1988).

Gardening on the Threshold: Dear Mr. Lachocki

And the LORD God commanded the man, saying, Of every tree of the garden thou mayest eat freely.

But of the tree of the tree of knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die.

—Genesis 2:16, 17

Mr. McGregor was on his hands and knees planting out young cabbages, but he jumped up and ran after Peter, waving a rake and calling out, “Stop thief.”

Peter was most dreadfully frightened; he rushed all over the garden, for he had forgotten the way back to the gate.

—Beatrix Potter

Ted Swan: We have to convince the little housewife out there that the tomato that ate the family pet is not dangerous!

—*Attack of the Killer Tomatoes*

The body is the inscribed surface of events...

—Michel Foucault

I should explain that I found many of the documents I am using to assemble this chapter in a gray and battered file cabinet at the Sanderson Library, a tiny branch of the Toronto Public Library system located north of the Niagara Street neighbourhood. What sparked my interest was a series of exceedingly bureaucratic letters from OMOE dated from the early 1970s and addressed to a married couple, Mr. and Mrs. Lachocki, who at the time were living on Niagara Street. These documents constitute a form of marginalia, a type of documentation that is generally seen as having questionable importance. At some point the letters were deemed significant enough to make their way into a file cabinet in a branch of the Toronto Public Library but not significant enough to be treated as important archival objects, worthy of being scanned for posterity as digital files or organized into separate thematic or chronological files, catalogued with a file

reference number. Both the letters and the gray file cabinet that I found them in belong to an older and perhaps obsolescent technology, as made evident by the layout of the library and the primary focus of its patrons. Whereas the bank of desktop computers commanded the main space of the library and had a constant line of patrons waiting patiently for their turn, the file cabinet was placed against a wall in a narrow and dark corridor leading to the public toilets. This placement made opening and searching through the cabinet difficult. I had to grab the folders that seemed relevant to Niagara's history of lead and get out of the way, confirming my impression that the cabinet and its contents were rarely utilized. I mention the marginal status attributed to these documents to make two related points: (1) It is further evidence of how lead poisoning is no longer seen as a matter of public concern or debate for the general population of Toronto; and (2) the people who suffered from the dissemination of lead in Niagara and because of the harmful silences and practices of OMOE and TDPH are also marked as marginal and not worthy of sustained public concern or intervention. The manner in which certain people are marked as insignificant often takes such forms as delegating their histories to minor libraries, damp basements, and file cabinets near the public toilets.

This tacit and consistent form of institutional violence is the focus of Foucault's short but dense essay, "Nietzsche, Genealogy, History," in which he speaks about the human body as an archival record. "Genealogy," he explains, "is gray, meticulous, and patiently documentary. It operates on a field of entangled and confused parchments, on documents that have been scratched over and recopied many times.... Genealogy, as an analysis of descent, is thus situated within the articulation of the body and history. Its task is to expose a body totally imprinted by history and the process of history's destruction of the body" (1977: 148). One of Foucault's main points is this idea that social inscription is enacted on the bodies of citizens but in a subtle fashion. In other words, the structures of social power and control are interwoven into the routines of everyday life. Power is secreted into the recurring patterns and sentiments of history and it is up to the researcher to seek out documents that indicate something of the epistemic limits of a given historical period, and to trace how some of these limits are incorporated into the experiences and routines of everyday life so that they leave their marks on the bodies of individuals.

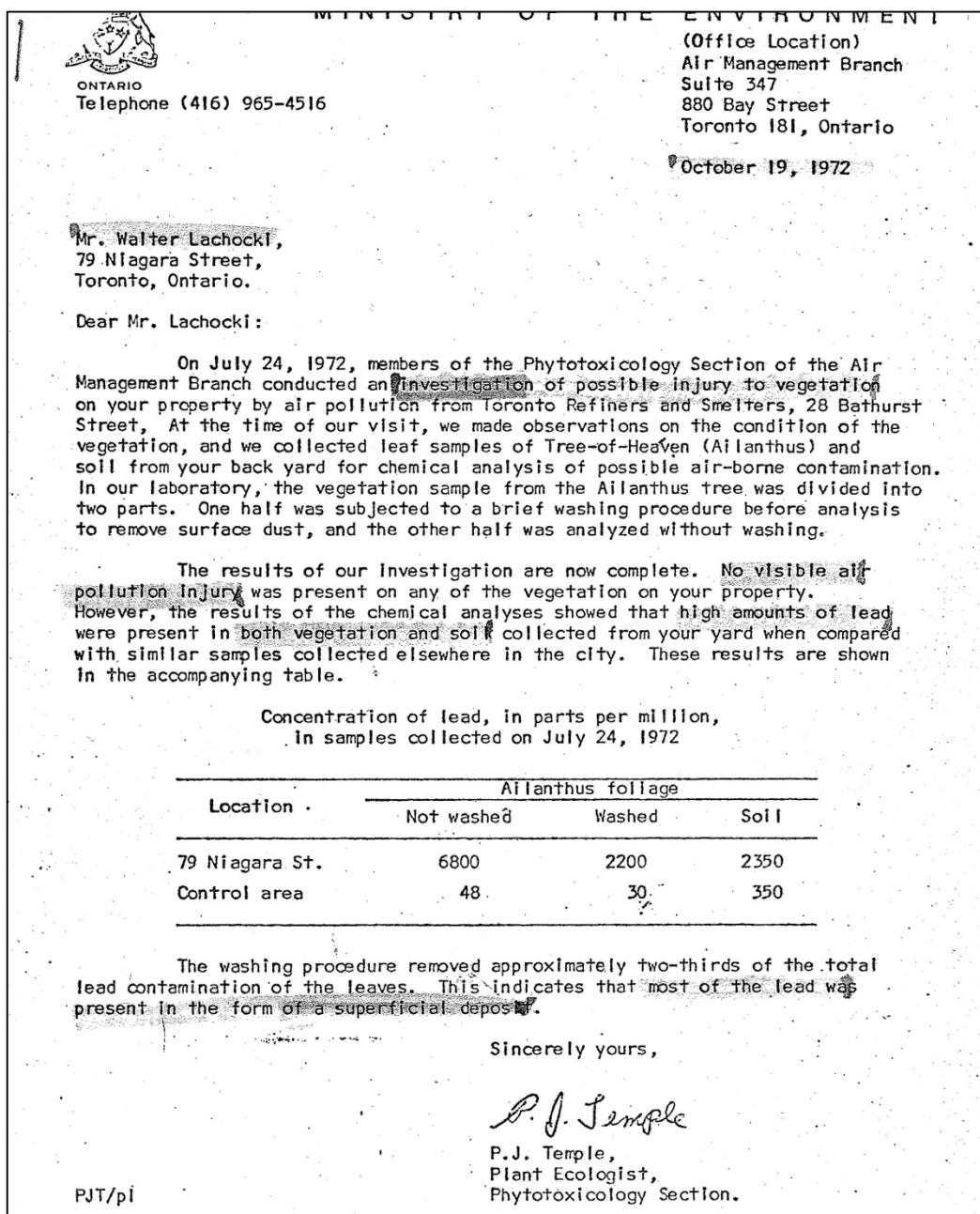


Figure 9: OMOE letter to Mr. Lachocki #1 (Source: Toronto Public Library).

By rehearsing some of Nietzsche's critique of sentiment, power, and Western Enlightenment, Foucault foregrounds the key role the body plays in the integrated processes of (1) subjection, the making of human subjects, and (2) socialization, the social integration of the subject. Written in 1971, this essay serves as a prequel to what Foucault later developed as

biopolitics, and I reference it here because it strikes me as incredibly relevant to the scarring inscription of power in Niagara. Throughout his career Foucault presented archives and libraries as important sites of countermemory, spaces where we can uncover documents and artifacts that contradict the convention that history is a monolithic and irrefutable record of progress. In this early essay he also speaks of this Nietzschean brand of genealogy as “curative science”: “History has a more important task than to be a handmaiden to philosophy, to recount the necessary birth of truth and values; it should become a differential knowledge of energies and failings, heights and degenerations, poisons and antidotes. Its task is to become a curative science” (156). Inspired by this call to arms, I too want to pursue history as a curative science, one that helps me differentiate the genealogical knowledge of poisons and antidotes, as well as care and harm, management and denial, abatement and contamination.

Of course, there are many books and documents in public archives and libraries that confirm and contribute to the entrenched mythos of progress and neoliberal citizenship, in which the people of cosmopolitan or global states freely elect governments, which, in turn, champion free market capitalism and work in a fair and transparent fashion with representatives of industry and technological innovation to help secure a better way of life for all. But these letters addressed to Mr. and Mrs. Lachocki betray what can be understood as a bureaucratic and harmful science – the very opposite of a curative one – that inflicted a subtle or slow violence that thoroughly discredits the familiar, tired civic platitudes of a responsible and caring society.

The first letter from the OMOE I want to isolate is dated October 19, 1972 and is addressed to Mr. Lachocki (Figure 9). Living at 79 Niagara Street, the Lachocki family were literally in the thick of things. Their back yard faced the expansive lot occupied by the Toronto Refiners and Smelters. The house was also located a few doors east of a large factory and warehouse building, occupied by the Dominion Casket Company. “Dear Mr. Lachocki....” Skimming the letter, I knew I had found what I was looking for. The letter establishes three primary actors/actants: Mr. Lachocki (representative of the neighbourhood’s residents), the scientific team and apparatus working on the part of the OMOE (representative of responsible governance), and Toronto Refiners and Smelters (representative of heavy industry and free-market/neoliberal capitalism). Along with these three figures, the letter also references three

additional nonhuman actants that are essential to the intended message that OMOE is engaged in the methodical and caring practice of risk management: a tree, a soil sample, and Mr. Lachocki's tomato patch.

The tree turns out to be no ordinary tree, but an ailanthus, the Tree of Heaven. Just the mention of this tree sets the cogs of biblical allegory in motion and suggests that there is more to this story, more to this letter, more than just what appears on the surface of things. The bureaucratic tone of the letter, which is also meant to convey a sense of civic responsibility and thoroughness, actually backfires so that a science fiction tale of mutation begins to germinate at the unruly level of connotation. The mere mention of the ailanthus, in other words, invokes the Garden of Eden and a tale of forbidden fruit growing on a Tree of Knowledge. Such a storied synopsis of this letter may seem self-indulgent or superfluous but I am trying to underscore its supplementary and disruptive content, the meaning that seems to go astray. The letter's ambiguity is what excited me about it in the first place: how parts of it seem to contradict the intended message. The letter is meant to alleviate any anxiety that Mr. Lachocki may have concerning the possible toxicity of his tomato plants and the threat they pose to his health and the health of his family (other documents that I came across, including a lists of blood lead test results, indicate that he lived at 79 Niagara with his wife and at least two children). But this intended message – that he should not be too concerned and that after he has thoroughly washed his tomato harvest the fruit should be okay for consumption – gets lost. In an exceedingly obtuse and roundabout manner, the letter actually informs Mr. Lachocki that his tomato plants are highly toxic, as they far surpass the recognized threshold of acceptable lead.

To relay this secondary, mixed, and unintended message – your tomatoes are highly toxic and will remain toxic after they have been thoroughly washed – without directing stating it, P. J. Temple, toxicologist, details the thoroughness of the Ministry's testing, the careful process of collecting, measuring for contamination, comparing with a control sample, washing, and re-measuring for contamination. A certain amount of care was taken to assure the scientific validity of the testing. Protocols were strictly adhered to in an effort to eliminate any assumptions or doubts. To further reinforce the notion of a caring and careful governmental science in action, the letter also includes a table, which details the testing of the ailanthus tree in Mr. Lachocki's

back yard by placing the numbers from the two tests below one another. I have chosen to reproduce a slightly clearer version of this table as a way of shoring up its informative value:

Ailanthus foliage (concentration of lead in parts per million)			
Location	Not washed	Washed	Soil
79 Niagara St	6800	2200	2350
Control area	48	30	350

Figure 10: OMOE toxicity chart

It is extremely debatable what message this table relays, as the tree appears to act as an especially effective bioremediator, sucking up lead particulate and storing it both on the surface of its leaves and in its cells. The poignant question about the safety of the tomatoes is still left up to interpretation, but this table does suggest that Mr. Lachocki's tomato plants would also act like the ailanthus tree and absorb dangerous amounts of lead. Temple simply ends the letter by stating, "The washing procedure removed approximately two-thirds of the total lead contamination of the leaves. This indicates that most of the lead was present in the form of a superficial deposit." This final word, along with his signature, is supposed to remove any doubt, but the letter is very much akin to the leaves of the ailanthus tree: It too is riddled with holes and, as such, transmits more meaning – in the form of doubt and anxiety – than Temple intended.

The letter's frustrating ambiguity may have played a key factor in spurring Mr. Lachocki on to become a community activist. There is a second letter from OMOE, written almost a year later, on July 27, 1973, again addressed to Mr. Lachocki, or rather to his house, which now has become the headquarters of a community group, the South of King Residents' Association (Figure 11). The job of corresponding with Mr. Lachocki has been passed on to W. J. Hogg, Eng., Regional Engineer, Air Management Branch. This second missive is as ambiguous as the first. It too is written in an officious style that refuses to take a definite position with regards to the toxicity of the local vegetation. In addition to the date, address and signature, the body of this second letter consists of five sentences. And what could have been written as one paragraph is spread out as five. I draw attention to this excessive spacing because, like the first letter, it

provides us with graphic illustration of the strategic elusiveness on the part of OMOE. Here, in other words, content and form mirror one another so the reader is left with a series of gaps, accentuating both the elusiveness of the letter's content and the pores of the foliage being tested.

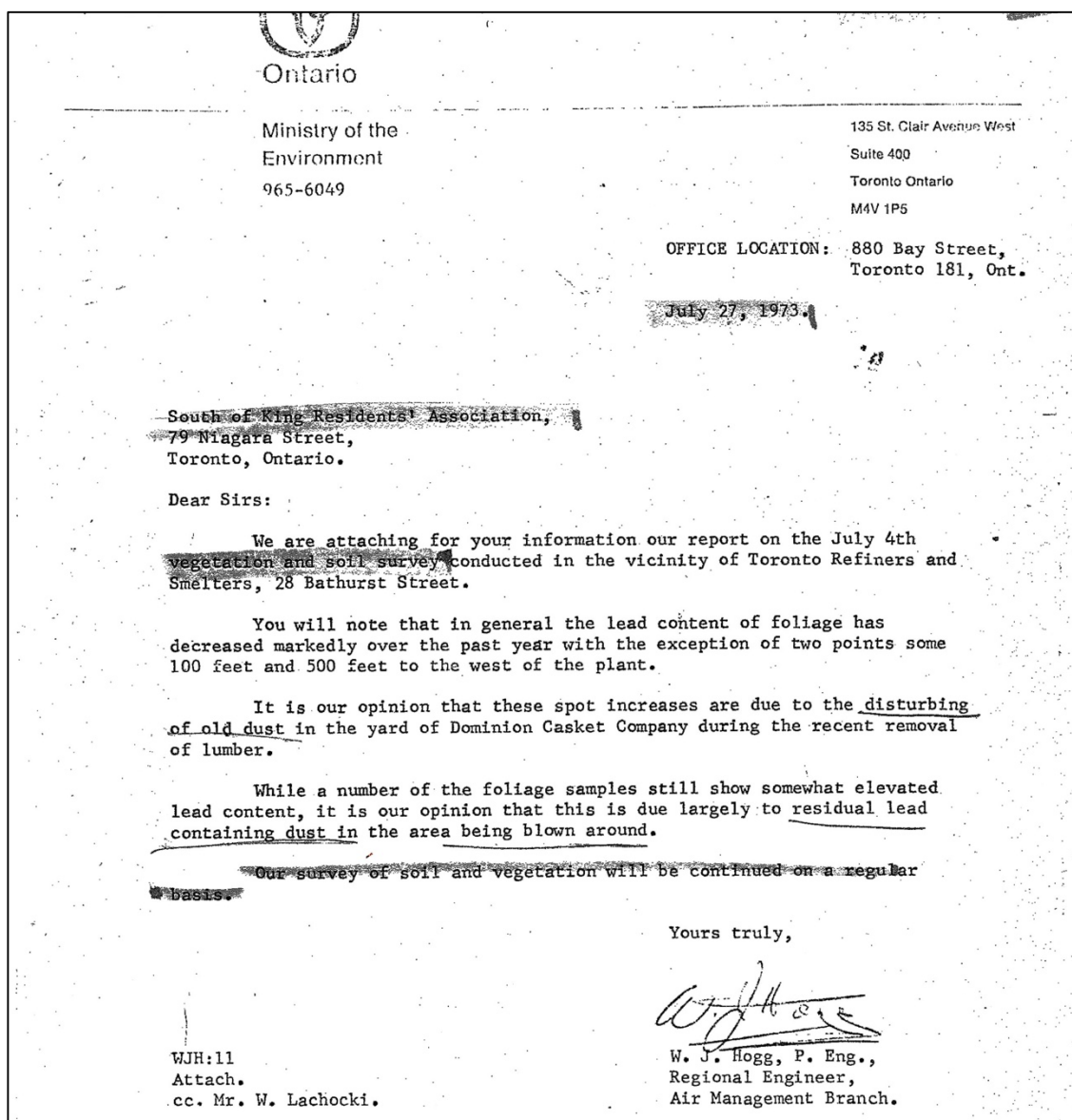


Figure 11: Second OMOE letter – from Air Management (Source: Toronto Public Library).

And again, Mr. Lachocki may have been confused and frustrated by a specific line-message in the letter that was intended to stress thoroughness and ease doubt: “You will note

that in general the lead content of foliage has decreased markedly over the past year with the exception of two points some 100 feet and 500 feet to the west of the plant.” This site is approximately where the Lachockis lived, 100 feet to 500 feet west of the plant. Mr. Lachocki is still left to wonder about the safety of his family and the neighbourhood. Reading through the gaps in this vague letter from OMOE’s Air Management Branch, he is not only told that area directly around his home has seen an increase in lead dust but he is given OMOE’s seemingly unsubstantiated and evasive “opinion” that Toronto Refiners and Smelters was not responsible for this increase but rather that the elevated levels were caused by the natural forces of the wind and by the market forces of the Dominion Casket Company.

This assembled cache of documents also includes two letters address to Mrs. W. Lachocki from 1973, suggesting that she took over the task of corresponding with OMOE when her husband became too exasperated with the Ministry’s elusiveness (Figure 12). These letters are about the laboratory results from tests done on dust samples taken from inside and outside the Lachocki home. They also convey the same mixed messages about lead contamination, but the letter dated October 12, 1973 does make an important declaration: “The lead content of these samples is higher than that found in normal residential areas. [...] It is our opinion, as discussed with you, that the present standard of operations at Toronto Refiners and Smelters does not contribute significantly to these levels.” We have become used to the sort of hubris that would allow a branch of government to claim management of the air, but our familiarity with this arrogance doesn’t make this last claim any less outrageous. How can the Ministry admit that it has consistently found high concentrations of lead in the neighbourhood, and simultaneously assert that the local lead refinery has not contributed to these levels? While we may be used to such governmental evasiveness and doublespeak, this familiarity does not make these letters sound any less hollow. More importantly, our familiarity does not make such evasiveness less harmful to people like the Lachockis and their neighbours, people who were made vulnerable and were looking to OMOE for advice and responsible action. Separately, these letters could be easily dismissed as inconsequential missives that simply stress protocol over instructive content with concrete answers and guidance. But read together, they reveal a story of a harmful instituted form of public care—a bureaucratic science—that was implemented or enacted on

people living in Niagara.

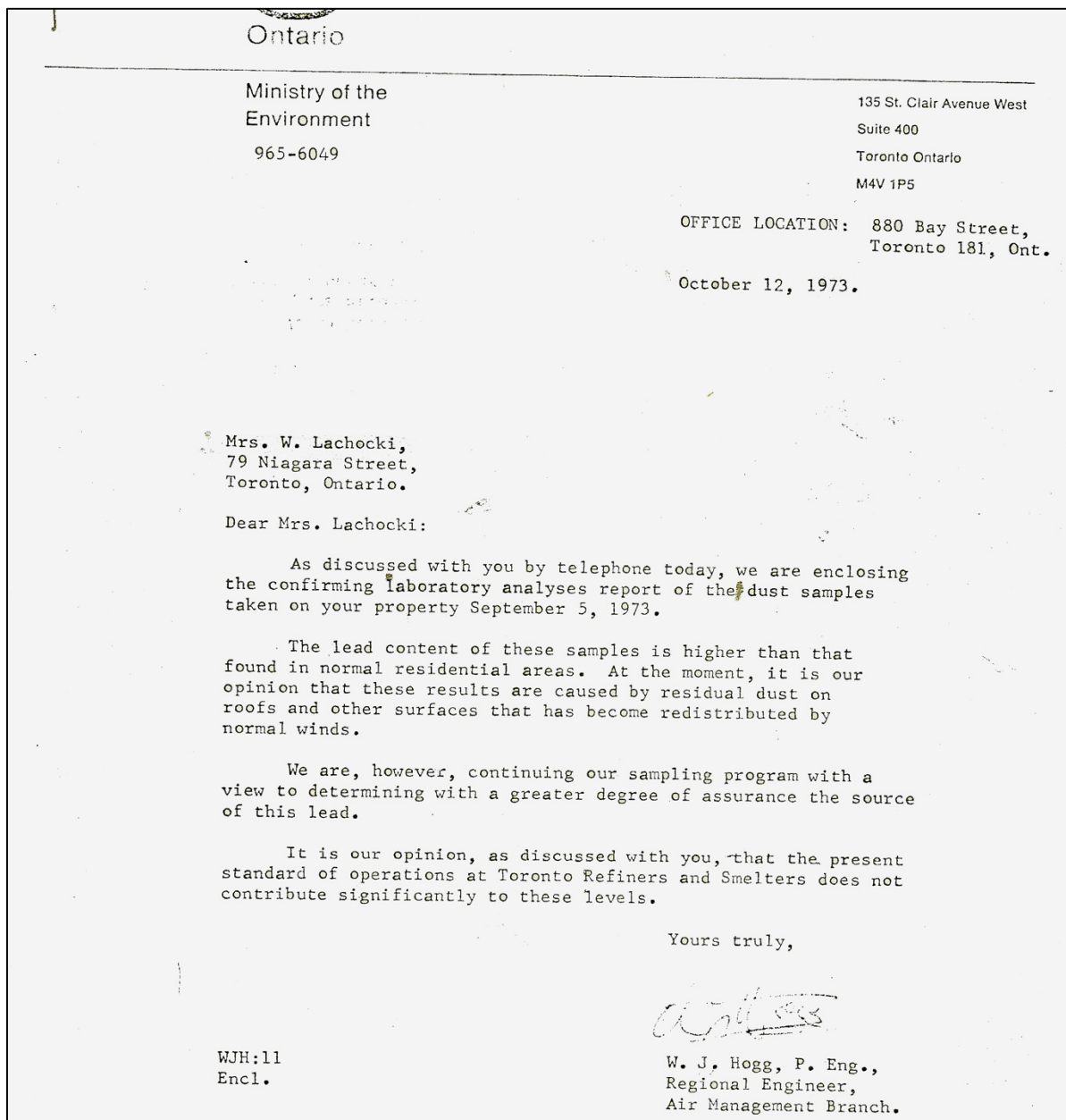


Figure 12: Dear Mrs. Lachocki (Source: Toronto Public Library).

Choking on the Consensus Part 1: On the Bourgeois Public Sphere and the Politics of Dissensus

Residents of Toronto's Niagara neighbourhood verbally attacked a smelting company last night for what they say is a refusal to stop contaminating their backyards with lead. About 70 residents took turns firing strong words at the City of Toronto, the provincial

environment ministry, and Toronto Refiners and Smelters, which operates the plant at Bathurst and Front Sts. "If the smelter can't operate cleanly then it is time the smelters goes," Elizabeth Quance said to loud applause in the Niagara Street Public School auditorium.

—*The Toronto Star*, Friday, April 3, 1987

The above newspaper clipping presents an example of environmental justice in action: people in a highly polluted community speaking out against inaction on the part of the different levels of government. The local residents call for the closure of an offending local lead plant and their anger is met with loud applause from the small but crowded public school auditorium. In his sociology of the formation of the bourgeois or modern public sphere, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, Jürgen Habermas provides a "basic blueprint" that comes very close to the above scene of public outcry:

The bourgeois public sphere may be conceived above all as the sphere of private people come together as a public; they soon claimed the public sphere regulated from above against the public authorities themselves, to engage them in a debate over the general rules governing relations in the basically privatized but publicly relevant sphere of commodity exchange and social labor. The medium of this political confrontation was peculiar and without historical precedent: people's public use of their reason. (1991: 27)

For Habermas, the contemporary public sphere is a product of the eighteenth and nineteenth centuries, brought about with the emergence of the European bourgeoisie or middle class and their ability to use reason. He provides a detailed account of how the public sphere was given expression in the European coffee houses and arts salons, the daily newspaper, and in a city's shopping districts and public parks, places frequented by the bourgeois family and the city's *intelligentsia*, or "men of letters." These sites were the central places in which bourgeois interests, values, and ethics were publicly performed: debated, challenged, confirmed, celebrated, commodified. Habermas emphasizes how communication, in the form of public debate, was and continues to be essential to the expansive or inclusive nature of the public sphere, how it pushed beyond people strictly identified as bourgeois to more or less include the demos or civic population as a whole (or at the very least it extended to those people who were

recognized as being part of the population as a whole):

However exclusive the public might be in a given instance, it could never close itself entirely and become consolidated as a clique; for it always understood and found itself immersed within a more inclusive public of all private people.... The issues discussed became 'general' not merely in their significance, but also in their accessibility: everyone had to *be able* to participate. Wherever the public established itself institutionally as a stable group of discussants, it did not equate itself with *the* public but at the most claimed to act as its mouthpiece, in its name, perhaps even as its educator – the new form of bourgeois representation. (37; italics in original)

Much of Habermas' schema of the bourgeois public sphere is consistent with the conventional understanding of the present day public sphere and how this publicness helps to both secure and exemplify democratic freedom and equality. In other words, the bourgeois public sphere is still very much the public face of democracy in action. The public mobility and public performances of the bourgeois or middle class are still very much held up as transcultural goals and aspirations that people should strive for, regardless of their specific circumstances.

While Habermas provides a much needed cultural history of the bourgeois public sphere, his schema of an ever inclusive public underscores how he strictly adheres to the Western philosophical narrative of the Enlightened Subject, a subject position that is won through rational debate and a reasoned synthesis or consensus of interests. In sharp contrast to Habermas' schema of the bourgeois public sphere helping to secure democracy through an ever inclusive public of consensus, Jacques Rancière argues for dissensus and offers a very different blueprint of democracy in action. For Rancière, consensus and politics are two opposing forces in "the distribution of the sensible," in determining the order of things. In a short polemic entitled "Ten Theses on Politics" (2010), Rancière carefully lays out his schema of politics, repeating and expanding his two main points: (1) Politics manifests as dissensus, not consensus; (2) Politics and the police are also two opposing forces: while the one force disrupts the status quo, intervening in the distribution of the sensible, the other force maintains it. "*Politics,*" declares Rancière, as his seventh thesis, "*stands in distinct opposition to the police. The police is a distribution of the sensible (partage du sensible) whose principle is the absent of void and of supplement*" (36; italics

in original). For Rancière, “the police” is a generalized term that not only refers to the various agents, institutions, and practices that help maintain the status quo, but also to the limits of what is possible. Whereas, the agents of the police promote and demand consensus from the population at large, politics requires defiance, the rejection of consensus, the cultural imperative that “we all need to get along,” to compromise, to sacrifice, to adhere to the status quo. “The essence of the police,” continues Rancière, “lies in partitioning the sensible. [...] The essence of politics consists in disturbing this arrangement by supplementing it with a part of those without a part, identified with the community of the whole. Political dispute is that which brings politics in being by separating it from the police...” (36-37). In the above sample of letters from OMOE to Mr. and Mrs. Lachocki, the ministry agents clearly inhabit the role of the police, whose primary job is to maintain order and perpetuate more of the same, even in the face of conflicting or damning evidence.

To further partition politics and the police from each other, as opposing forces and attributes, Rancière moves on to his eighth thesis: “*The essential work of politics is the configuration of its own space. It is to make the world of its subjects and its operations seen. The essence of politics is manifestation of dissensus as the presence of two worlds in one*” (34; italics in original). The radical function of dissensus is to derail the sensible, what is generally accepted as the “seeable” and “sayable.” Rancière is adamant to distinguish dissensus from the conventional model of democratic political engagement: a matter of two representative sides debating on issues in a parliamentary forum and deciding things by casting votes, by subscribing to a constitutional code of ethics, and coming to a consensus that is “reasonable,” “acceptable,” “in the best interest of the population as a whole.” Dissensus rejects this idea of yielding to the public will:

The essence of politics is *dissensus*. Dissensus is not a confrontation between interests or opinions. It is the demonstration (*manifestation*) of a gap in the sensible itself. Political demonstration makes visible that which had no reason to be seen: it places one world in another — for instance, the world where the factory is a public space in that where it is considered private, the world where the workers speak, and speak about the community, in that where their voices are mere cries expressing pain. This is the reason why politics

cannot be identified with the model of communicative action. (38)

This last sentence is a volley directed specifically at Habermas: Rancière wants to distinguish his schema of politics from the consensus-building and self-replicating socialization inherent to the bourgeois public sphere. While Habermas champions the important democratic work of the communicative act and the public sphere, Rancière presents consensus as an extremely effective form of policing that is inherently reductive. For Rancière, consensus is a binding and blinding will that eliminates difference and the potential for conflict by exercising the imperative that we must all get along with each other and abide by a common good, even when it seems to conflict with our own particular interests or wellbeing.

In sharp contrast to the solid ground that is afforded the bourgeois subject in the public sphere, Rancière speaks of the precariousness of politics. “A demonstration” he explains, “is political not because it occurs in a particular place and bears upon a particular object but rather because its form is that of a clash between two partitions of the sensible. A political subject is not [solely] a group of interests or of ideas, but the operator of a particular *dispositif* of subjectivation and litigation through which politics comes into existence. A political demonstration therefore is always of the moment and its subjects are always precarious. A political difference is always on the shore of its own disappearance” (39; italics in original). In Rancière’s topology, political subjects and the differences they embody and give expression to are always on verge of vanishing, of being obfuscated and absorbed by the consensus embodied and enacted by the police.

Dissensus in Rancière’s schema is an interruption of the sensible, of the usual partitioning or ordering of things, an intervention that separates the sensible from itself. It is the emergence of partial subject positions that are overlooked, worlds of being that conflict with the status quo, dissident voices that are not generally heard:

The essence of politics resides in modes of dissensual subjectivation that reveal a society in its difference to itself. The essence of consensus, by contrast, does not consist in peaceful discussion and reasonable agreement, as opposed to conflict or violence. Its essence lies in the annulment of dissensus as separation of the sensible from itself, in the nullification of surplus subjects, in the reduction of the people to the sum of the parts of

the social body.... Consensus consists, then, in the reduction of politics to the police. (42) While Habermas sees the reasoning of consensus as the very thing that secures democracy by being expansive and inclusive, Rancière sees consensus as reductive, something akin to a giant, amorphous creature that absorbs and annuls all the people and things that vary from its demand for more of the same.

In this debate between Habermas and Rancière, it is the latter who proves to be the most helpful in mapping the cosmopolitics of lead in Toronto. More specifically, Rancière's schema helps identify some of the reductive and harmful agents of consensus in Niagara's story of lead poisoning. But both Habermas and Rancière are limited by the anthropocentrism of the Western tradition, expressed in their joint insistence that it is only humans who perform in and shape the public sphere or the partitioning of the sensible. In addition to Toronto Refiners and Smelters, as an obvious offending actor-actant, my cast list of important actor-actants includes the angry and frustrated residents like the Lachockis, OMOE, TDPH, judges, company doctors, local politicians, property developers, and lawyers. However, this list needs to be expanded to include nonhuman actor-actants: lead particulate, soil, tomato plants, the deployed measuring instruments, an ailanthus tree, and wind.

As Jane Bennett points out, Rancière's version of politics falls short. "On Rancière's account, the public is constituted by bodies with uniquely human capabilities, talents, and skills, and political action is something that only they can do" (2010: 95). Like Aristotle, Rancière is adamant that humans distinguish themselves as the political animal, *homo politicus*. It is only humans who can appear on the public stage, demanding a part as those who don't have a part. "When asked in public," continues Bennett, "whether he thought that an animal or a plant or a drug or a (nonlinguistic) sound could disrupt the police order, Rancière said no: he did not want to extend the concept of the political that far; nonhumans do not qualify as participants in the demos; the disruption effect must be accompanied by the desire to engage in reasoned discourse" (106). Like Bennett, I think it is important to extend and complicate Rancière's schema of dissensus to include nonhuman actants. More specifically, I argue that in challenging the status quo's demand for more of the same it is key that we recognize the full extent of lead's political disruptiveness in the public sphere. My argument about the dissensus of lead is

necessarily messy: I am not trying to speak of the behalf of lead, or argue that we need to extend our sense of humanism to somehow include lead. I am calling on people to recognize lead as an agential force that informs/structures the public sphere. Recognizing lead as a public actor, in turn, helps to reinforce these two related facts: human and nonhuman lives are harmed by lead's poisonous properties; government practices that have direct detrimental effects on a certain percentage of the population are routinely carried out in the name of the public's best interests and economic health. My argument is necessarily messy because it also calls on us to recognize how the dissensus or unruliness of lead is thoroughly enmeshed in the consensus of free market capital and its perpetuation of more of the same.

Choking on Consensus Part 2: Lead Citizens

If you live in certain sections of Toronto you may be exposed to above-average levels of lead from traffic and local industry.

—Toronto Department of Public Health

To circle back to the story of Niagara and Toronto Refiners and Smelters, I want to reference a pamphlet that is part of my lead archive. The *GET THE LEAD OUT!* pamphlet was produced by the Toronto Department of Health (in conjunction with the South Riverdale Community Health Centre) in the 1980s and distributed to homes in both South Riverdale and Niagara. While it provides a number of helpful “tips” on how to avoid coming into contact with lead particulate in the home and in the local air and soil, it is another example of a government agency (this time working with a local health centre) perpetuating mixed messages that represent lead particulate as a dangerous presence but also as a minor annoyance, one with which people (those who live in neighbourhoods with above-average levels of lead) can live. While it can easily be argued that TDPH and the South Riverdale Community Health Centre (SRCHC) were simply acting in the *best interests* of these lead contaminated or “at-risk neighbourhoods” by providing practical information to prevent lead poisoning, the pamphlet betrays a harmful form of consensus: It presents lead vigilance as something certain people living in Toronto need to adopt as a sign of their civic and familial responsibility. This mixed message is harmful because it works to normalize lead particulate as something to which the responsible resident can/should adjust.

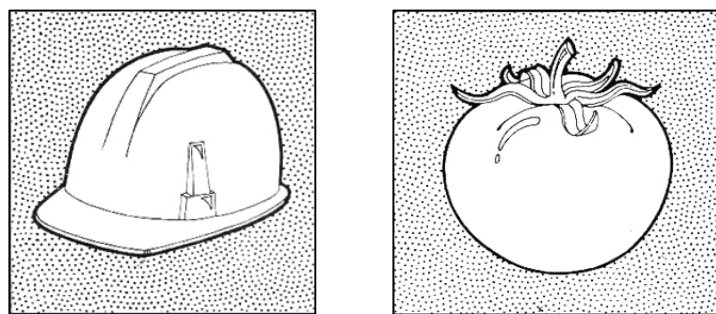


Figure 13: Construction helmet and tomato (Source: Toronto Department of Public Health)

While the pamphlet includes information about the “possible risks” of construction, renovation, and gardening (and features the image of a plump tomato), I am mainly interested in its primary image, which consists of three generic-clip art figures: a man in a construction hat, a woman with curly hair (possibly an afro), and a bald-headed man with glasses in a business suit (Figure 14). The three figures are joined at the shoulders so that they form a united body politic, a public consensus. What drew me to this image is the choice to represent the sky as an ambient mass of floating black dots. Given the context of the pamphlet, it is hard not to read this urban background as lead particulate floating in the air, sending the rather grim message that people living in South Riverdale and Niagara have very little choice in the matter and that lead pollution and its sources are very much here to stay.

The same sort of mixed message is conveyed by the brochure’s cover. In chunky capital letters, the words “GET THE LEAD OUT!” are printed on cover so they emerge from a black background. Again a mixed message is invoked, as the imperative to GET THE LEAD OUT is overwhelmed by ambient dust and the threat of lead poisoning it imposes. Faced with a sky of black dots, how is the responsible citizen supposed to prevent lead from getting into one’s home and flesh? Like the clown referenced in the previous chapter, this pamphlet is disturbing as it betrays a toxic consensus: While the pamphlet was produced and distributed as a way to prevent lead poisoning, it actually works to inscribe a public will or imperative that is simultaneously bold and nonchalant in the manner that it marks certain neighbours and certain citizens as lead contaminated. Furthermore, the pamphlet calls on the residents of South Riverdale and Niagara to accept the presence of lead particulate as an unavoidable fact of life. Such a public consensus

is toxic as it does little to challenge the status quo and the ongoing dissemination of lead particulate.

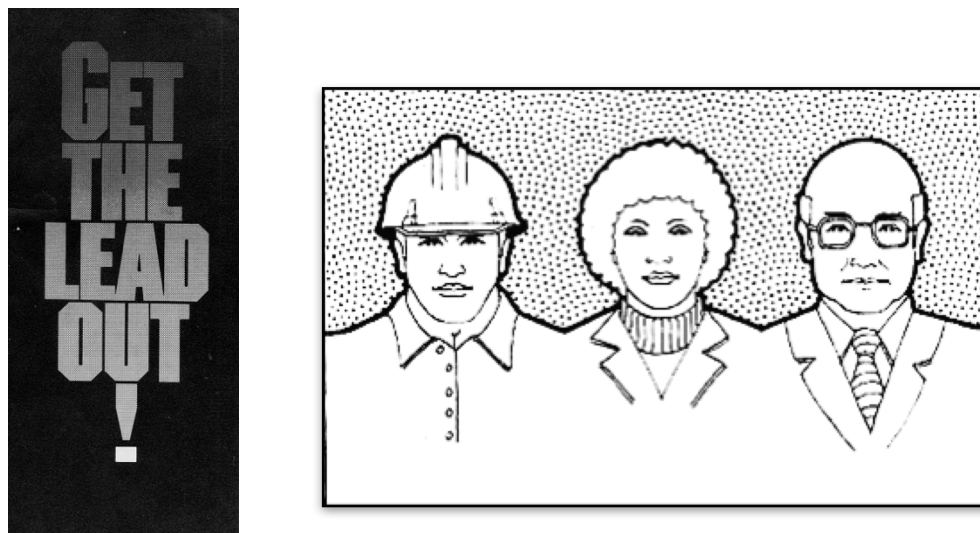


Figure 14: GET THE LEAD OUT! The pamphlet's cover and clip-art illustration (produced the City of Toronto Department of Health)

Choking on Consensus Part 3: On the Toxic Child and the Inscription of the Proper

I have already shown how OMOE maintained a frustrating and evasive correspondence with Mr. and Mrs. Lachocki. I now want to turn to the figure of the child, a figure who featured prominently in the previous chapter, and speak more about his/her fundamental role in the inscription of lead particulate as something the responsible citizen can live with if proper health measures are taken. As stated in the previous chapter, preschool children undergo rapid brain development, making them particularly vulnerable to the irreparable neurological damage that lead can cause. They are thus cast as the primary figure in the literature of lead poisoning. But in addition to providing advice of how best to protect young children from lead poisoning, the lead prevention literature is a very effective form of civic inscription that weaves the codes of normative behaviour (the regimes of the proper) directly into the routines of daily life so they appear to be expressions of common sense.

We can see this inscription of the proper at work in the aptly titled text, *The Citizen's Guide to Lead*. The book's declarative title and use of the figure of the vulnerable child to the inscribe

the codes of proper citizenship helped to spark my interest in the civic politics of lead in Toronto. Published in 1986, *The Citizen's Guide to Lead* was the only Canadian publication on the threat of lead poisoning available in bookstores at the time. The authors, Barbara Wallace and Kathy Cooper, were both actively involved in the environmental activism that sprang up in Niagara in the 1970s as a result of lead emissions and subsequent reports of contaminated soil and high blood levels in children. It is their cache of research documents, that they eventually deposited at the Sanderson branch of the Toronto Public Library, that I used to help construct this chapter and also to make an argument that very much departs from theirs. While I argue that lead is an inherently unruly chemical, which has long proven to be harmful when it is mined and pressed into the service of capital, Wallace and Cooper have a more "practical" goal in mind, one in keeping with risk management and the idea that both lead and lead poisoning are things that can be controlled. Their combined emphasis on the practical and the preventive, I contend, is thoroughly in keeping with neoliberal capitalism and its ruling principle that the various things that comprise the world, including toxicity in the form of harmful chemicals, can be managed so as to produce profits. Lead, according to this mindset, is simply dead or inanimate matter that must be "enlivened," incorporated into the flow of capital by being mined, refined, and transformed into commodities to be sold in a globalized free market. Similarly, lead pollution and the threat of lead poison are also seen as things that can be managed.

Wallace and Cooper designed their book as a source of practical information specific to Toronto but also applicable to city life and lead poisoning in general. In the opening pages they invoke a notion of environment citizenship, a form of self-discipline that city dwellers-citizens are required to take on to prevent lead poisoning from entering their homes. "*The Citizen's Guide to Lead*," they state, "provides you with the information you need to protect yourself and your family from lead pollution as well as to act as a responsible citizen in the political debate. The *Guide* documents some of the health effects and problems. It describes how and where you are being exposed to lead and shows you what you can do to reduce these exposures to a safe level" (Introduction; n/p). While I am not refuting the basic prevention guidelines the authors present, I am very critical of their claims and assumptions. Beyond the hubris involved in positing lead and lead poisoning as things that can be properly managed, I see this call for an environmental lead

citizenship as yet another example of a harmful consensus that presents the presence of ambient lead as something that people (in certain neighbourhoods) must comply with and accept. Their health and interests must be compromised for the status quo and the “greater good” of free-market capital. Rather than inciting dissensus and championing refusal, anger, frustration, or protest, the citizen is presented with consensus.¹¹

The socializing and normative silences in *The Citizen’s Guide to Lead* are relatively easy to spot, as Wallace and Cooper present their ideal citizen as someone who embodies heterosexuality, parenthood, and home ownership. Their lessons in lead prevention are punctuated with black and white photographs documenting familial scenes: a classroom of young children, a pediatrician’s office, a playground, and families standing outside their homes. Most of these images feature white children and depict scenes in which the health of the child and the nuclear family appears to extend to the community at large. The implicit goals of home ownership and real estate development are also ever present, as readers are encouraged to do such things as repaint old house façades (to prevent the lead in exterior paint from wearing down and chipping) and replace worn lawns (to cover up exposed soil). They are similarly encouraged to do indoor forms of home repair and renovations, all the while wearing the proper protective gear and following the proper safety guidelines. Male readers in particular are encouraged to send their wives and children out of the house before they start such jobs. A photograph in the book shows the man of the house (a white male wearing a dust mask and coveralls), waving off his young family before he gets down to the risky business of renovation. In this manner, homeownership, gentrification, patriarchy, and the heteronormative family are collectively invoked as undisputed markers of health, success, happiness, and civic responsibility.

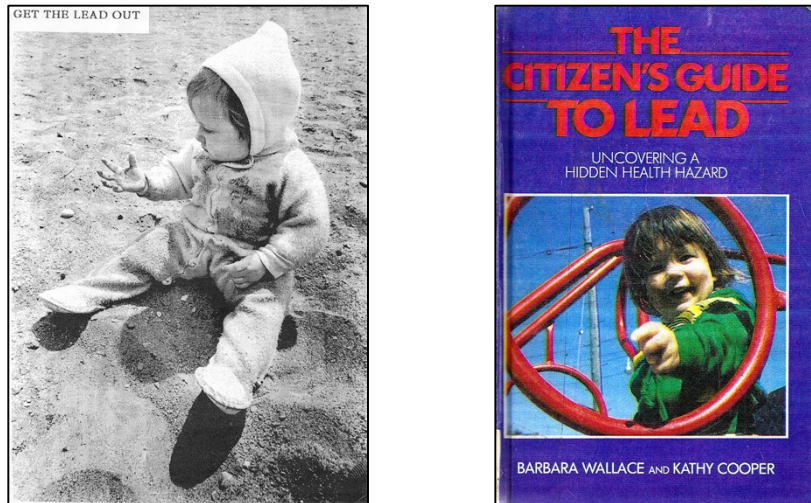
In reviewing the *Guide*, it is crucial to pursue the limits, assumptions, and prejudices built into this configuration of the ecologically responsible citizen so as to reveal the lives and values

¹¹ In an expression of conciliation and compromise, Wallace and Cooper also credit Canada Metal with good/proper citizenship, holding the South Riverdale lead refinery as a much better version of neoliberal capitalism than the Toronto Refineries and Smelter. They praise Canada Metal as “a model corporate citizen by responsibly bringing its emissions under control” (72).

that are being held up as worthy of protecting. In other words, while prevention and awareness serve important civic functions, we also need to be aware of the lives and aspirations that are being excluded—abated or erased—in the public inscription of proper lead citizenship. Being the most vulnerable to the effects of lead poisoning, the child serves as the most pressing concern in the literature of prevention. It also follows that the literature and policies of prevention function as a form of civic mapmaking, beginning with the child and extending out to the mother, the father, the home, the playground, the local daycare, the neighbourhood clinic, the grocery store, and the population at large. Erased from this communal map are individuals who are not part of the extended family paradigm. Certain individuals outside of the immediate family are represented in the literature of prevention, but their identity is directly linked to the child, such as teachers, pediatricians, and concerned neighbours. According to this ever expansive and inscriptive map, there would appear to be no residents who do not contribute to the wellbeing of the child and the imperative of familial citizenship, what Lee Edelman also identifies as a relentless consensus: “a consensus by which all politics confirms the absolute value of reproductive futurism” (2004: 3). In the Toronto call to GET THE LEAD OUT, the possible encounter with any sort of queer neighbour (and the threat that he or she may seem to present) is also readily abated.

In reviewing the social limits embodied in this particular configuration of the vulnerable child and the heteronormative family, it is also important to underscore the inscription of whiteness and how it too operates as a silent priority in Toronto’s lead narrative. Whiteness occupies the unique hegemonic position in which its force is secured by being constantly present but not directly acknowledged, not directly spoken of as a dominant organizing principle. In turn, this hegemony affords white citizens with a tremendous sense of authority, as their whiteness is reflected back to them everywhere. This inscription of whiteness is fairly evident in the photographs and posters used in Toronto’s lead prevention campaigns. Along with the white child who appears on the cover of *The Citizen’s Guide to Lead*, the image of a white boy or girl sitting on a Toronto beach was used as the cover page of a key report, entitled *Get the Lead Out*, which was prepared by the SRCHC (Figure 15). While I did find images of children of colour that were used in the Toronto campaigns (including the cover image for a lead prevention community

calendar that shows a multicultural classroom), these images were far outnumbered by images of white children. The predominance of white faces and bodies in the narrative of lead poisoning in Toronto cannot be passed off as a consequence of demographics, as census records show that large numbers of nonwhite families populated both South Riverdale and Niagara, the two primary sites for reported cases of lead poisoning in Toronto (Teelucksingh 2001: 239).



Figures 15: White children featured on the covers of two key texts in the Toronto lead archive: A Toronto Department of Public Health (1984) report entitled *GET THE LEAD OUT*, and Barbara Wallace and Kathy Cooper's *The Citizen's Guide to Lead*.

Pointing out the predominance of white faces in the Toronto lead narrative helps to make some sense of the relative silence or anonymity that lead poisoning currently enjoys. In the 1970s and 80s, when white children in the city were seen as the primary victims of lead poisoning, lead poisoning generated fear and public debate, receiving significant attention in the local and national news media. Lead was frequently spoken of as an acute matter of concern by political representatives and public health practitioners. But when recent statistics show that the majority of children living in poverty in Toronto are children of colour (Polanyi 2014), placing them in the key demographic that would be more likely to live in older houses and apartments with lead plumbing and paint and thus more likely to be exposed to lead poison, the issue has

more or less disappeared.¹² The figure of the vulnerable white child would appear to carry more cultural significance in the public sphere: s/he is more readily recognized as the public face of Toronto than the figure of the vulnerable child of colour.

Choking on Consensus Part 4: Working Outside and Below the Purview of Public Concern

A dose threshold is a dose level below which no observable effect occurs.

—*Encyclopaedia of Occupational Health and Safety*

In comparison to the attention given to children in the public health literature of lead poisoning, material on the safety of workers in the lead industry is remarkably scant. As a result of this imbalance, these workers appear to be working in an ambiguous realm, a place where they are constantly in the presence of lead particulate but outside the general purview of public concern. Their workplace requires them to take the proper precautionary measures—wearing breathing masks, showering and changing their clothes before returning to their homes—but is also a place where often “no observable effect occurs.” By citing the *Encyclopaedia of Occupational Health and Safety* (Stellman 1998) I am not trivializing the importance of occupational health and safety regulations. Instead, I am underscoring the fact that the figure of the (white) child at risk of lead poisoning thoroughly overshadows the figure of the lead refinery worker.

While very young children do represent the population group most susceptible to the damaging effects of lead poison, there is a general impression that adults are somehow immune to lead poisoning, that after reaching a certain age lead can no longer damage a person’s brain or attack other parts of the body. This idea is yet another popular myth that has no basis in current toxicology. Humans are vulnerable to lead poisoning throughout their lives (Health Canada 2013B: 5). The persistence of this myth—that children are the only people that are affected by lead getting into the bloodstream and the human nervous system—helps to explain why in the public health literature dedicated to Toronto’s lead problem, which includes the various

¹² Because of the present lack of concern surround lead poisoning in Toronto, I could not find health statistics to back up this assertion that children of colour have replaced white children as the most vulnerable group, but this is the most logical conclusion.

newspaper clippings, pamphlets, guides, photos, letters, and government reports that I am using to assemble this chapter, there is very little expressed concern for the workers at the city's two main lead refineries: Canada Metal and Toronto Refiners and Smelters.

Included in the cache of documents I found at the public library was a well-worn photocopy of a court ruling, a document that manages to both address some of the harmful working conditions in the Toronto Refiners and Smelters plant and also exemplify this general disregard for the plant workers. Because the language of this ruling is extremely knotted, I have chosen to wrestle with it by displaying it as isolated strips and then speaking to its imposed assumptions and silences.

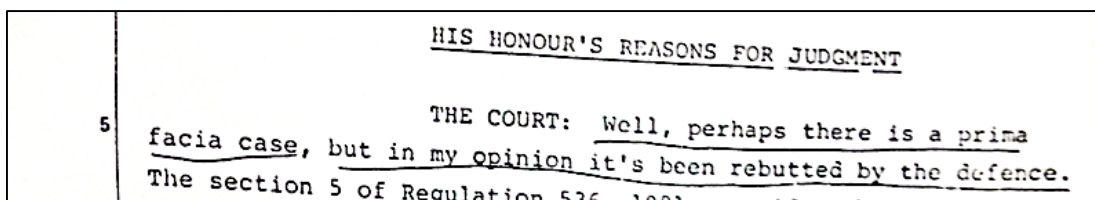


Figure 16: Judge Meen's ruling #1 (Source: Toronto Public Library)

This ruling was submitted by the court clerk on May 18, 1983, on behalf on the Honourable Judge Meen and the Province of Ontario. It might be final, but it lacks certitude. Saying that there could be a case of professional misconduct but the defence has rebutted it, sufficiently repelled the crown, does not completely dismiss the validity of the charges. While the judge doesn't break with convention or say anything out of the ordinary, the fact that the document has been underlined by a previous reader, suggests that I am not alone in reading the ruling as betraying a certain degree of doubt and incredulousness.

The second section I want to isolate is the judge's reference to the expert testimony of Professor Smith, a witness who has been called on the part of the plant to support its claim to have adequate safety measures in place. The judge expresses a lengthy thread or line of thought that begins in the middle of page 2 of the ruling and ends at the top of page 3. What I want to point is how the word "uneconomical" (*sic*) has a slight bend to it, as a result of the ruling being photocopied and mulled over. Here we have an example of a graphic form of parapraxis—a revealing and unintended message—in which the convoluted twists and turns of judge's

explanation are graphically expressed in the form of a snake. In this particular sentence, the judge is not being overly convoluted, but there does seem to be a certain amount of contortion at work to accommodate Toronto Refiners and Smelters and their way of doing business as usual. We are told that the Professor Smith (“in his most lucid fashion”) believes that “it may be possible to provide some kind of arrangement whereby the air would not be contaminated but that he knew of none and if there were one, it might well be uneconomical.” By stressing the impracticality and economic limitations that prevent the company from providing its workers with uncontaminated air, there is a clear implicit message: the health of the workers is secondary to the economic survival of Toronto Refiners and Smelters Limited.

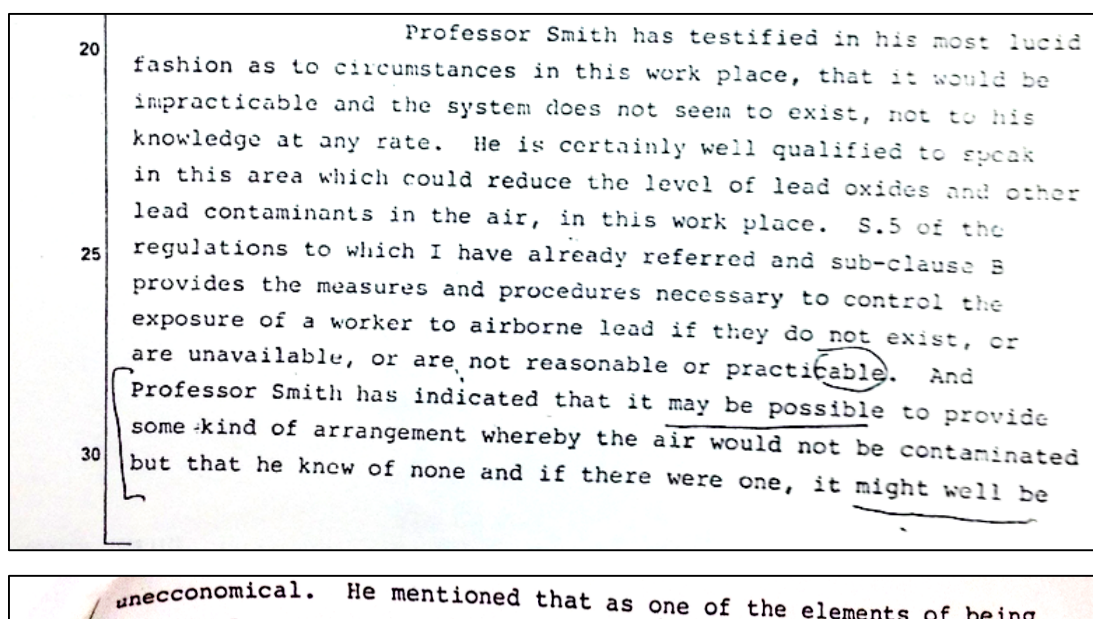


Figure 17: Judge Meen’s ruling #2 (Source: Toronto Public Library).

My interpretation of Judge Meen’s ruling may seem unfair, as I seem to be putting words in the judge’s mouth and alluding to a conspiracy of silence, a secret cabal that favours the rule of capitalism over the health of the proletariat. And my framing of this photocopied “snake” as a graphic form of parapraxis may seem sloppy and unscholarly, but to the cosmopolitical map maker such incidents are key, as they provide incidents of what Walter Benjamin refers to as the “dialectic of seeing” and the “optical unconscious,” two terms that he develops and references throughout his writings (1969; 1978). It is in such seemingly inconsequential moments that the

imposed silences, assumptions, and epistemic limits of a culture are given voice. I should clarify that I am not so much interested in the judge making a slip of the tongue and revealing his unconscious meanings, as I am in individual readers reacting to this ruling by photocopying and highlighting it in such a way that they have revealed something of its conflicting/contradictory messaging. By isolating these different parts of the ruling, I am less interested in putting words into the judge's mouth than I am in underscoring the harm perpetuated in his ruling and by the judicial system as a whole. In other words, by pointing out the rhetorical and graphic twists and turns of this document, I am attempting to reveal and counter how his "sticking to the letter of law" would itself be a form of injury inflicted on the plant workers.¹³ While there might not be a secret cabal behind the judge's decision, there is an underlying current—a legal circuitry—that is very much present and constitutes an ambient background that both tacitly and explicitly demands that certain people's lives have to be compromised for "the greater good." Despite the judge's homonymic name, I am not accusing him of being exceptionally mean or rigid. But I am accusing him of being an agent of the police, enforcing the rule of consensus, capital, and the dissemination of more of the same.

Along with this court case record, I have other documents that suggest that Toronto Refiners and Smelters operated on the fringes of acceptable business practices, including a newspaper story about the company failing to adhere to pollution guidelines that would improve working conditions and lower its lead emissions (Figure 18). There is also a memo that suggests that there was an effort on the part of individual civil servants to shut the refinery down. It is an

¹³ The practice of finding graphic forms of parapraxis in archival documents and published texts as a way to unearth and map the silences and assumptions of inscribed meaning and the regimes of everyday life was something that I was specifically trained in by the Deleuze scholar (and translator) Tom Conley, while I was a student at Cornell University's summer school, The School of Criticism and Theory. As a class, we spent much of the summer reviewing standard English editions (mostly the work of Freud, Lévi-Stauss, and Deleuze), looking for typos, contrary footnotes made by vigilant editors, and illustrations that conflicted or complicated the author's expressed arguments.

internal memo from the city's Medical Officer to the Local Board of Public Health responsible for Niagara, which raises the possibility of rescinding the refinery's licence (Figure 19).

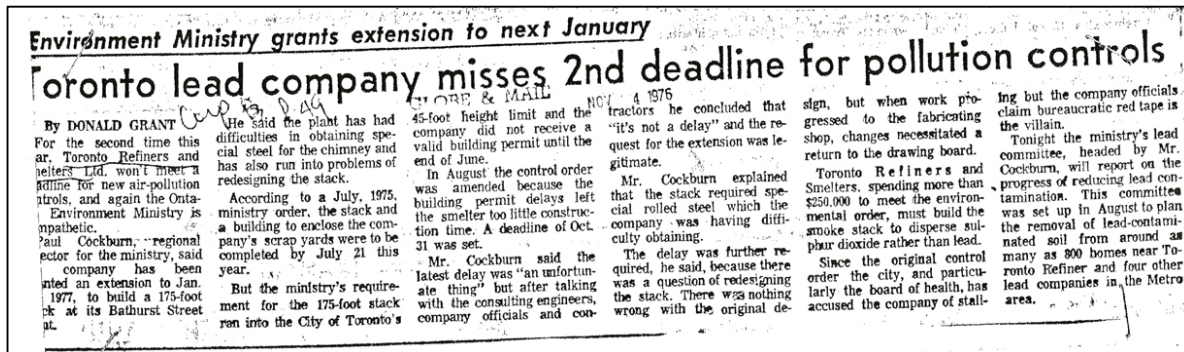


Figure 18: *The Globe and Mail*, Nov. 4, 1975

DEPARTMENT OF PUBLIC HEALTH	
February 21, 1975.	
<u>To The Local Board of Health</u>	
SUBJECT:	
Metro Licensing of Toronto Refiners and Smelters Ltd. as a Salvage Yard.	
ORIGIN:	
Medical Officer of Health, February 20, 1975.	
COMMENTS:	
I wish to inform the Local Board of Health that Toronto Refiners and Smelters Ltd. are the holders of a current Salvage Yard Licence pursuant to Schedule 26 of Metropolitan Toronto By-law 88-69. Since this Company is operating as a secondary lead smelter and not as a salvage yard, I feel the option would be open to the Board if it so decides to recommend to the Metropolitan Licensing Commission that this Salvage Yard Licence be reviewed with a view to rescinding it.	
WDC/WF	Medical Officer of Health.

Figure 19: Memo from a city medical officer (Source: Toronto Public Library).

The most damning evidence I found of the general disregard for the safety of the employees of Toronto Refiners and Smelters is in the form of brief news item, a story that was relegated to the back pages, almost as filler (Figure 20). This article appeared in *The Globe and*

Mail on April 26, 1983 and is restricted to one paragraph and by a rather unengaging headline. The charges mentioned at the end of the item are those dismissed by Judge Meen. This story and its placement in the paper are clear indications of the bias that is afforded both doctors and polluting industries. Here we have a clear case of professional misconduct, in which the health of the plant workers is put in serious jeopardy and yet the doctor is given a meagre fine of \$250. Neither this slap on the wrist, nor the doctor's cavalier admission of "having slipped up," afford the plant workers much attention or respect. Such instituted forms of medical and judicial care are inherently dangerous, as they reinforce the idea that it is *necessary* to expose workers to conditions that compromise their health, as a simple matter of doing business as usual.

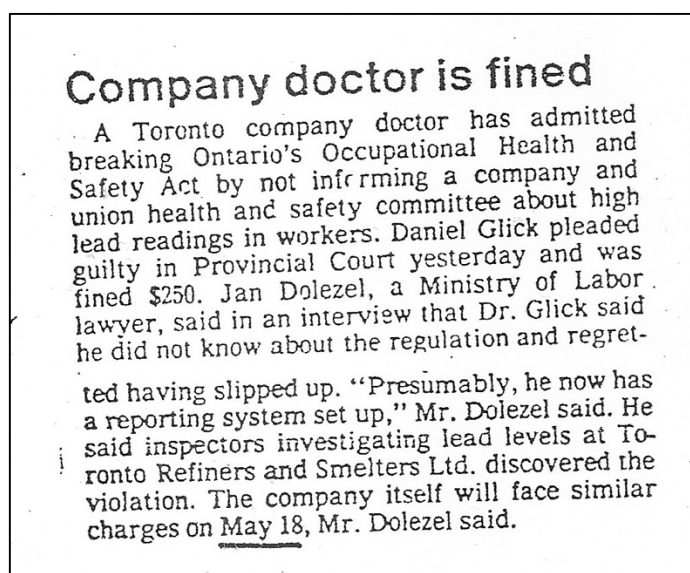


Figure 20: *The Globe and Mail*, April 26, 1983: Company doctor is fined (Source: Toronto Public Library).

Visits to the Lead Archivist and Ecological Storyteller

The basic deal we have struck as a society is that most pollution is in fact state-sanctioned – it is permitted according to certain specified limits or standards set down in regulations, and in the rare case where this legally sanctioned pollution results in proven harm, the state relies on tort law to step in and provide compensation.

—Dayna Scott

As the legal scholar Dayna Scott argues, pollution is a long-standing practice sanctioned and regulated by the state. She further explains that for this practice to sustain itself “the harm associated with pollution must continue to be understood as unusual – insignificant, and peripheral to the routine processes of modern industrial production” (2008: 295-296). This principle of sanctioned pollution, “the basic deal we struck as a society,” is foundational to capitalism: without pollution things could not be mass produced and sold at a profit. The primary task of environmental justice is to show that “the incidence of harm tied to pollution is not only significant, intentional, and expected, but also as inherent to our practices of production and consumption” (296). Risk management and environmental justice are thus two opposing sides of a rigid struggle: one that insists that pollution only ever *poses a potential risk*, while the other insists on the *systematic harm inherent to the status quo* and how this harm is routinely targeted against populations that are marked as being on the fringes of the public sphere, “the minority,” “the poor,” “the working class.” This act of isolating people as outside the supposed aims and rewards of capital is of course an important damning reflex in creating consensus — the agential machinations of capitalism and consensus need a certain number of the population (the part without a part) to serve as embodied reminders of the harsh consequences of not strictly adhering to its ideals and aims.

Environmental justice speaks back to the machinations of capitalism, knowing that this speaking back must be continuously renewed. This was one of the first lessons Laura Jones wanted to relay to me when I visited her to interview her and view her assembled lead archive. To paraphrase Laura, the community activist speaks truth to power knowing full well that she will need to speak truth to power the next day and the next day. Before ending this second Toronto lead story I have to acknowledge my debt to Laura. I can’t remember who suggested that I contact Laura but at some point in the fall of 2011 I found Laura’s email and wrote to her, asking if she would be willing to share some stories of her involvement as a neighbourhood activist in South Riverdale. Less than a week later I was sitting on the floor of her living room, surrounded by banker boxes full of dusty government reports, meeting minutes, newspaper clippings, multiple drafts of position papers, and multiple copies of prevention pamphlets and posters. In a separate box there was an assortment of photographs Laura took in the 1980s, documenting the

Blood Lead Street Fair and the abatement programs in both South Riverdale and Niagara. We both sat on the floor, drinking tea, putting the material into different piles. While we sorted through Laura's lead archive, she regaled me with anecdotes of lead activism.

Laura embodies ecological activism. In addition to assembling an neighbourhood archive, the walls of her Riverdale home (she moved from South Riverdale to the more affluent Riverdale in the late 1990s) are covered with images of an active communal life, revealing some of her past as a Quaker, teenager, daughter, civil rights activist, American expat, and Toronto city councillor. Her hospitality extended to asking me what we should be looking out for as we sorted through the bankers boxes. She also didn't hesitate when I said that I was interested in finding material that invokes uncertainty and counteracts the idea that the threat of lead poisoning lies buried in the past. I also told Laura that I was interested in charting the tacit biopolitics of lead: how particular public health strategies of lead prevention worked to acclimatize people to the ubiquity of lead and to the threat of lead poisoning. She knew that our stories of lead and its abatement would differ but she wasn't too concerned. Instead, she expressed frustration with a registered silence, a consensual resistance, that she encountered in her neighbourhood and in the city as a whole to discuss local environmental issues. She was also happy to have found someone who enjoyed sifting through the boxes and conversing about the politics of lead as much as she. I made three trips to Laura's house. At the end of two of these sorting and chatting sessions, I left with a heavy box of this archival material. These two boxes still sit in my apartment; some of the material litters my desk, couch, coffee table, and floor. I have caught something of Laura's archival bug, her passion for tracking the politics of lead.

In the World of Ambient Poisons, Supralinear Toxicity, and Slow Violence

By slow violence I mean a violence that occurs gradually and out sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.

—Rob Nixon

With the exception of carcinogens, toxins are regulated as though there is a threshold, or

safe level. But that is no longer a valid assumption for most toxins. And, because there is no threshold, the vast majority of people who will be impacted by these toxins have levels of exposure considered “safe.”

—Bruce Lanphear¹⁴

As a way to conclude this chapter I want to return to the subject of acceptable blood-lead levels and deal with a recently discovered phenomenon that toxicologists are struggling with and have identified as “supralinear effects.” This phenomenon has proven to be incompatible with the traditional toxicological thinking and methods and further underscores how lead appears to have unruly qualities that make it unmanageable and thoroughly incompatible with established and fossilized public health practices. As the toxicologist Bruce Lanphear points out, the continued use of toxic thresholds creates the precarious and contradictory situation in which people who have blood lead levels below instituted thresholds are made vulnerable because they are considered safe.¹⁵ In other words, many of the effects of lead poisoning operate in an unmeasured (and perhaps unmeasurable) gap. To try to understand the unruliness of lead and the full threat its ambient presence represents, it is important to grapple with the unnerving fact that people can be made sick and be considered safe at the same time.

Lanphear, who used to work for the American Centers of Disease Control (CDC) and now lives in Canada (teaching at Simon Fraser University), is considered one of the world’s leading authorities on lead toxicity. He sees public education about the dangers of lead and other toxic

¹⁴ As quoted in *The National Post* article by Shawn Conner, “New video by SFU prof illustrates the dangers of toxins,” Nov. 19, 2014.

<http://www.nationalpost.com/m/researcher+bruce+lanphear+video+little/10396289/story.html>

¹⁵ While some toxicologists have criticized countries for maintaining blood lead thresholds, there is no clear call for the complete removal of thresholds or the entire overall of the present apparatus, as toxicologists appear to cling to this method as the best way to deal with toxins.

chemicals as an important part of his role as a research scientist.¹⁶ Recently, he produced a seven minute video entitled *Little Things Matter: The Impact of Toxins on the Developing Brain*, in which he outlines the correlation between the dissemination of toxic chemicals and the lowering of IQ.¹⁷ In this short video Lanphear stresses how even the smallest concentrations of lead and other toxic chemicals can have lifelong repercussions and that these effects can be inter-generational, as the toxic burdens carried by pregnant mothers have shown to have a direct effect on the IQ performance of their children.¹⁸

Along with coauthoring the main blood lead study that was used to determine that there is no safe level of lead exposure (the principal study referenced in the above Health Canada report), Lanphear has coauthored a number of studies that stress the importance of supra-linear

¹⁶ As an advocate of public science—making science public—Lanphear is very approachable and I have corresponded with him through email. Each time he has repeated that I should feel free to email or phone if I had any more questions.

¹⁷ <https://www.youtube.com/watch?v=E6KoMAbz1Bw>

¹⁸ I have also seen Lanphear lecture on a similar set of correlations: the dissemination of lead toxicity in the form of leaded gas (ethylene) and the rise of violent crime, as shown in the crime statistics of cities in North America and Europe. This latter set of statistics has inspired a great deal of interest in the popular press. For example, Kevin Drum wrote a very informative article in *Mother Jones* entitled “Criminal Element.” An early draft of this chapter had a lengthy section that pointed to the undercurrents of racism and eugenics that run through both Lanphear’s lecture and Drum’s article and this idea of using crime statistics and the IQ scores of inner city children to create a direct link between lead poisoning, neurological damage, and urban violence. It also included a short review of the tragic and controversial death of Freddie Gray in Baltimore, Maryland and how he was diagnosed with lead poisoning as a child. I had to remove this section because it took me too far away from my specific focus on Toronto and because I felt that this material deserved to be developed as a separate piece of writing. This particular messy story of the politics of lead in Baltimore will have to wait so I give it the proper space and attention it demands.

effects in lead poisoning.¹⁹ By coordinating data from sets of blood lead tests and IQ tests, toxicologists have revealed effects that conflict with fixed idea that lead toxicity strictly adheres to the principle of an accumulated potency or strength, the logic that dictates that toxic or poisonous chemicals follow patterns of consistency so that they steadily become more and more harmful to a person as the dosage increases.

Because supra-linear effects break with this logic of incremental toxicity, the phenomenon is difficult to explain. Markowitz and Rosner, for example, provide an explanation of supra-linear toxicity that sounds somewhat contradictory. “New research,” they state, “shows that the most serious damage from lead occurs at some of the lowest levels of exposure, often in utero or in the first years of life, when neurological structures of the brain are forming. For example, compared to children with virtually no evidence of lead in their blood, the greatest effect of lead on IQ occurs in children with blood levels below 5 µg/dl. As blood levels climb above 5 µg/dl, IQ continues to decline but at a much slower rate” (218). But how can research show these two seemingly incompatible things: (1) the most serious damage occurs at the lower levels of exposure; and (2) IQ continues to decline with exposure?

If we turn to an actual study for a clearer explanation, we don’t fare much better. This is how supra-linear effects are described in a study that Lanphear coauthored: “The estimated decrement in intelligence quotient (IQ) points was found to be greater (3.9; 95% CI, 2.4 – 5.3) at an increase in concurrent blood lead from 24µg/L to 100 µg/L than at similar increases at higher blood lead levels” (*Budtz-Jørgensen, Bellinger, Lanphear, Grandjean 2013: 451*). The key term here is decrement, a measured reduction or loss. In a newspaper interview, Lanphear adopts a much more colloquial approach to describes this anomaly: “When levels rise from one to 10 micrograms, there is an average drop in intelligence-quotient scores of six to seven points. Moving from 10 to 20 micrograms, the IQ reduction is about 2.5 points, on average. So the overall reduction is about three times greater, proportionately, at the lower levels, which sort

¹⁹ Lanphear has an exceeding long bibliography, with over thirty publications. For a complete list of his publications and funded studies, see his faculty profile at Simon Fraser University (https://www.sfu.ca/content/dam/sfu/fhs/people/documents/blanphear_pubsAndActivities.pdf)

of blows everything out of the water” (Smith 2011). Things are blown out of the water because the larger degree or decrement of loss occurs at the lower levels. IQ continues to drop but at a slower rate. This phenomenon of children showing a larger degree of IQ loss at lower levels of exposure both confirms and complicates the notion of “slow poison,” the idea that people suffer harm as a result of being constantly exposed to trace amounts of poisons. Not only does ambient lead raise the spectre of slow poison, but the related phenomenon of supra-linear effects also intensifies the spectre by adding this important twist: *lead does not follow logic*. Or, if lead does follow logic, it is not compatible with the logic of fixed thresholds and linear increments of poisoning. Collected data have shown people suffering a substantial loss of IQ while having very low levels of lead in their blood, levels that are considered safe. This twist in lead toxicity is important because as a result of lead’s deviation from the fixed principle that toxins follow a steady rate of exposure, people can be considered safe, at risk, and being harmed all at the same time.

Toxicologists do not have a precise explanation for this phenomenon but it underscores the simple fact that there is a range of body types out there (as well as a host of social factors) and people do not all react to the presence of lead in the exact same way. This fact constitutes a serious flaw in the customary practice of using fixed thresholds as one of the main tools in combating lead poisoning. In an attempt to compensate for the immeasurable gaps produced by thresholds and deal with the now generally accepted fact that there is no safe level of lead, some toxicologists, including Lanphear, are arguing for a benchmark method. This method would call on medical practitioners to instigate intervention if the lead dose in a patient rose by 1 µg/dL. This change in detecting lead poisoning would require the introduction of regular blood lead testing on a massive scale and a much greater proactive stance on the part of public health practitioners, government agencies, and the general public.

Conclusion: The Lead Menace and the Daycare Centre

For such a radical shift in the public understanding of lead poison to manifest in Toronto the public as a whole would have to abandon the consensus that lead no longer matters and acknowledge the ambient presence of this toxin, to recognize lead as a clear source of slow

violence rather than something that is inanimate and manageable. I am extremely doubtful that the city is capable of such a radical acknowledgement, one that could dramatically undermine real estate values and the demand for more of the same. There is a final dour twist in the Toronto story of lead that reinforces my skepticism. To illustrate this final twist in the politics of lead in Toronto, I offer this last pair of images:

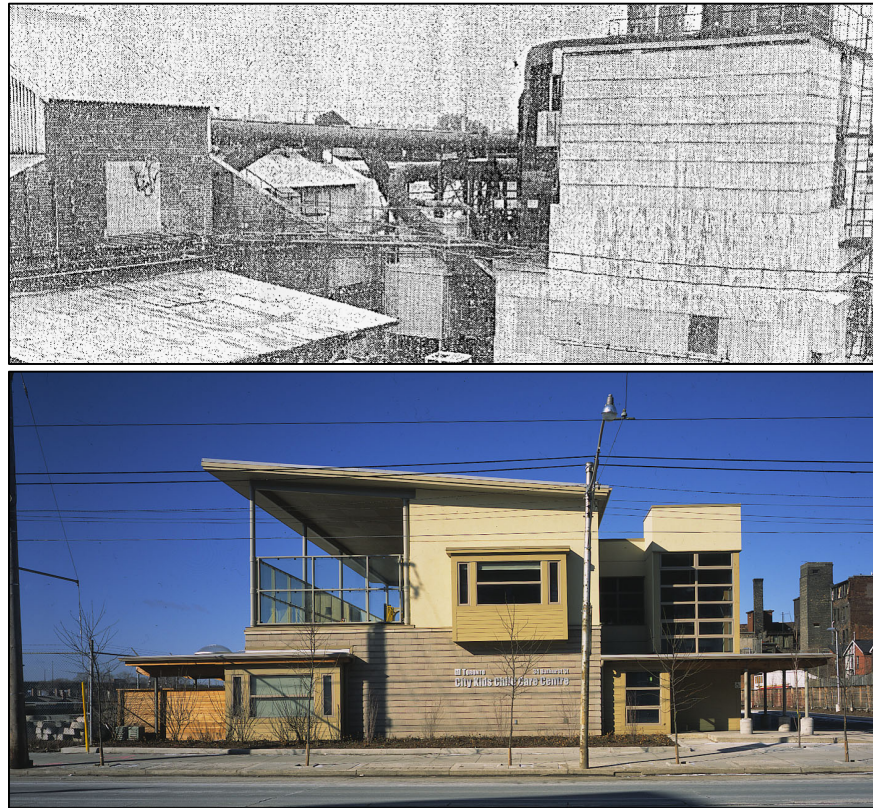


Figure 21: 34 Bathurst Street, then and now: Toronto Refiners and Smelters Limited and City Kids Early Learning and Child Care Centre

34 Bathurst Street: Of all the various uses that the city of Toronto could have chosen for the land that used to house the Toronto Refiners and Smelters Limited, they decided to build a massive city-run daycare facility for children specifically under the ages of six, the key demographic that is seen as being the most vulnerable to lead poisoning. Hopefully, I am not alone in seeing something truly disturbing here: the photo I used to begin this story, showing 34 Bathurst Street as a vast lead refinery and neighbourhood menace, a clear source of public

anxiety and concern; and a colourful image showing 34 Bathurst Street's current incarnation, a communal space entrusted with the job of making sure children are receiving the best proper care. There is a gripping, unavoidable suggestion that the decision to house preschoolers on the exact same spot that was at one time notorious as a source of lead particulate and contamination was motivated by consensus, a tenacious and collective will that wants to put Toronto's lead history firmly in the past. In other words, the act of building a huge daycare here would go a long way in convincing local residents and the city's population in general that the presence of lead had been thoroughly abated, and that now that the fear of lead poison has (supposedly) been removed, life can return to normal and get back to the business of more of the same. As I have argued, it is extremely difficult to pinpoint the tacit and harmful work of consensus because for the most part it operates in silence so that things like buildings, public health concerns, and neighbourhood activism simply disappear. But in this final pair of images, I think the public consensus to ignore lead poisoning speaks loud and clear.

Afterword: Flint, Michigan

In the course of assembling this dissertation, an event took place that further illustrates the messy politics of lead. In December 2015, Flint, Michigan, a small city of approximately 100,000 people, was thrown into the international news spotlight after its mayor, Karen Weaver, declared a local state of emergency. The mayor made her declaration as a way to force the state (which since January 2011 has had control of the city's budget) to take appropriate action to deal with the fact that Flint's water system had been contaminated with lead, and whole neighbourhoods were exposed to high levels of lead (Kellogg: March 5, 2016). In April 2014, Flint's main source of drinking water was switched—for cost-cutting measures—from a Detroit supply system that draws its water from Lake Huron to a local and older system that draws its water from the Flint River, a notoriously polluted river that runs through the heart of the city (Felton: January 16, 2016). After filtration, the water from the river was supposedly safe for drinking. It was the network of old lead pipes used to deliver the water from the filtration plant to people's homes that proved to be the source of lead contamination. The pipes were thoroughly corroded and continually released microscopic lead particles. In some cases, a brown

slurry poured out from the taps of people's homes. After a flurry of complaints, the state authority switch Flint's water delivery system back to the Detroit supply in October 2015, but this action did not correct the situation, as the lead and other contaminants remained in the system. Both water delivery systems depend on the same network of lead pipes that run under the city of Flint and deliver water to its residents.

The crucial difference between the two systems is that the water coming from Detroit was treated with a nontoxic chemical that acted like a pipe sealant. This chemical was supposed to be added to the water coming from the Flint River but, again for cost-cutting reasons, this procedure was not implemented. This combination of fiscal restraint, gross negligence, and corroded pipes resulted in tens of thousands of people living with lead contaminated water for more than two years. A number of boil water advisories were issued during this time in response to tests that found total coliform bacteria in the water, but while boiling the water would kill the bacteria, it would not remove the lead (Fonger: January 17, 2015). Mayor Weaver's declaration of emergency was followed by President Obama's federal declaration and the state's declaration, eventually made by Michigan governor, Rick Snyder, who was initially evasive and refused to acknowledge the disaster and the role his office played in it. Along with the growing number of children who have been diagnosed with lead poisoning, the scandal has brought about the resignation of numerous public officials and a series of class action suits. Manslaughter charges may also be laid, as a link has been made by local medical authorities between the rerouting of the city's water supply and a sudden local spike of Legionnaires' disease that resulted in the death of 10 people.²⁰

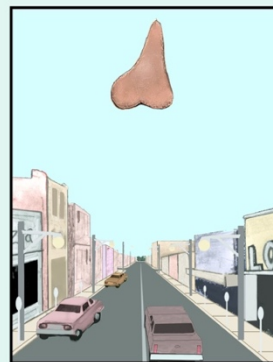
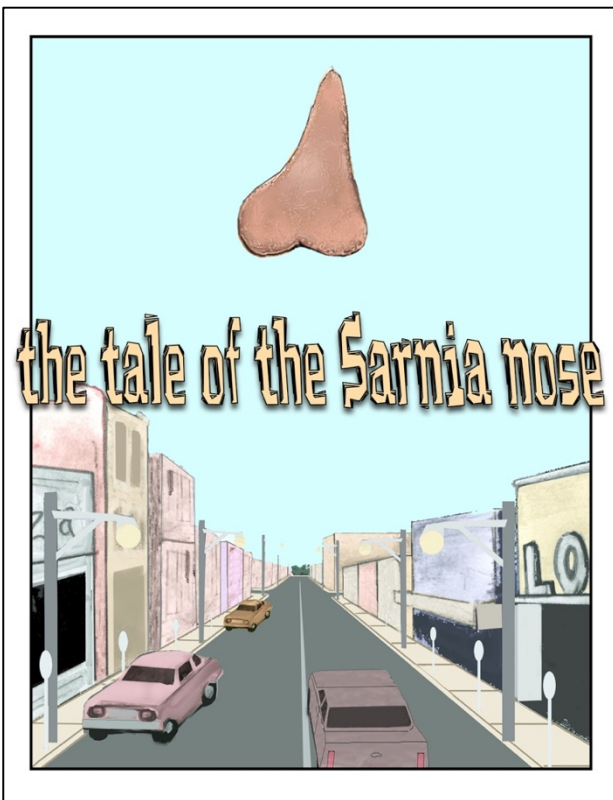
²⁰ The documentary film maker, Michael Moore, who grew up in Flint and featured the city and its economic plight in his film, *Roger and Me* (1987), has made a number of appearances on American national news programs, drawing attention to the crisis in Flint as a race crime. Moore has called for resignation of Governor Snyder as well as charges of manslaughter. On his website (<http://michaelmoore.com/10FactsOnFlint/>), Moore provides a breakdown of how the Flint crisis has unfolded as the combined result of lead and racism being built into the infrastructure of the city and state government.

The city's pipes have been flushed with chlorine and an anti-corrosive chemical that is supposed to seal the interiors of the pipes. Flushing the pipes has also been called a "band aid solution" that doesn't really address the severity of the problem. On May 4, 2016, President Obama visited Flint and assured the residents that he "had their backs" and was going to do everything to assure that they had safe water (Milman: May 5, 2016). He later held a press conference in which he held up a glass of clear water and took a sip to confirm the rather mixed message that the city's water was safe to drink once it has passed through a store-bought filter (Fenton: May 4, 2016).

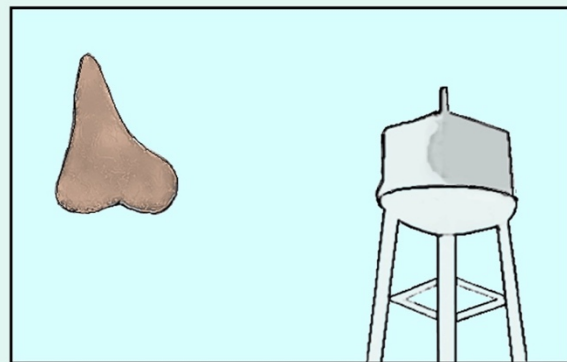
The lead crisis in Flint is an extremely messy story of government corruption and inaction (at both the city and state levels), one that dramatically underscores the ubiquity of lead, how it is built into the infrastructures of cities, making people and ecologies exceedingly vulnerable. But even to refer to the Flint crisis as an event is somewhat misleading, as this word doesn't account for the prolonged nature of the crisis, how its effects will continue to be felt by people in a slow and sometimes subtle manner, in ways that can't be easily identified or dealt with. Many of these effects are irreparable and will have neurological consequences that will dog people for the rest of their lives, and can be possibly handed down to subsequent generations. The unfolding tragedy in Flint graphically shows how the threat of lead poisoning (lead's ability to linger within the infrastructure of cities) and the consensual demand for doing business as usual (the persistence of neoliberal capitalism) are both relentless.

Chapter 4: The Tale of the Sarnia Nose

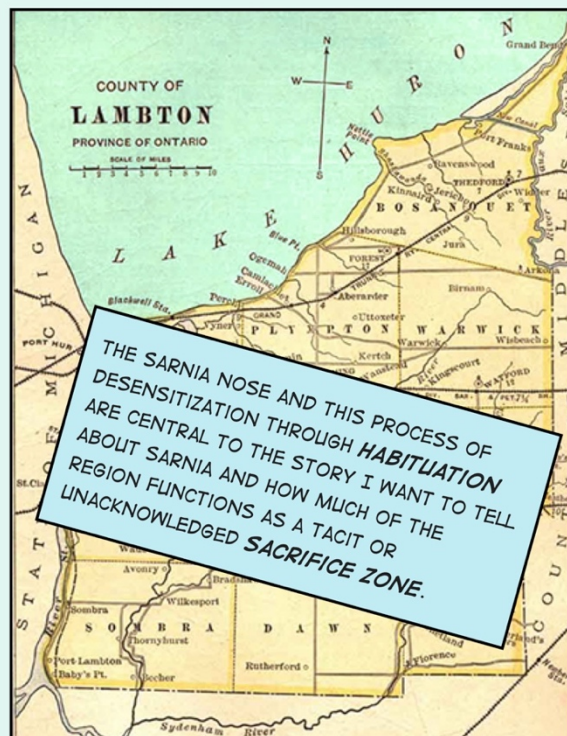
The following comic book chapter maps the conflicting emotions and aspirations that constitute the petropolitics of Chemical Valley, a vast industrial corridor in southwestern Ontario. Drawing its imagery from regional archives, industry promotional literature, and my ethnographic notes, *The Tale of the Sarnia Nose* examines the habituation of toxicity: how for many people living in the region the continuous emission of well-known poisons is seen as an unavoidable economic consequence that they have more or less learned to live with, despite high rates of lung cancer and asthma. Industrial pollution has very much become part of everyday life so that it is treated as a matter of fact rather than a matter of concern. Similarly, the giant petroleum plants fade into the background. This chapter has two opposing aims: (1) Map some of the ways this toxic public consensus manifests; and (2) Map local manifestations of dissensus: communal acts that ardently reject this process of becoming used to ambient toxins.

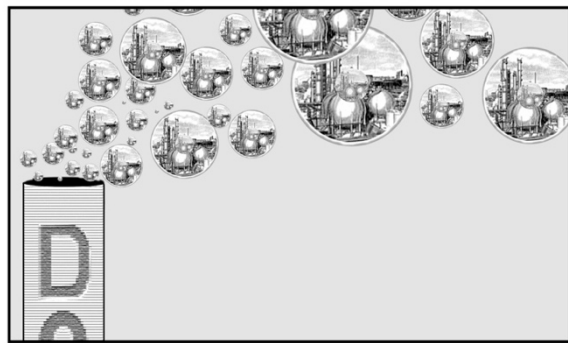
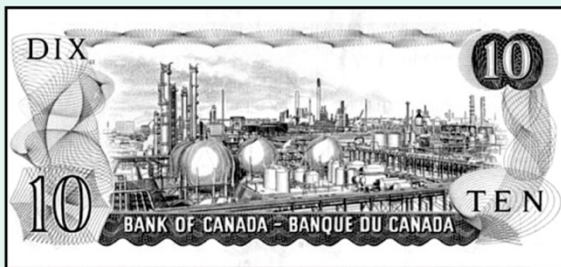


PICTURE THIS: A GIANT NOSE FLOATS ABOVE THE SMALL CITY OF SARNIA (LOCATED IN SOUTHWESTERN ONTARIO). THE LOCALS REFER TO IT AS THE **SARNIA NOSE**. IT FUNCTIONS AS A REGIONAL FIGURE OF SPEECH OR METAPHOR.

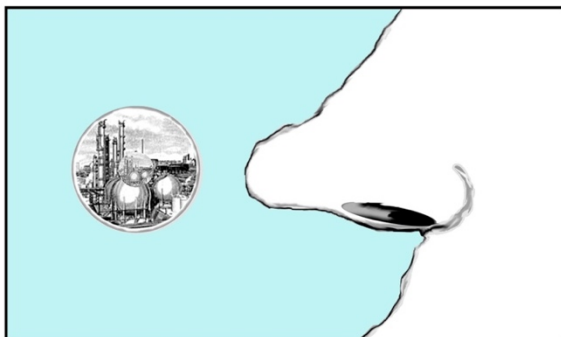


WHEREAS MY MOTHER, A LONG-TIME RESIDENT OF SARNIA, CONTINUES TO SMELL THE SULPHUR AND BENZENE EACH TIME THEY ARE RELEASED FROM THE LOCAL PETROCHEMICAL PLANTS, JIM, MY STEPFATHER, HAD DEVELOPED THE SARNIA NOSE. HE, LIKE MANY OTHER PEOPLE, HAD BECOME **DESENSITIZED** TO THE SMELLS COMING FROM THE SMOKE STACKS AND VENTING TOWERS.





MY INITIAL THESIS IS FAIRLY CLEAR: ALONG WITH EXPOSING PEOPLE TO AMBIENT POISONS, THE GIANT PETROCHEMICAL PLANTS THAT COMPRISE CHEMICAL VALLEY DISSEMINATE A TOXIC WORLDVIEW, ONE WHICH PEOPLE LIVING IN THE REGION CANNOT HELP BUT ABSORB.



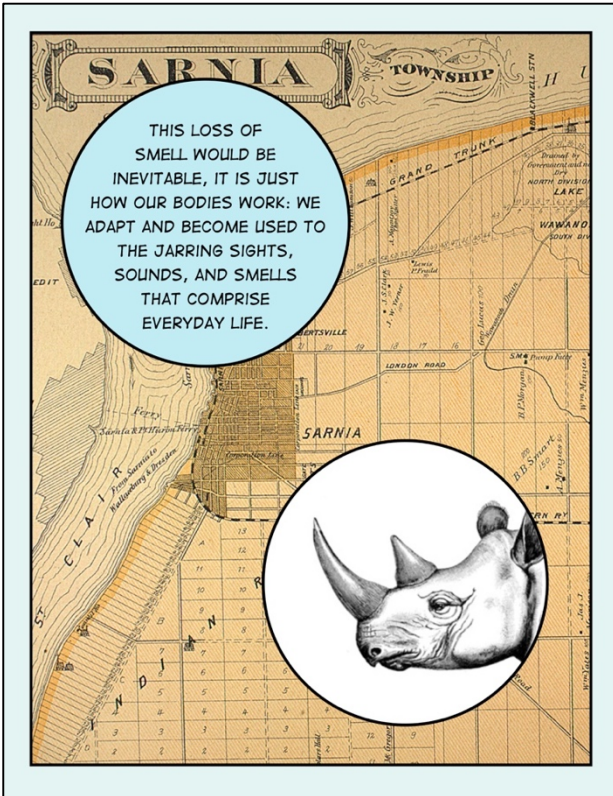
TO EXPLAIN MY ARGUMENT IN LESS ABSTRACT TERMS: EACH TIME LOCAL RESIDENTS CATCH A WHIFF OF THE ROTTEN-EGG SMELL OF SULPHUR DIOXIDE, WHICH CAN HAPPEN SEVERAL TIMES IN THE COURSE OF A WEEK, THEY ARE BLUNTLY REMINDED OF A REGIONAL HIERARCHY IN WHICH THE FINANCIAL SUCCESS OF THE PETROCHEMICAL COMPANIES IS HELD ABOVE EVERYTHING ELSE.



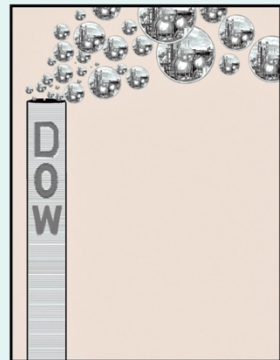
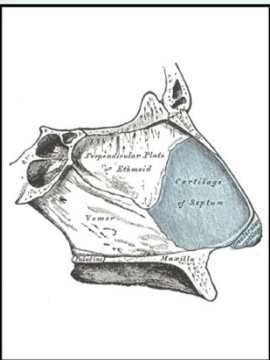
WITH THE PUNGENT FUMES OF INDUSTRY DRIFTING IN THE AIR, RESIDENTS WOULD BE HARD PRESSED NOT TO ADMIT THAT THEIR HEALTH (AND THE HEALTH OF THEIR KIN AND KIND) WAS NOT SIMPLY BEING PUT AT RISK, BUT INSTEAD WAS BEING DELIBERATELY SACRIFICED TO SUCH GOLIATHS AS IMPERIAL OIL, SUNCOR, SHELL, AND NOVA CHEMICALS.



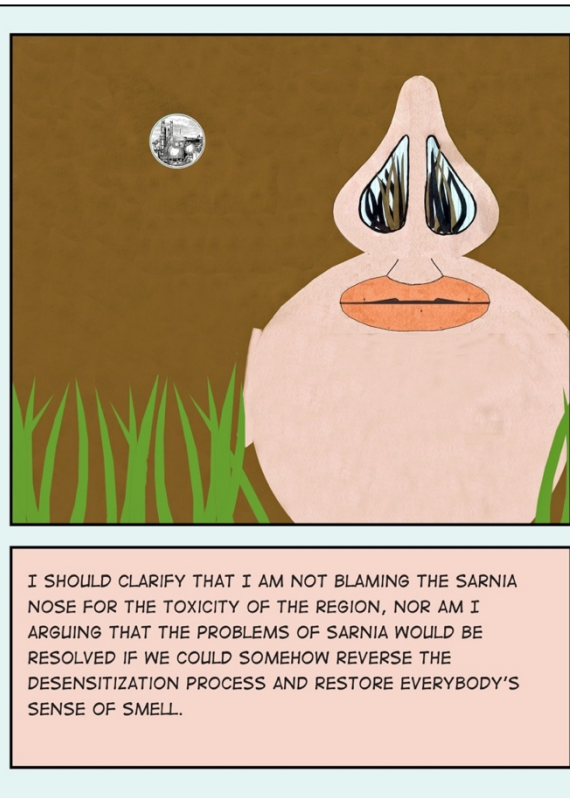
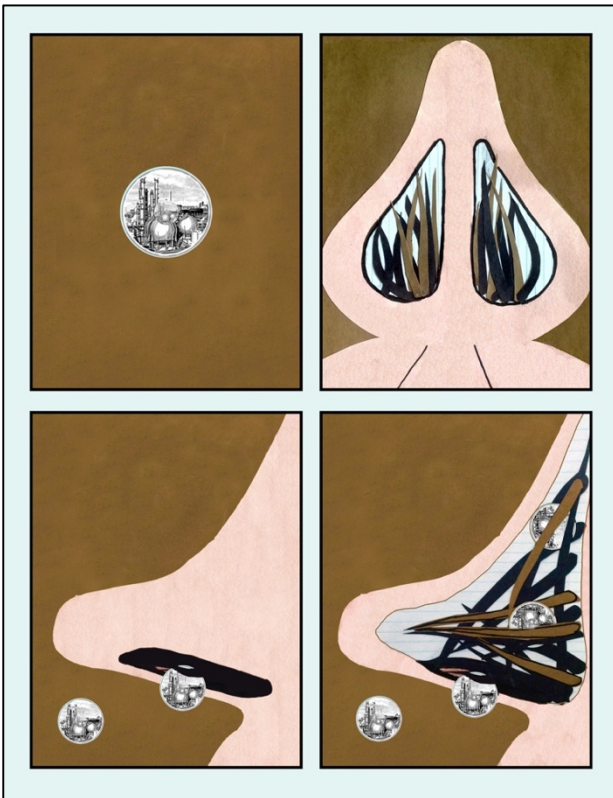
BUT THIS THESIS IS TOO SIMPLE, TOO NEAT. AS I HAVE ALREADY STATED, THE SARNIA NOSE COMPLICATES THINGS, AS IT STANDS TO REASON THAT MANY (IF NOT MOST) OF THE PEOPLE LIVING IN THE REGION WOULD BE LIKE JIM AND WOULD NO LONGER HAVE THE ABILITY TO SMELL THE NOXIOUS FUMES SURROUNDING THEM.

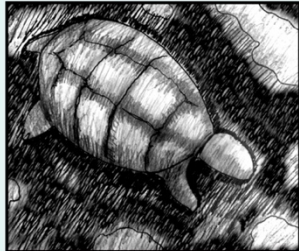


BECOMING DESENSITIZED TO THE EVERYDAY ENVIRONMENT OF SARNIA IS OBVIOUSLY DANGEROUS, WHICH BRINGS ME TO MY SECOND WORKING THESIS: THE SARNIA NOSE IS A FORM OF CULTURAL RHINOPLASTY THAT RENDERS PEOPLE PHYSICALLY INDIFFERENT TO INDUSTRIAL POLLUTION.

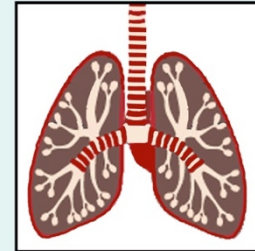
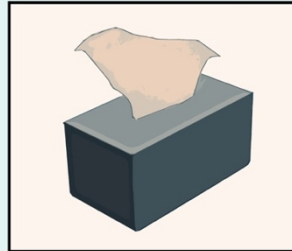


THIS NASAL INDIFFERENCE IS A CLEAR-CUT EXAMPLE OF BIOPOWER: A DIFFRACTED AND QUOTIDIAN MANIFESTATION OF POWER, WHICH IN THIS CASE MANIFESTS AS A PHYSICAL LIMITATION THAT AFFECTS INDIVIDUAL BODIES AS WELL THE BODY POLITIC, THE POPULATION AS A WHOLE.



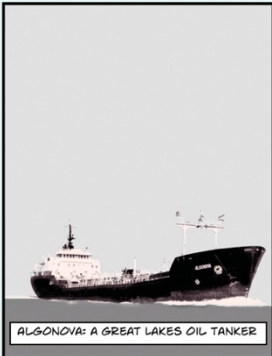


INSTEAD I AM ARGUING THAT THE SARNIA NOSE IS PART OF A **PETROCAPITALIST WILL TO POWER THAT HAS LITERALLY INFILTRATED THE BODIES OF LOCAL RESIDENTS** SO THAT THEY'VE BECOME INDIFFERENT TO THE FACT THAT THE AIR THEY BREATHE IS LACED WITH WELL-KNOWN POISONS.

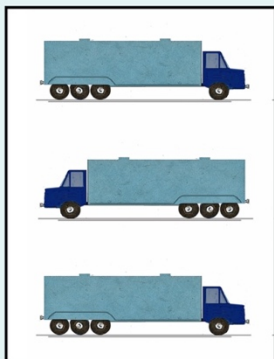


AS A PETROCHEMICAL TOWN, THE RESIDENTS HAVE ALSO LONG BECOME USED TO THE FACT THAT THE REGION HAS DRASTICALLY HIGH RATES OF CARDIOVASCULAR DISEASES, LUNG CANCER, AND MESOTHELIOMA.

DESPITE THESE ILLNESSES AND THE FATALITIES AND GRIEF THEY CAUSE, IT IS NOT DIFFICULT TO FIND RESIDENTS WHO EXPRESS A STEADFAST LOYALTY TO THE PETROLEUM INDUSTRY AND BELIEVE THAT THE REGION'S WELLBEING IS INEXTRICABLY LINKED TO THE FINANCIAL SUCCESS OF THE LOCAL OIL PLANTS.

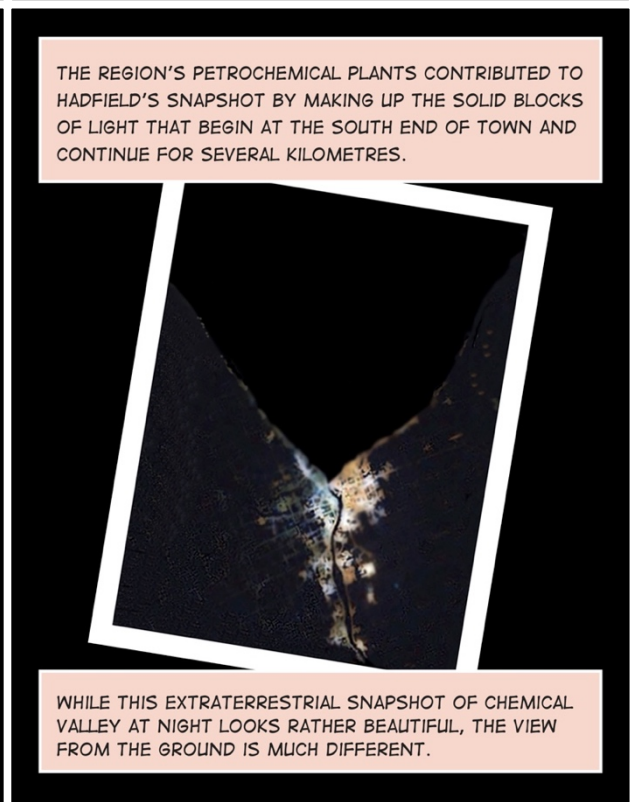
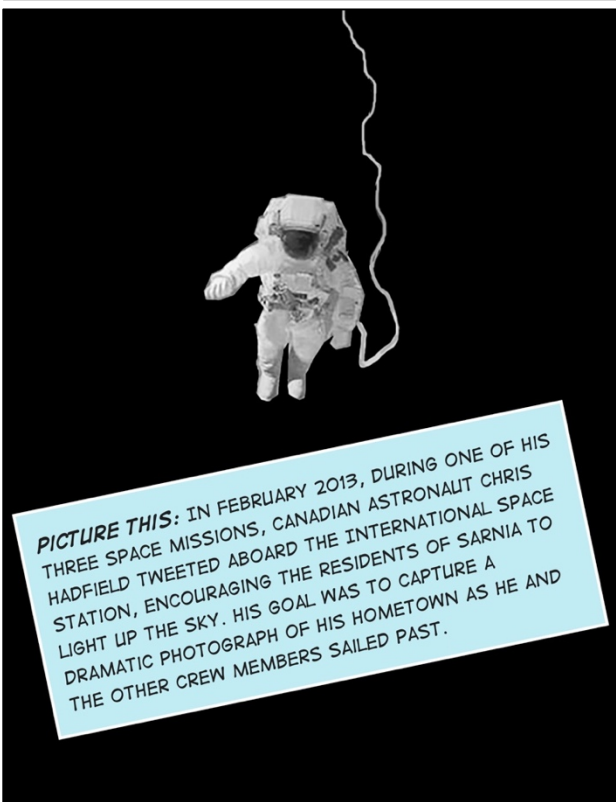
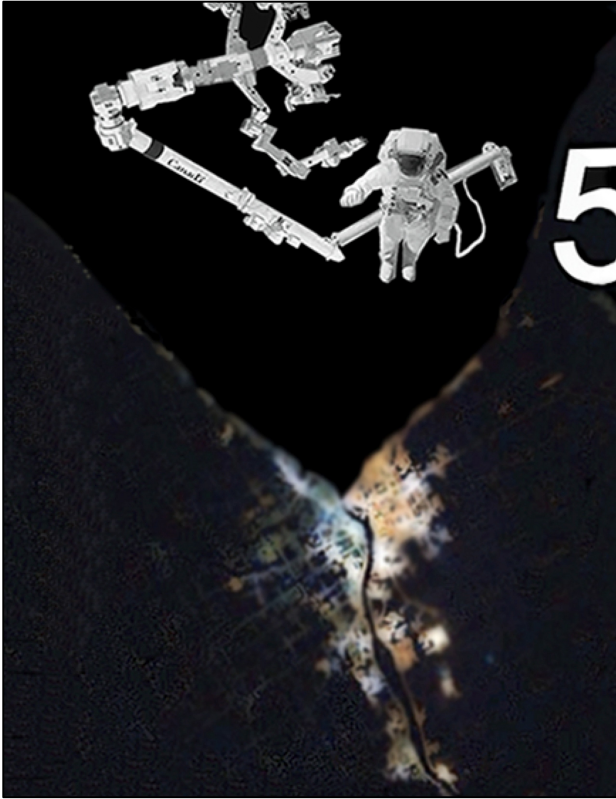


ALGONDVA: A GREAT LAKES OIL TANKER



ONE OF THE CENTRAL AIMS OF THIS DISSERTATION IS TO **WORK AGAINST THIS PROCESS OF BECOMING USED TO TOXICITY**. I AM ALSO MAKING AN ARGUMENT FOR COMPLEXITY, FOR THE STORIED NATURE OF THE SARNIA NOSE, FOR THE PLAYFUL AND SPECULATIVE LINES OF INQUIRY THAT SPILL OUT IN ITS WAKE.



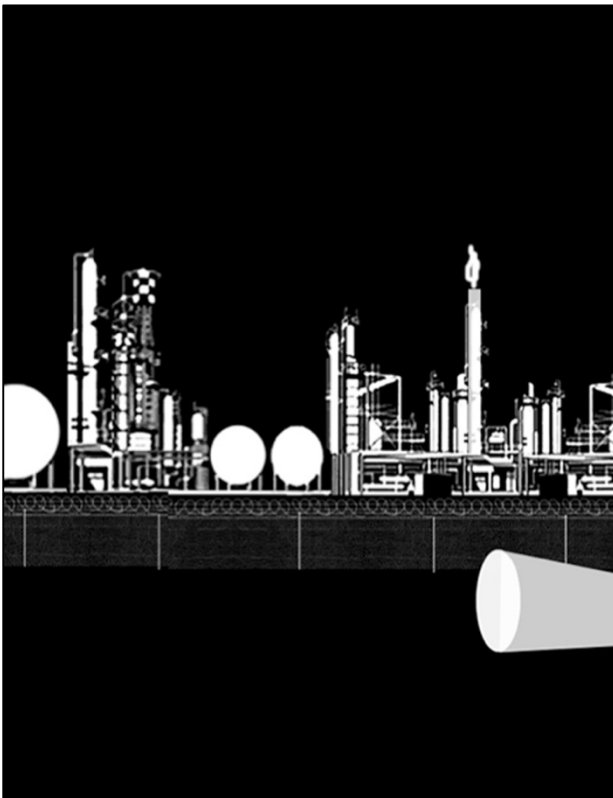




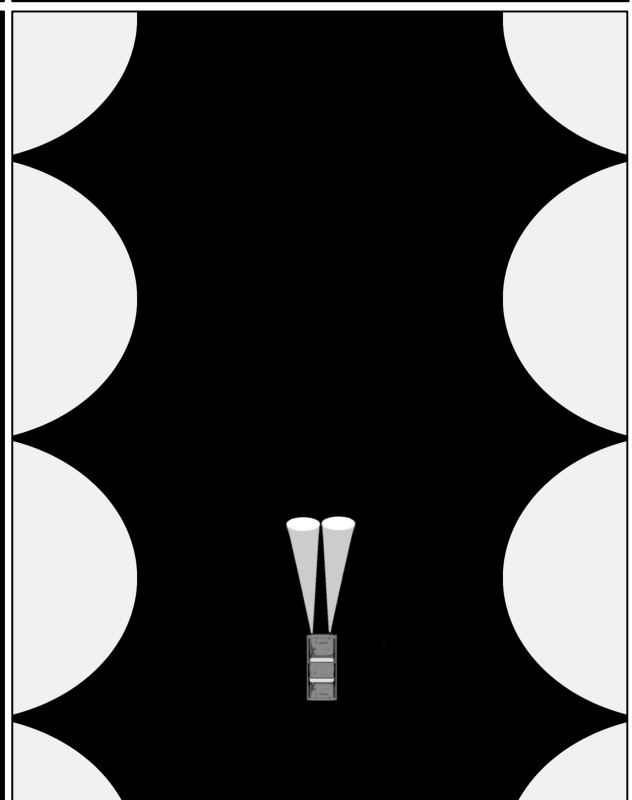
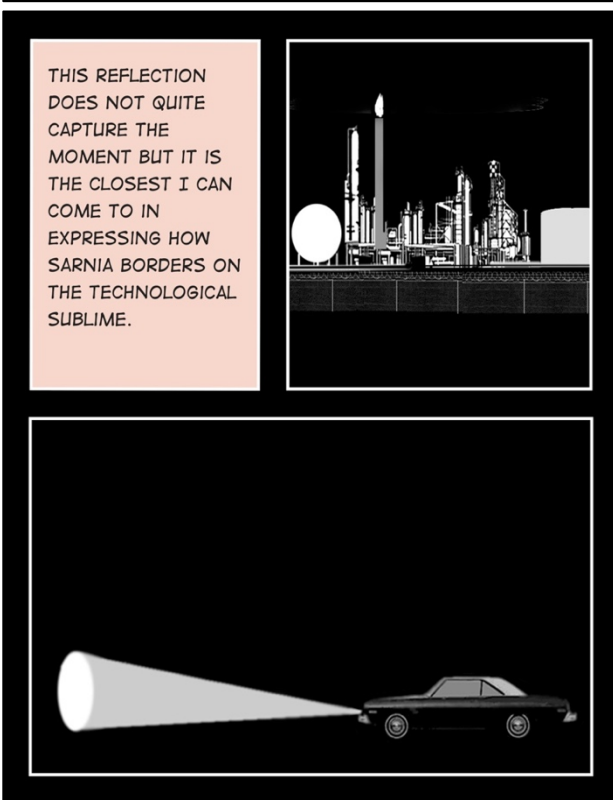
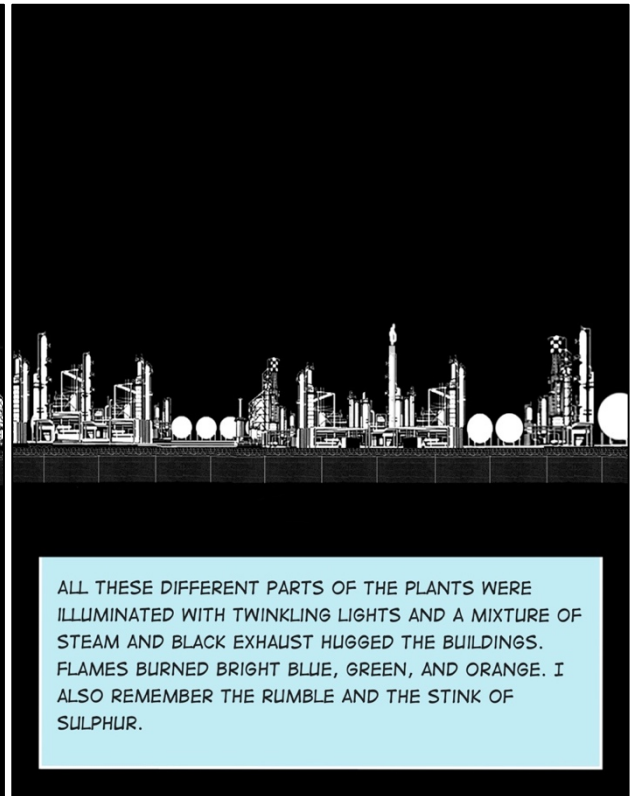
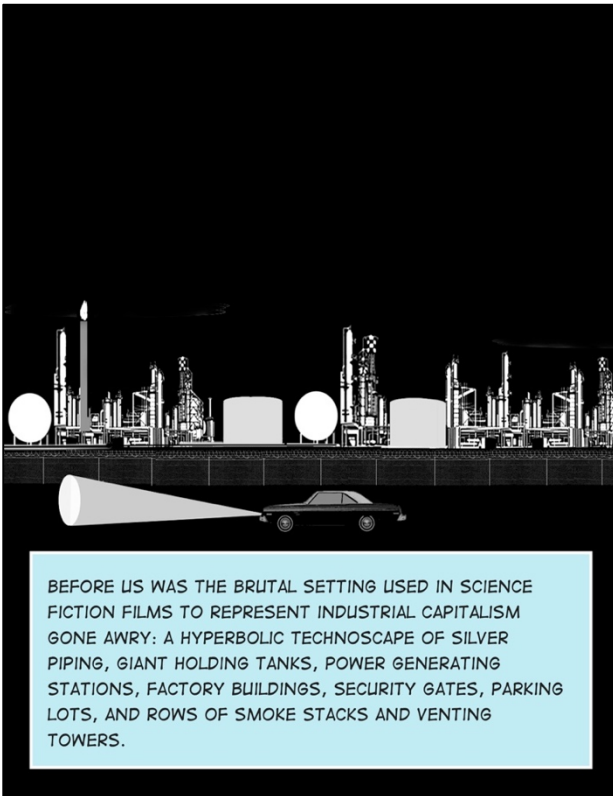
IT WAS DURING THE NIGHT MANY YEARS AGO THAT I FIRST ENCOUNTERED SARNIA AND ITS CHEMICAL PLANTS. SOMETIME IN THE LATE 1980S MY FRIEND LYN AND I WERE DRIVING NORTH FROM DETROIT ON THE WAY TO MY MOM'S HOUSE.



I REMEMBER DRIVING ALONG A MOSTLY PITCH-DARK HIGHWAY, THE RIVER PARKWAY, FEELING SOMEWHAT LOST AND EXHAUSTED. WE HAD JUST EXITED THE SMALL TOWN OF CORRUNA AND ENTERED THE SOUTHERN CORRIDOR OF CHEMICAL VALLEY.



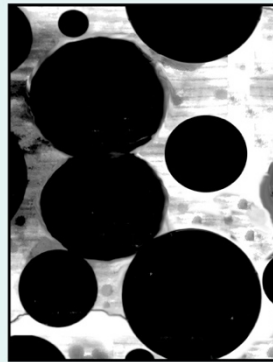
"THIS IS ROBOCOP!"
ONE OF US SHOUTED.
"THIS IS ABSOLUTELY
ROBOCOP!"





PICTURE THIS: CHEMICAL VALLEY IS HOME TO ONE OF THE BIGGEST CONCENTRATIONS OF OIL REFINERIES AND PETROCHEMICAL PLANTS IN NORTH AMERICA. THE REGION IS HOME TO 62 LARGE FACILITIES, WHICH TOGETHER ARE RESPONSIBLE FOR APPROXIMATELY 40% OF CANADA'S CHEMICAL INDUSTRY.

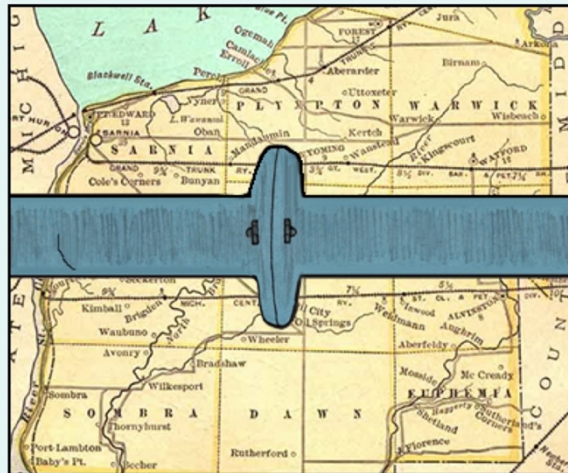
MOST OF CHEMICAL VALLEY'S SUPPLY OF CRUDE OIL COMES FROM THE ATHASABASCA TAR SANDS. OUTSIDE OF ALBERTA, SARNIA RECEIVES AND REFINES THE LARGEST VOLUME OF THE GOOEY BITUMEN BEING EXTRACTED FROM THE TAR SANDS.



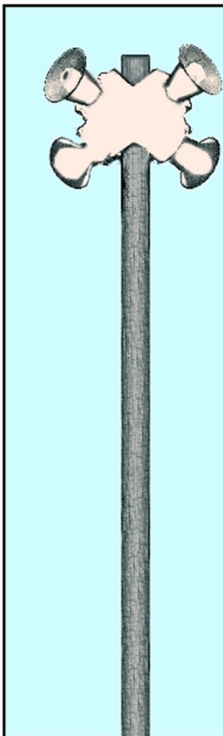
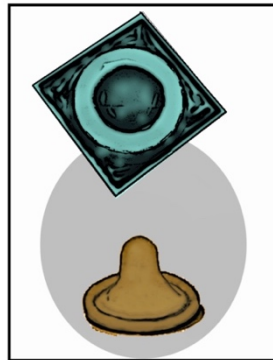
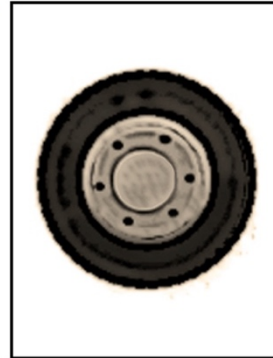
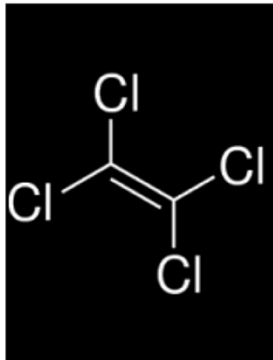
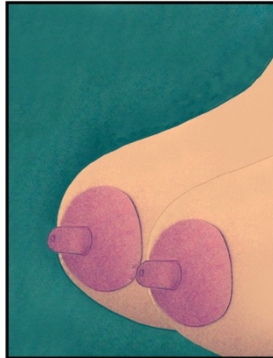
THE FOCUS IN CHEMICAL VALLEY IS TO MAINTAIN THE COMBINED FLOW OF THIS BITUMEN AND CAPITAL.



THIS FLOW DEPENDS ON A INTEGRATED PRODUCTION LINE, IN WHICH THE BITUMEN CRUDE TRAVELS VIA PIPELINES FROM ALBERTA TO ONTARIO, WHERE IT IS REFINED AND CONVERTED IT INTO DESIRABLE CHEMICALS, SUCH AS DIFFERENT TYPES OF FUEL, SOLVENTS, RUBBERS, AND PLASTICS. THESE CHEMICALS, WHICH IN THE INDUSTRY ARE CALLED FEEDSTOCKS, ARE IN TURN USED TO MANUFACTURE THE VARIOUS THINGS THAT WE CONSUME AND DEPEND ON.



RATHER THAN SIMPLY VILIFY OIL AND THE PETROLEUM COMPANIES, I AM INTERESTED IN PETROCHEMISTRY'S GRIP ON THE IMAGINATION AND IN HOW THE PRODUCTS OF PETROLEUM HAVE BEEN SO THOROUGHLY INTEGRATED INTO DAILY LIFE THAT IS IT VIRTUALLY IMPOSSIBLE TO IMAGINE LIFE OTHERWISE. WHAT, IN OTHER WORDS, WOULD OUR NEEDS AND DESIRES LOOK LIKE WITHOUT THE FLOW OF OIL?

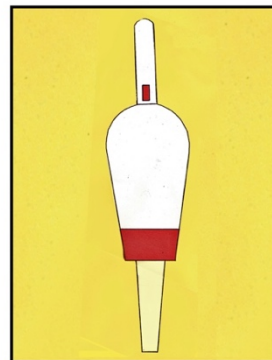
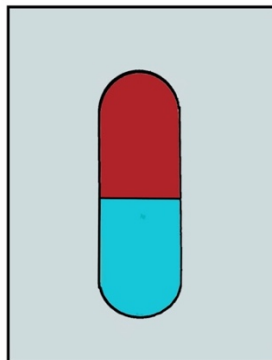
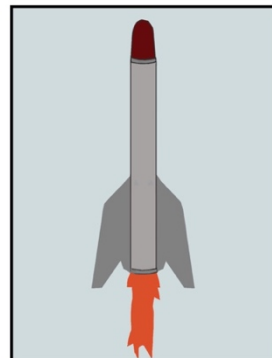
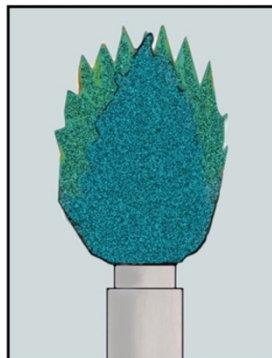
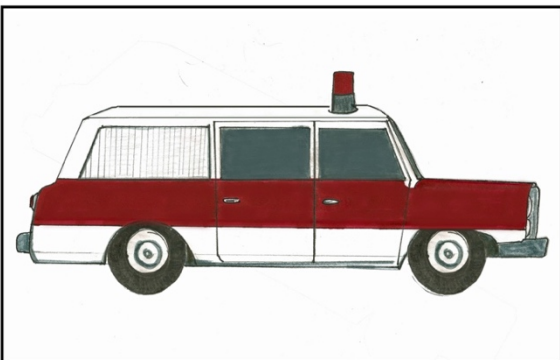


PICTURE THIS: IT IS A BEAUTIFUL DAY AND I AM SITTING IN MY MOM'S BACKYARD WRITING ABOUT CAPITALISM AND THE DISSEMINATION OF TOXINS. THE BACKYARD IS FULL OF SUN, THE SMELL OF CUT GRASS, AND FIVE OR SIX CABBAGE BUTTERFLIES FLUTTERING FROM FLOWER TO FLOWER. AT EXACTLY 12:30 PM I AM HAILED BY A LOUD VOICE THAT SEEMS TO COME FROM EVERYWHERE AND NOWHERE IN PARTICULAR.

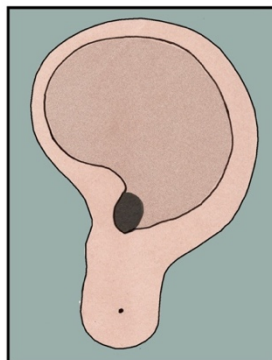
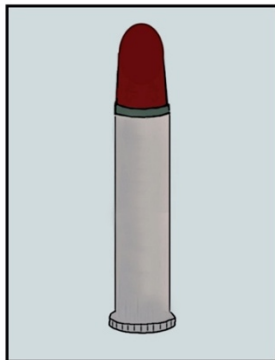
THE FOLLOWING IS A TEST OF OUR EMERGENCY SIREN SYSTEM.

THESE WORDS ARE FOLLOWED BY A LOUD SHRILL THAT FILLS MY EARS. A BROCHURE PRODUCED BY IMPERIAL OIL EXPLAINS WHAT IS GOING ON: "OUR EMERGENCY WARNING SYSTEM CONSISTS OF FIVE BLASTS LASTING 20 SECONDS IN LENGTH AND SOUNDS LIKE A WHOOPING SIREN. THE ALARMS ARE TESTED EVERY MONDAY AT 12:30 P.M." (IMPERIAL OIL 2012). AT THE END OF THE SIRENS, THERE SEEM TO BE THREE SECONDS OF ABSOLUTE SILENCE. THEN THE NORMAL WORLD RUSHES BACK INTO MY EARS AND ONCE AGAIN I HEAR THE NEIGHBOURS' AIR CONDITIONER, THE BIRDS CHIRPING, A DOG BARKING FAR OFF (THE TYPICAL SOUNDS OF LAZY AUGUST).

MONDAY
AFTERNOONS ARE
MARKED BY THIS
WEEKLY SAFETY DRILL,
A VIVID REMINDER OF
THE DANGERS
PRESENTED BY THE
PETROLEUM PLANTS.



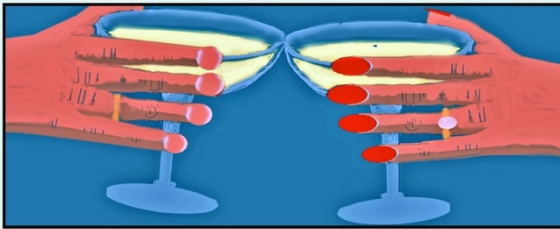
THE NEXT MONDAY I
MAKE A POINT OF
GOING TO A POPULAR
COFFEE SHOP NEAR MY
MOM'S HOUSE SO I
CAN SEE HOW PEOPLE
REACT TO THE SIRENS.
I WITNESS AN ODD
SCENE THAT MUST
REPEAT ITSELF ON A
WEEKLY BASIS: AT 12:30
THE SIRENS (WHICH ARE
JUST AUDIBLE OVER
THE DIN) CAUSE A
MINOR RIPPLE, AS
THERE IS A TEMPORARY
PAUSE IN THE MIXTURE
OF CONVERSATIONS
HEARD THROUGHOUT
THE ROOM.



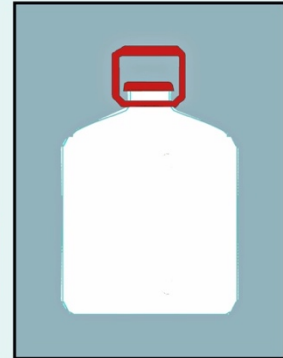
I MENTION THIS
INCIDENT BECAUSE IT
ILLUSTRATES HOW THE
SIRENS ARE
SIMULTANEOUSLY
HEARD AND NOT HEARD.
THE INCIDENT ALSO
PRESENTS A SLIGHTLY
DIFFERENT FORM OF
DESENSITIZATION THAN
THE SARNIA NOSE, ONE
IN WHICH THE DANGERS
OF LIVING IN CHEMICAL
VALLEY ARE BOTH
PUBLICLY DECLARED
AND REACTED TO SO
THAT THEY ARE
UNDERSTOOD MORE AS
**A MATTER OF FACT
THAN AS A MATTER
OF CONCERN.**



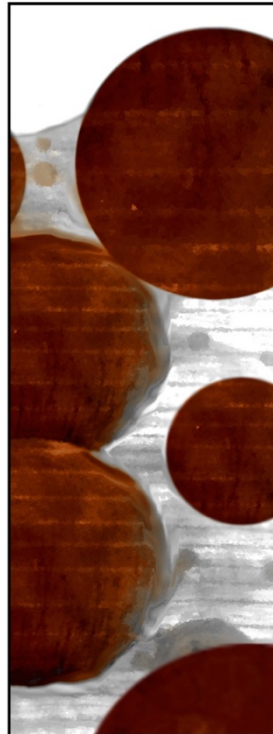
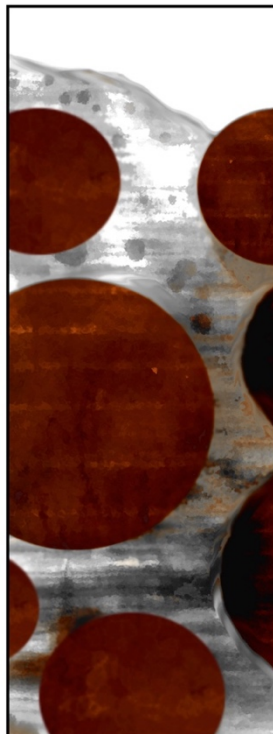
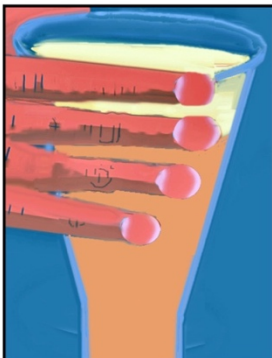
PICTURE THIS: THE DOWNTOWN STREETS OF SARNIA ARE BUSTLING WITH ACTIVITY. IT IS 1965 AND SARNIA CAN BOAST THAT IT HAS ONE OF THE HIGHEST STANDARDS OF LIVING IN NORTH AMERICA.



MANY OF THE COMMODITIES BEING MADE IN CHEMICAL VALLEY QUICKLY BECOME SYNONYMOUS WITH MODERN LIFE, SUCH AS FERTILIZERS, INSECTICIDES, PLASTIC WRAP, SQUEEZABLE BOTTLES, AND STYROFOAM.



PICTURE THIS: THE DOWNTOWN STREETS OF SARNIA ARE DEAD. IT IS 2015 AND SARNIA REMAINS AN IMPORTANT HUB IN THE MAKING OF ALL THINGS PETROLEUM. BUT THE REGION'S STANDARD OF LIVING HAS DRAMATICALLY DECLINED.



AND WHILE THERE IS PLENTY OF EVIDENCE OF THIS DECLINE, THE PETROLEUM INDUSTRY CONTINUES TO RECORD STEADY PROFITS. IN ADDITION TO THE EVER-INCREASING DEMAND FOR PETROCHEMICALS, THIS PROFIT IS ALSO THE RESULT OF COMPANIES SHRINKING THEIR WORK FORCES THROUGH AUTOMATION AND BY PURSUING SUCH UNION-BUSTING STRATEGIES AS HIRING SEASONAL WORKERS AND CONTRACTING OUT CERTAIN JOBS TO SMALL INDEPENDENT FIRMS.

ALTHOUGH MY MOM'S HOUSE IS IN THE SOUTH END OF TOWN AND CLOSE TO THE IMPERIAL OIL PLANT, IT IS PLEASANT HERE. A GIANT WILLOW TREE OCCUPIES THE BACK END OF THE YARD AND ITS UMBRELLA OF DRAPING BRANCHES BLOCKS OUT SOUND AND HELPS KEEP ME COOL.



THE WILLOW, THE HOUSE, AND THE WORKING CLASS NEIGHBOURHOOD ALL DATE BACK TO THE POSTWAR BOOM OF THE LATE 1940S.



TWO CARDINALS PLAY A GAME OF CALL AND RESPONSE. THERE IS ALSO A PACK OF BRAZEN SQUIRRELS, AND A SMALL, SHY GREY RABBIT MAKES REGULAR VISITS IN THE MORNING AND THE EVENING TO FEED ON CLOVER AND RHUBARB LEAVES.



WORLD WAR II DEMANDED A STEADY SUPPLY OF GASOLINE AS WELL AS SUCH THINGS AS PARACHUTES AND RUBBER TIRES. THESE DEMANDS HELPED ESTABLISH THE LUCRATIVE GAS, POLYMER, AND PLASTICS INDUSTRIES OF CHEMICAL VALLEY.



JIM WAS HAPPY TO HEAR THAT I'D BE SPENDING MORE TIME IN SARNIA. HE HAD RECENTLY RETIRED FROM WORKING AS A MACHINIST FOR A FIRM THAT SERVICED THE DIFFERENT PETROCHEMICAL PLANTS AND HE WOULD KID ME THAT I WAS ENGAGED IN A SORT OF ENVIRONMENTAL MUMBO JUMBO.

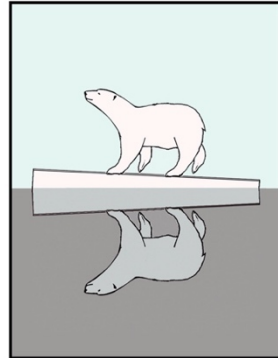
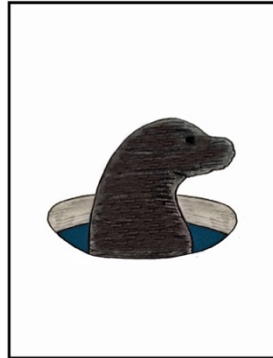
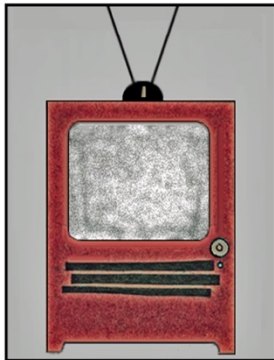
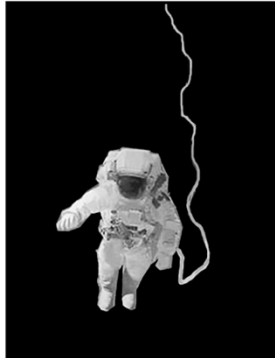
WHEREAS MY MOM DID NOT REALLY SEE THE POINT IN TALKING ABOUT TOXIC CHEMICALS FLOATING IN THE AIR, JIM SAW IT AS AN OPPORTUNITY FOR PLAYFUL DEBATE.



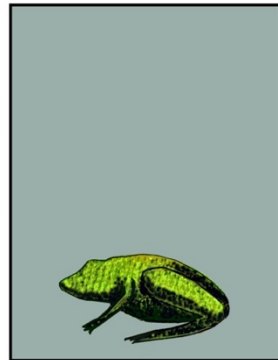
JIM HAD SCHOoled ME ON THE LAWNMOWER: "REMEMBER TO PRIME THE ENGINE BEFORE PULLING THE CHORD. AND MAKE SURE YOU KEEP THE GAS IN THE GARAGE OR IN THE SHADE." I PRESS THE RUBBER STOPPER THREE TIMES AND PULL THE CORD. THE MOTOR COMES TO LIFE, FILLING THE AIR WITH ITS OVER-BEARING SOUND.



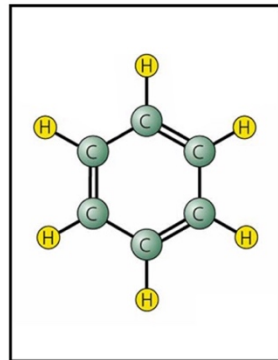
UNDER THIS FOG OF NOISE, I MOVE ALONG THE EDGE OF THE GARDEN.



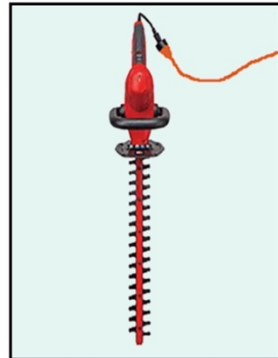
AFTER A SHORT WHILE THE MOWER BECOMES LESS JARRING AND AS I FOLLOW THE LINES OF CUT GRASS MY MIND SPLITS SO I AM STILL AWARE OF WHAT I AM DOING BUT I ALSO FIND MYSELF SIFTING THROUGH A CATALOGUE OF RELATED THOUGHTS.

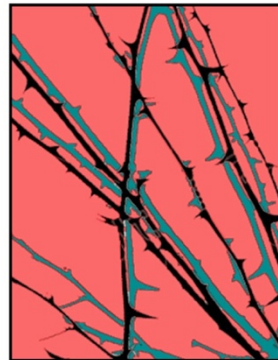
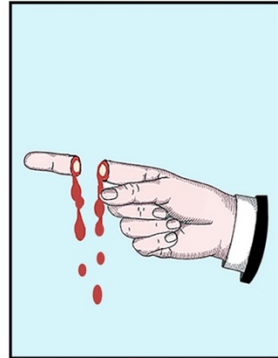
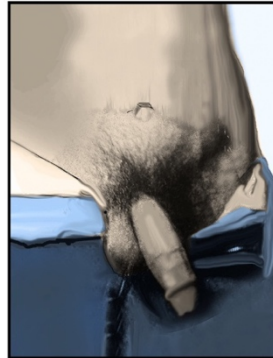
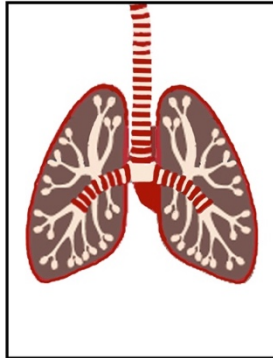
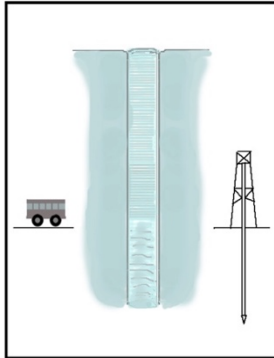


IT IS A SIMILAR STORY WITH THE HEDGE TRIMMER: "YOU HAVE TO HAVE PLENTY OF CORD TO WORK WITH AND YOU HAVE TO WRAP THE CORD ROUND THE HANDLE SO IT DOESN'T COME LOOSE."

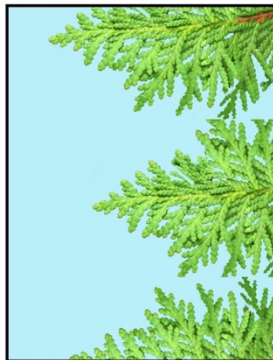


THE BUZZING SOUND OF THE TRIMMER IS ALSO SURPRISINGLY RELAXING AFTER A WHILE. BUT THIS IS HARDER, SWEATIER WORK AND I AM MORE AWARE OF THE VIOLENT REPERCUSSIONS IF I LET MY THOUGHTS DRIFT TOO FAR.

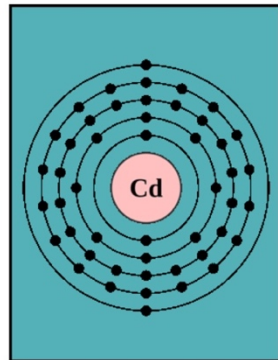




THE YARD IS DOTTED WITH A VARIETY OF THORNY QUINCE BUSHES WITH SMALL ROSE-LIKE FLOWERS OF RED, ORANGE, AND WHITE. THERE IS ALSO A LONG PRIVET HEDGE ON ONE SIDE AND A TALL SCRUFFY CEDAR BUSH ON THE OTHER, CREEPING IN FROM THE NEIGHBOUR'S YARD.

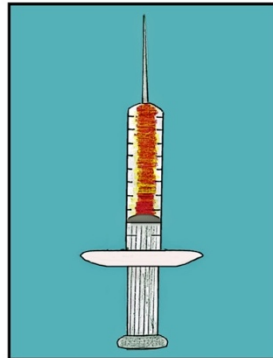


I ALSO KNOW THAT CEDAR, LIKE SAGE AND SWEET GRASS, IS A SACRED PLANT USED IN FIRST NATIONS MEDICINE AND HEALING CEREMONIES. THE EVERGREEN IS USED FOR SUCH THINGS AS SMUDGING AND IN MEDICINAL TEAS AND BODY OILS.

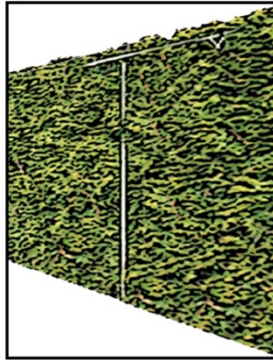
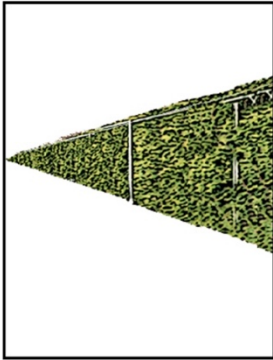


THE BRANCHES HAVE WOVEN THEMSELVES THROUGH THE CHAIN LINK FENCE, INCORPORATING IT TO FORM AN IMPENETRABLE WALL.

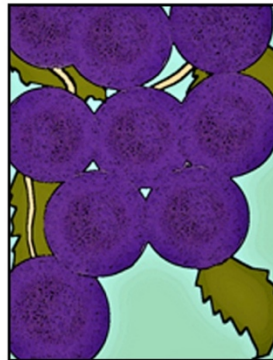
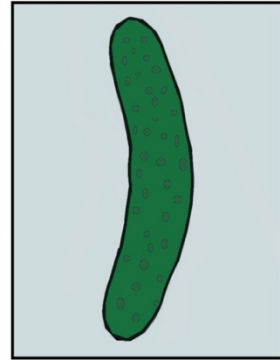
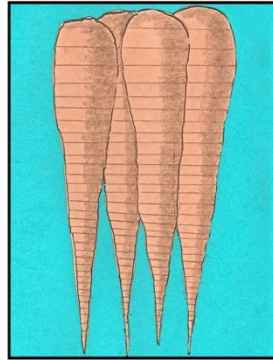
JUST THIS MORNING I HAD READ HOW CEDAR ACTS LIKE A SPONGE, SUCKING TOXINS OUT OF THE AIR, ESPECIALLY CADMIUM.



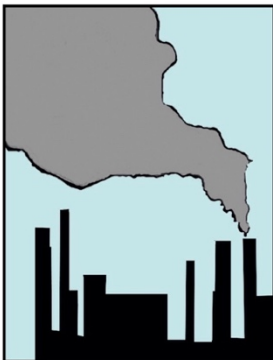
NOW THAT THE LOCAL PETROLEUM INDUSTRY HAS SUPPLIED THE CEDAR WITH A RICH CADMIUM DIET THE PLANT HAS BEEN RENDERED CONTAMINATED, TRANSFORMED INTO A VECTOR OF POISONING.



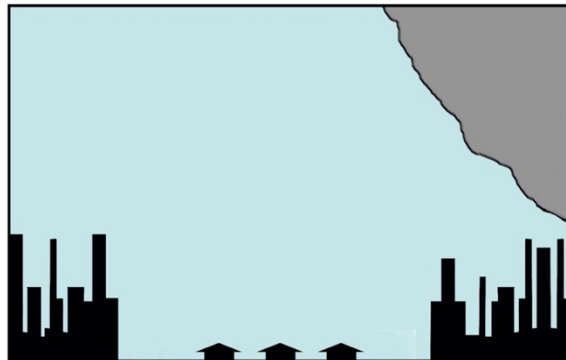
THE CEDAR'S PENETRATION OF THE CHAIN-LINK FENCE AND THE CADMIUM'S PENETRATION OF THE CEDAR ARE TWO CONCRETE EXAMPLES OF THE POROUS NATURE OF MATTER. EVERYTHING IS MADE UP OF HOLES, INCLUDING HUMANS. AND EVERYTHING IS ALWAYS ALREADY PENETRATED. THIS IS THE FIRST PRINCIPLE OF ECOLOGY: ***YOUR SKIN IS A CONDUIT, A SIEVE, A RECEPTOR, SO THAT YOU ARE ALWAYS ALREADY AN ECOLOGICAL NODE/AGENT/CITIZEN.*** AMBIENT INDUSTRIAL CHEMICALS MAKE THIS ECOLOGICAL CITIZENSHIP GRAPHIC.



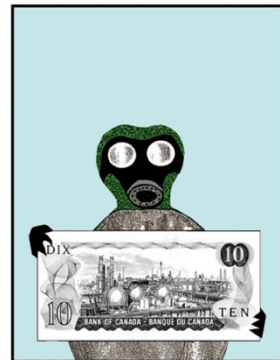
BUT WHAT DOES IT MEAN TO BE INTERPELLATED OR HAILED BY INDUSTRIAL EMISSIONS? WHAT DOES IT MEAN TO BE CONSCRIPTED INTO A PETROCHEMICAL WILL TO POWER BY MICROSCOPIC POLLUTANTS FLOATING IN THE AIR AND IN OUR BLOOD STREAM?

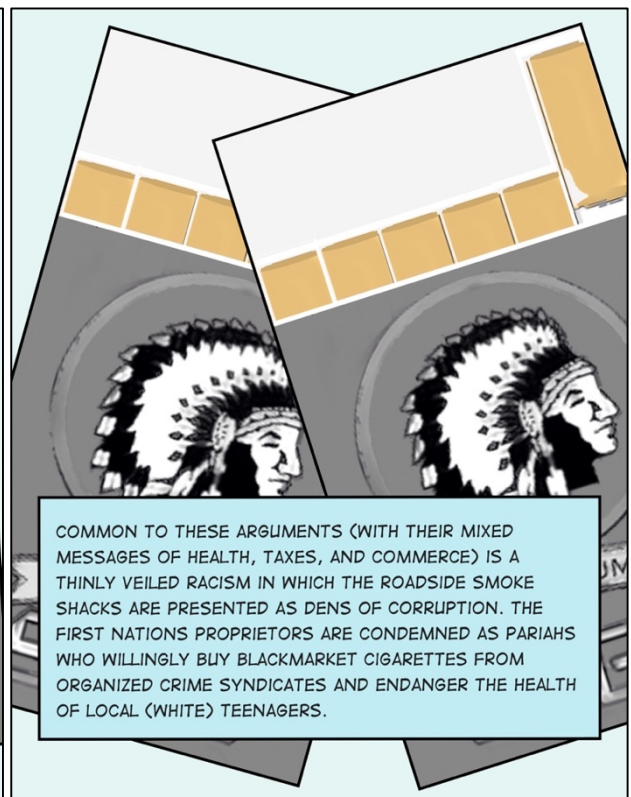
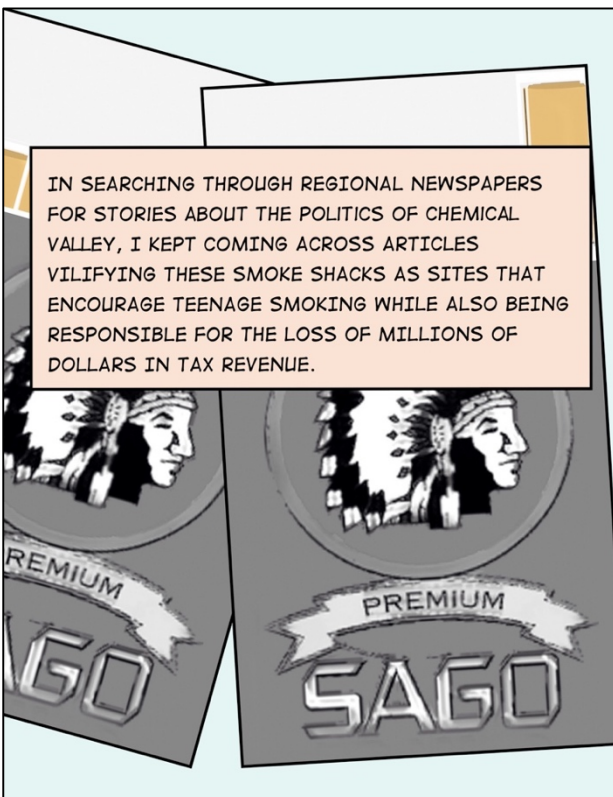


PICTURE THIS: THE FIRST NATIONS COMMUNITY OF AAMJIWNAANG SITS IN THE MIDDLE OF CHEMICAL VALLEY. IN INVOKING A PETROCHEMICAL WILL TO POWER IT IS IMPORTANT TO FOREGROUND AAMJIWNAANG, TO POINT OUT THAT THIS CHIPPEWA (ANISHINAABE) COMMUNITY OF APPROXIMATELY 850 PEOPLE IS LITERALLY SURROUNDED BY THESE OIL REFINERIES AND PRODUCTION PLANTS.



FOR MANY PEOPLE LIVING IN SARNIA AND ELSEWHERE IN THE SURROUNDING AREA, AAMJIWNAANG IS SIMPLY THE PLACE WITH THE ODD NAME THAT YOU PASS THROUGH AND THAT YOU MIGHT STOP OFF AT TO PURCHASE CHEAP CIGARETTES FROM ONE OF THE SO-CALLED "SMOKE SHACKS" THAT LINE THE PARKWAY.

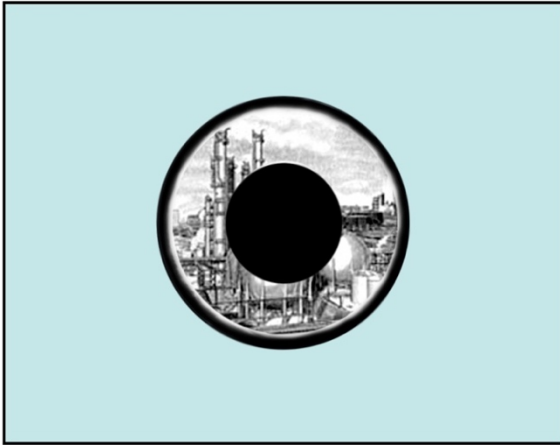




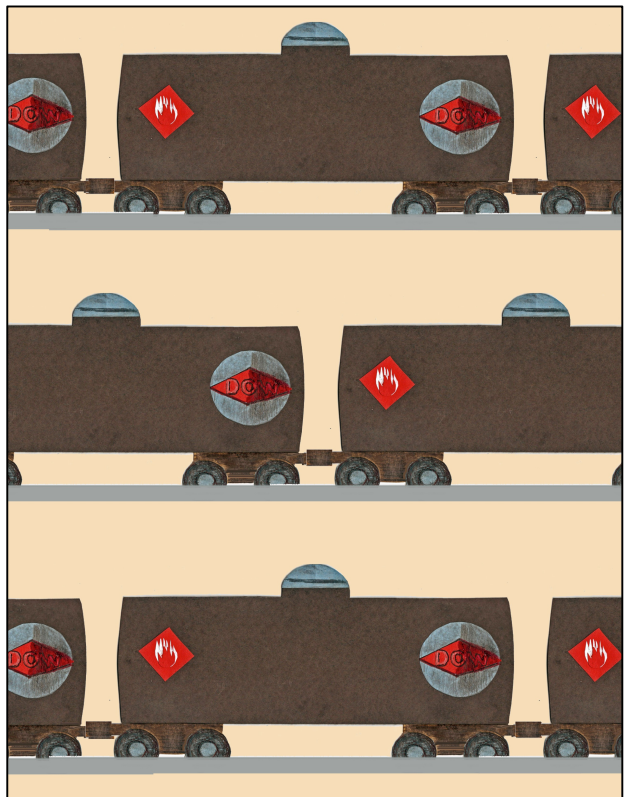
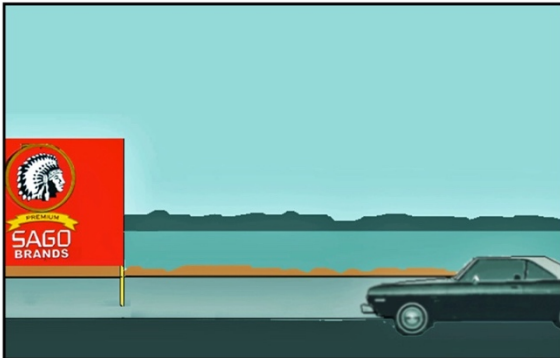
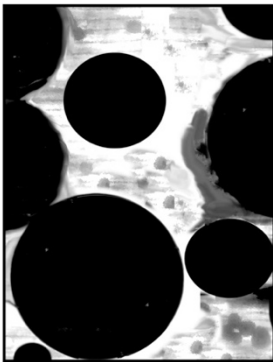
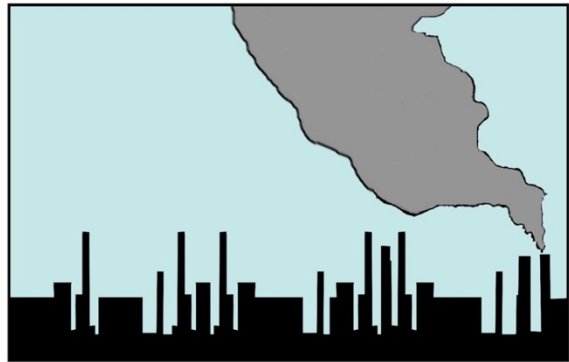
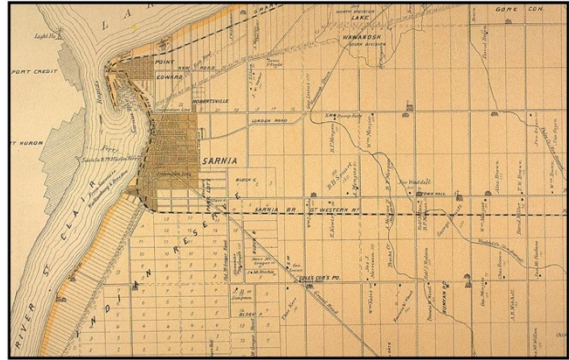
THIS IS HOW I FIRST
LEARNED OF
AAMJIWNAANG: IT WAS
WHERE JIM WOULD BUY HIS
PACKS OF CIGARETTES, WHICH I
REMEMBER HAD A GRAPHIC
IMAGE OF A TRADITIONAL
BRAVE IN A FEATHERED
HEADRESS.

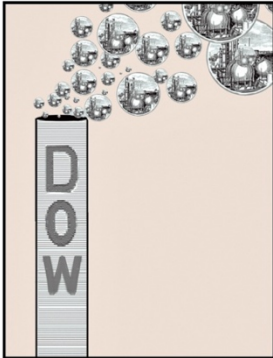
IN SEARCHING THROUGH REGIONAL NEWSPAPERS
FOR STORIES ABOUT THE POLITICS OF CHEMICAL
VALLEY, I KEPT COMING ACROSS ARTICLES
VILIFYING THESE SMOKE SHACKS AS SITES THAT
ENCOURAGE TEENAGE SMOKING WHILE ALSO BEING
RESPONSIBLE FOR THE LOSS OF MILLIONS OF
DOLLARS IN TAX REVENUE.

COMMON TO THESE ARGUMENTS (WITH THEIR MIXED
MESSAGES OF HEALTH, TAXES, AND COMMERCE) IS A
THINLY VEILED RACISM IN WHICH THE ROADSIDE SMOKE
SHACKS ARE PRESENTED AS DENS OF CORRUPTION. THE
FIRST NATIONS PROPRIETORS ARE CONDEMNED AS PARIAHS
WHO WILLINGLY BUY BLACKMARKET CIGARETTES FROM
ORGANIZED CRIME SYNDICATES AND ENDANGER THE HEALTH
OF LOCAL (WHITE) TEENAGERS.



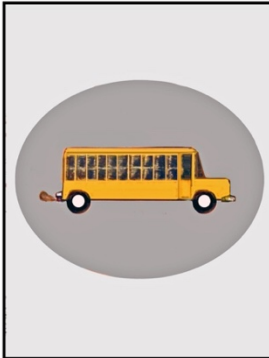
MY POINT IS NOT TO DISPUTE THE PROBLEMS ASSOCIATED WITH THE SALES OF CONTRABAND CIGARETTES. INSTEAD, I WANT TO UNDERSCORE HOW THIS EXPRESSED CRITICISM OF THE SMOKE SHACKS BETRAYS A REGIONAL MYOPIA, IN WHICH THESE SMALL ROADSIDE STORES BECOME THE FOCUS OF ATTENTION WHILE THE GIANT PETROLEUM PLANTS AND THE OBVIOUS RISKS OF CANCER AND RESPIRATORY PROBLEMS THEY PRESENT TO THE PEOPLE OF AAMJIWNAANG ARE IGNORED.



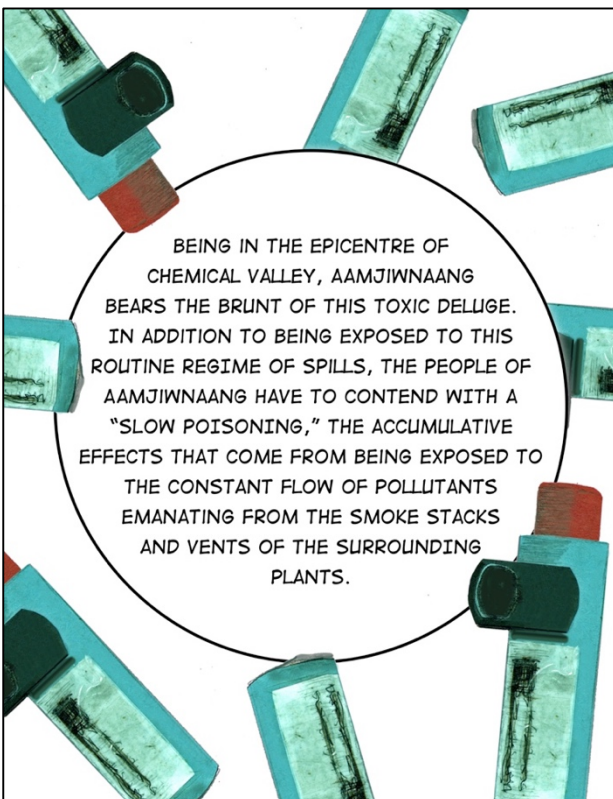
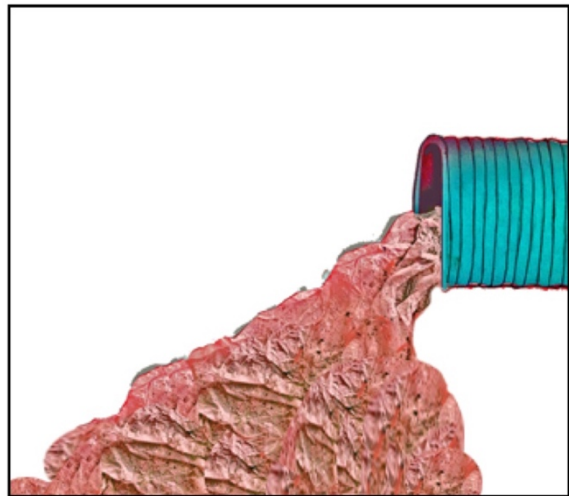


PICTURE THIS: THERE ARE HUNDREDS OF RECORDED INCIDENTS IN WHICH THE PETROLEUM PLANTS HAVE RELEASED POISONOUS CHEMICALS INTO THE AIR AND INTO THE ST. CLAIR RIVER AND OTHER LOCAL WATERWAYS.

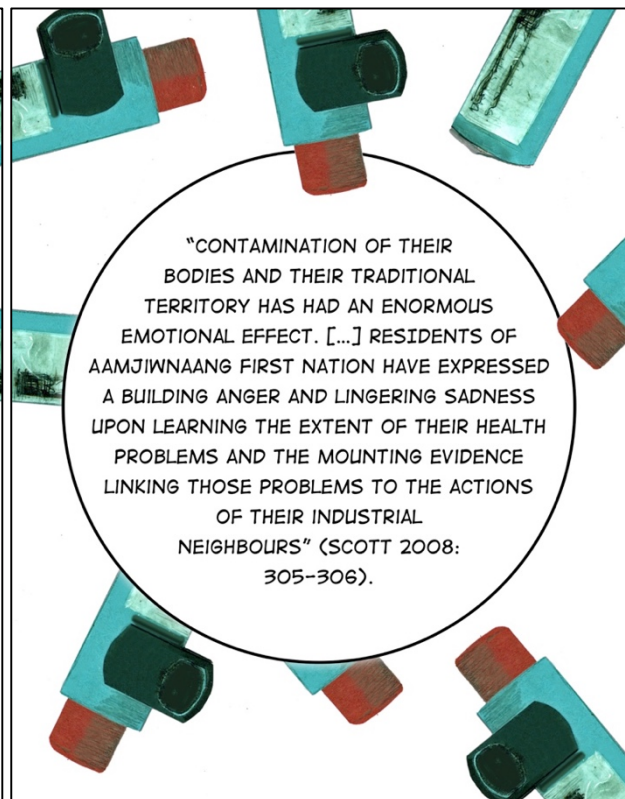
"SINCE 1986, THE ONTARIO MINISTRY OF THE ENVIRONMENT HAS DOCUMENTED AN AVERAGE OF 100 SPILLS PER YEAR" (STEPHENS, 2009: 29).



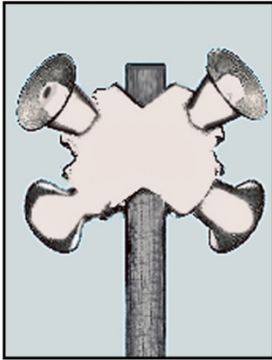
INCLUDED IN THIS NUMBER ARE WHAT THE INDUSTRY REFERS TO AS "CONTROLLED DISCHARGES," IN WHICH COMPANIES REGULARLY DUMP SUCH POISONS AS METHYL MERCURY, BENZENE, PERCHLOROETHYLENE INTO THE ST. CLAIR RIVER SO AS TO MAINTAIN THE PROPER TEMPERATURES AND CHEMICAL BALANCES NECESSARY TO THEIR REFINING PROCESSES.



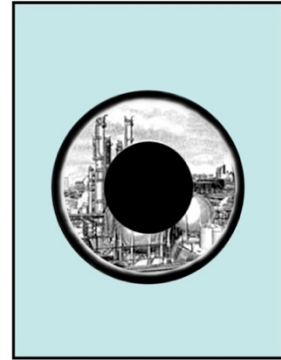
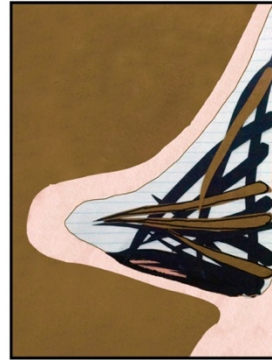
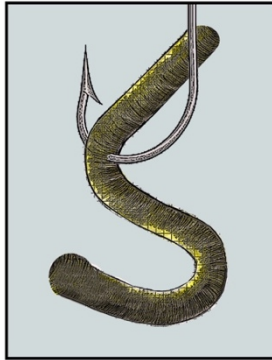
BEING IN THE EPICENTRE OF CHEMICAL VALLEY, AAMJIWNAANG BEARS THE BRUNT OF THIS TOXIC DELUGE. IN ADDITION TO BEING EXPOSED TO THIS ROUTINE REGIME OF SPILLS, THE PEOPLE OF AAMJIWNAANG HAVE TO CONTEND WITH A "SLOW POISONING," THE ACCUMULATIVE EFFECTS THAT COME FROM BEING EXPOSED TO THE CONSTANT FLOW OF POLLUTANTS EMANATING FROM THE SMOKE STACKS AND VENTS OF THE SURROUNDING PLANTS.



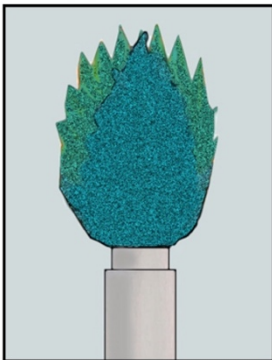
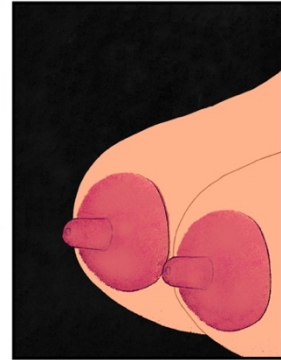
"CONTAMINATION OF THEIR BODIES AND THEIR TRADITIONAL TERRITORY HAS HAD AN ENORMOUS EMOTIONAL EFFECT. [...] RESIDENTS OF AAMJIWNAANG FIRST NATION HAVE EXPRESSED A BUILDING ANGER AND LINGERING SADNESS UPON LEARNING THE EXTENT OF THEIR HEALTH PROBLEMS AND THE MOUNTING EVIDENCE LINKING THOSE PROBLEMS TO THE ACTIONS OF THEIR INDUSTRIAL NEIGHBOURS" (SCOTT 2008: 305-306).



THIS TREMENDOUS VULNERABILITY IS COMPOUNDED BY THE FACT THAT RESIDENTS DEPEND ON THE PETROLEUM INDUSTRY TO SOUND THE ALARM AND TO REPORT ITS ACTIONS, ITS CONTROLLED AND ACCIDENTAL EMISSIONS.



THE STANDARD EMERGENCY PROCEDURE IS CALLED "SHELTER IN PLACE." SIRENS WILL SOUND AND A BROADCASTED MALE VOICE WILL CALMLY ADVISE RESIDENTS TO STAY INSIDE, TO CLOSE ALL DOORS AND WINDOWS, AND TO TUNE INTO A LOCAL RADIO STATION FOR FURTHER INSTRUCTIONS.

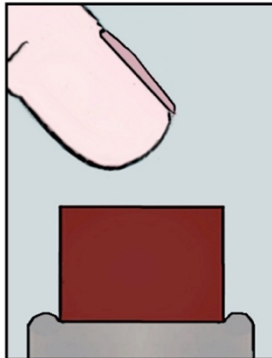


NOT ONLY ARE MANY OF REGION'S EMERGENCY SIRENS LOCATED ON THE PRIVATE PROPERTY OF THE PETROLEUM PLANTS, BUT THESE COMPANIES ALSO PLAY AN ESSENTIAL PART IN DECIDING WHAT CONSTITUTES AN AREA EMERGENCY AND WHEN TO SET OFF THE ALARM.



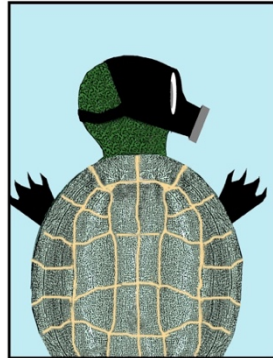
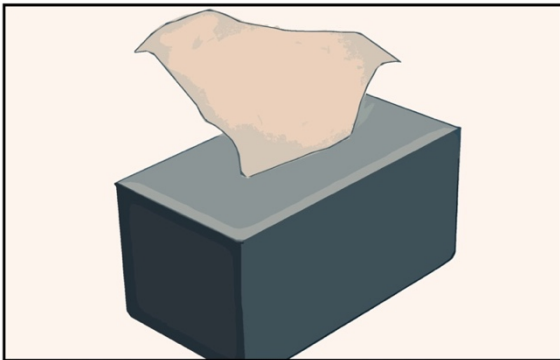
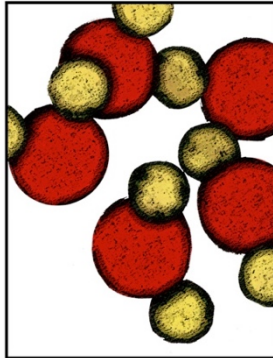
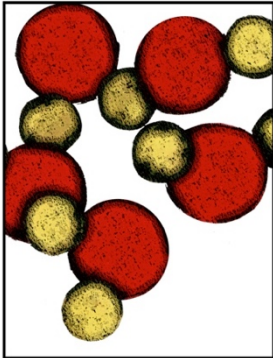
SUCH COORDINATION BETWEEN THE PETROLEUM PLANTS AND THE LOCAL POLICE AND FIRE DEPARTMENTS TO COORDINATE EMERGENCY PROCEDURES IS COMMON IN INDUSTRIAL REGIONS.

THIS COOPERATIVE RELATIONSHIP ON THE PART OF LOCAL GOVERNMENT AND INDUSTRY PRESENTS AN OBVIOUS CONFLICT OF INTEREST IN WHICH THE PETRO COMPANIES ARE NOT ONLY THE SOURCE OF POTENTIAL DANGER BUT ALSO THE AGENTS OF REGIONAL SAFETY.

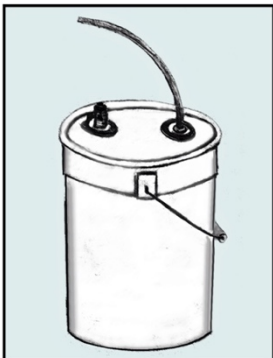
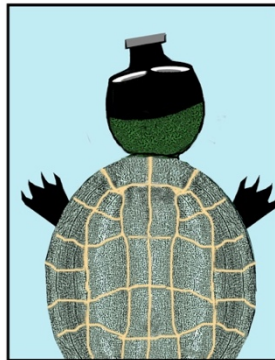


IT IS ALSO IN KEEPING WITH THE SELF-REGULATORY NATURE OF THE BUSINESS, HOW THE PETROCHEMICAL COMPANIES MORE OR LESS POLICE THEMSELVES IN REGARDS TO HOW MUCH POLLUTION THEY PRODUCE AND THE SORTS OF RISKS THEY IMPOSE ON THE LOCAL POPULATION.

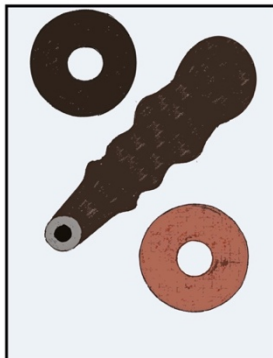




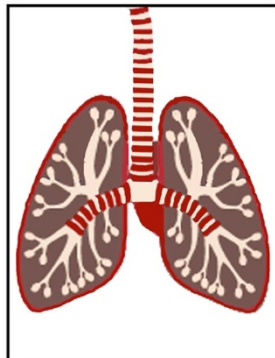
TO COMBAT THIS ENTRENCHED AND TOXIC SYSTEM OF GOVERNANCE, SOME OF THE RESIDENTS OF AAMJIWNAANG HAVE ADOPTED TACTICS THAT CONCRETELY ILLUSTRATE HOW THEIR COMMUNITY IS ROUTINELY POISONED BY THE SURROUNDING PETROLEUM PLANTS.



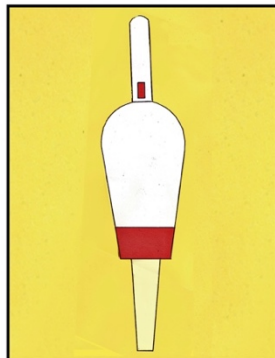
ONE OF THESE STRATEGIES IS THE AIR BUCKET BRIGADE: A FORM OF COMMUNITY VIGILANCE AND CITIZEN SCIENCE THAT SOME OF THE RESIDENTS OF AAMJIWNAANG HAVE TAKEN UP TO DOCUMENT TOXIC EXPOSURE AND TO CHALLENGE THE STANDARD PRACTICES OF THE PETROLEUM COMPANIES IN COURT.

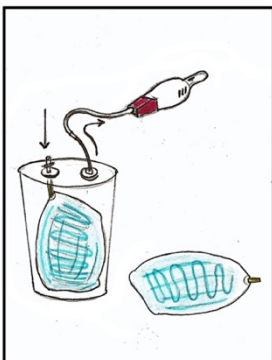


A NUMBER OF AIR BUCKET VIDEOS CAN BE SEEN ON THE WEB. THEY ALL STRESS THE SIMPLICITY AND EMPIRICISM OF THE AIR BUCKET, HOW IT IS A SIMPLE COLLECTION OF COMMONLY MANUFACTURED THINGS (A PLASTIC BUCKET, A PLASTIC HOSE, A PLASTIC BAG, RUBBER WASHERS, METAL VALVES AND SPOUTS, AND A DUST BUSTER).

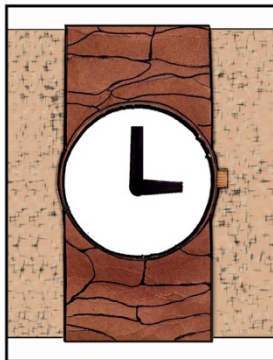
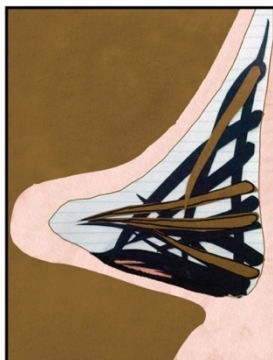


ONE OF THESE VIDEOS FEATURES ADA LOCKRIDGE, A RESIDENT OF AAMJIWNAANG WHO HAS BEEN WORKING IN DEFIANCE OF THE PETRO-CHEMICAL WILL TO POWER FOR MANY YEARS. SHE SHOWS THE DIFFERENT PARTS OF THE BUCKET AND EXPLAINS HOW IT IS USED TO CAPTURE AIR SAMPLES, WHICH ARE THEN SENT TO INDEPENDENT LABS TO BE TESTED FOR TOXINS.



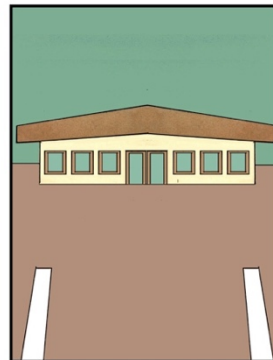


WHAT I LIKE ABOUT ADA IS HER NO-NONSENSE APPROACH. THERE IN A SIMILAR EMPHASIS ON THE PRACTICAL AT WORK IN THE AIR BUCKET AND HOW IT CONVERTS ALL THESE PETROLEUM-BASED ITEMS INTO A TOOL FOR DISSENT.



THE BUCKET CAN ALSO BE UNDERSTOOD AS A SENSORY ORGAN, AS A PLASTIC BRICOLAGE OF A NOSE AND LUNGS. IN OTHER WORDS, IT IS AN ASSEMBLED BREATHING APPARATUS, ONE THAT WORKS TO COMBAT THE POLLUTANTS IN THE AIR AND THE PETROCHEMICAL INDUSTRY.

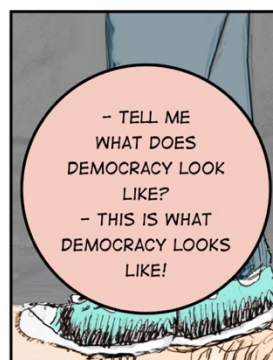
THE RESIDENTS OF AAMJIWNAANG ALSO HOLD REGULAR TOXIC TOURS IN WHICH THEY INVITE OUTSIDERS INTO THEIR COMMUNITY TO BEAR WITNESS TO THE SUBTLE AND NOT SO SUBTLE WAYS AAMJIWNAANG IS BEING POISONED.



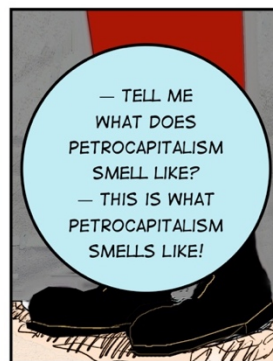
MUCH OF THE IMAGERY FOR THIS CHAPTER WAS GENERATED FROM A TOXIC TOUR THAT I WENT ON IN THE FALL OF 2013, WHICH WAS LED BY TWO YOUNG SISTERS, VANESSA AND LINDSAY GRAY.



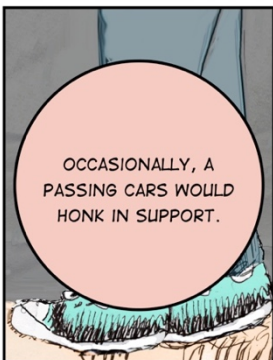
AS WE WALKED ALONGSIDE THE RIVERSIDE PARKWAY, WE IMPROVISED SOME OF OUR CALL AND RESPONSE PROTEST CHANTS:



— TELL ME WHAT DOES DEMOCRACY LOOK LIKE?
— THIS IS WHAT DEMOCRACY LOOKS LIKE!



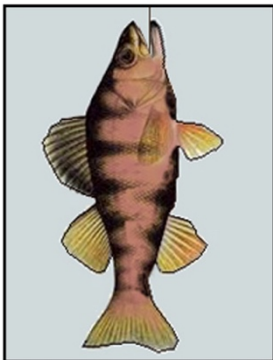
— TELL ME WHAT DOES PETROCAPITALISM SMELL LIKE?
— THIS IS WHAT PETROCAPITALISM SMELLS LIKE!



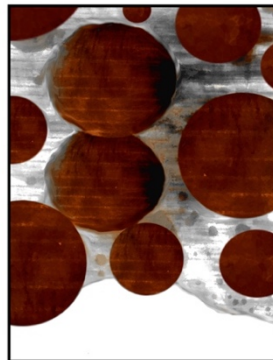
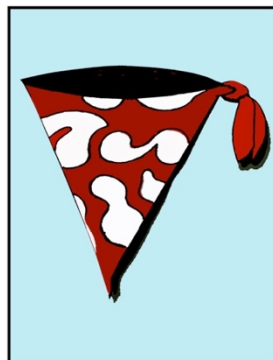
OCCASIONALLY, A
PASSING CARS WOULD
HONK IN SUPPORT.



AT DIFFERENT POINTS ON
OUR TOUR, THE GRAY
SISTERS RECOUNTED
STORIES OF SPILLS AND
EVACUATIONS AND
POINTED OUT HOW
AAMJIWAANG SUFFERS A
SIGNIFICANTLY HIGH
PERCENTAGE OF
BREATHING ILLNESSES AND
CANCER FATALITIES.



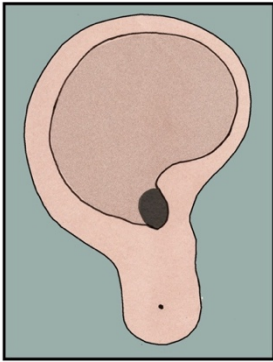
THE SISTERS ALSO SPOKE
ABOUT TOXINS BEING
LINKED TO ENDOCRINE
DISRUPTORS AND THAT
AAMJIWNAANG HAS SEEN
A NOTICEABLE DECLINE IN
THE NUMBER OF MALE
BIRTHS. THEY STRESSED
HOW THIS DECLINE HAS
RAISED FEARS ABOUT THE
FUTURE OF THE
COMMUNITY.



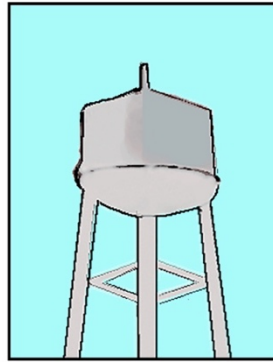
NEAR THE END OF THE TOUR WE STOPPED AT THE
ENTRANCE OF THE COMMUNITY CEMETERY SO WE
COULD SEE FOR OURSELVES HOW IT IS IMPINGED ON
ALL SIDES BY GIANT STORAGE TANKS, PIPELINES,
RAILROAD TRACKS, AND CONSTRUCTION VEHICLES.



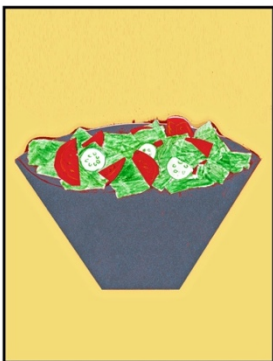
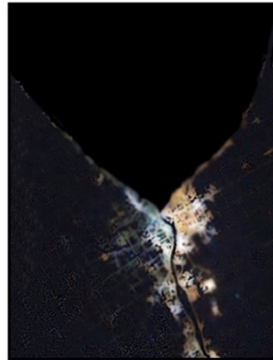
AS WE STOOD AS A GROUP OUTSIDE THE CEMETERY
GATES, THE SISTERS WERE FORCED TO SHOUT OVER
THE SOUNDS OF TRUCKS AND THE PERSISTENT HUM
OF THE PLANTS, WHICH ADDED TO THEIR
FRUSTRATION AND INDIGNATION.



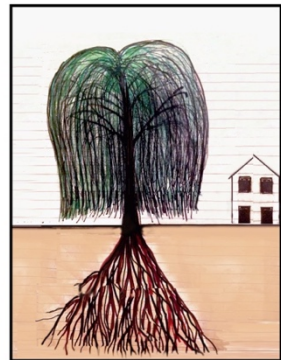
VANESSA AND LINDSNEY ALSO TEMPERED THE ANGER AND ANXIETY INVOKED DURING THE TOUR BY REPEATING THE MESSAGE THAT MUCH OF THE REGION IS COVERED WITH WOODS AND LUSH FARMLAND, AND THAT THEY BOTH HAVE FOND MEMORIES OF CAMPING AND FISHING ON THE RESERVE AND SWIMMING AT THE BEACHES THAT HUG LAKE HURON.



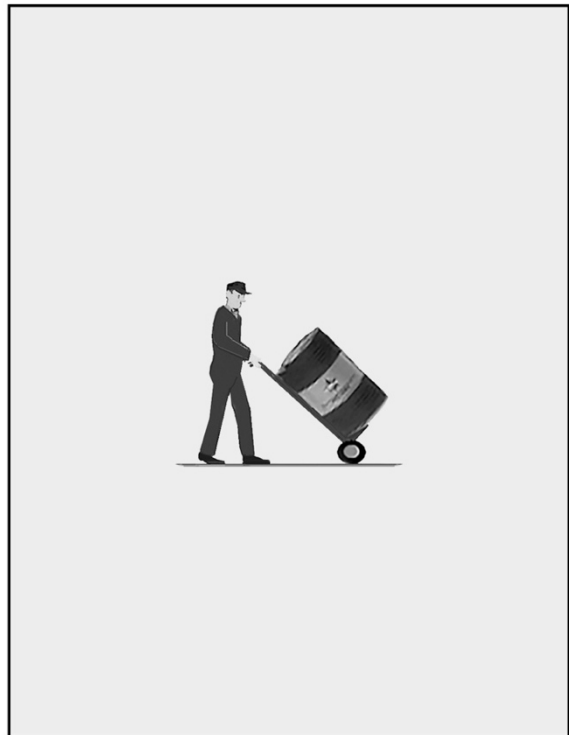
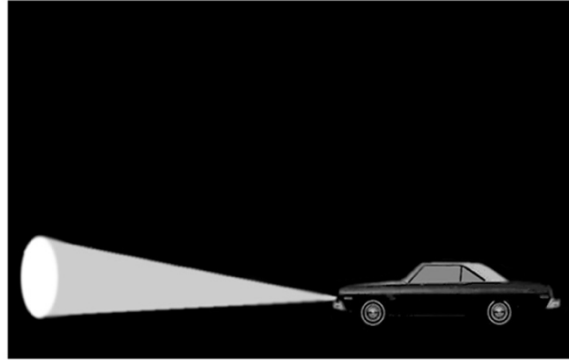
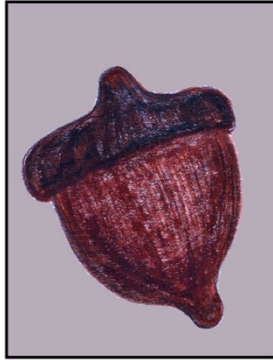
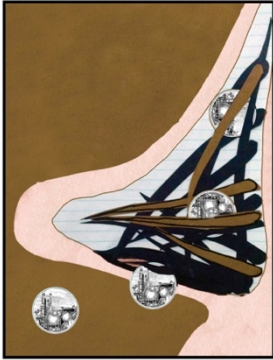
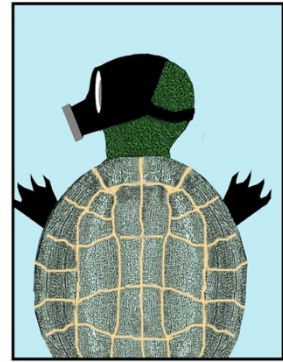
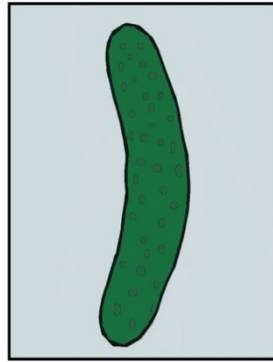
VANESSA ALSO STATED THAT ALTHOUGH SHE CURRENTLY LIVES IN PETERBOROUGH, WHERE SHE IS A STUDENT AT TRENT UNIVERSITY, SHE WILL ALWAYS CONSIDER AAMJIWNAANG HOME.



THE TOUR ENDED ON THIS COMBINED NOTE OF HOME, PRIDE, AND HOSPITALITY, AS WE WERE ALL INVITED BACK TO THE COMMUNITY CENTRE FOR A COMMUNAL MEAL, A TASTY SPAGHETTI DINNER.



THIS IS WHERE THE TALE OF THE SARNIA NOSE ENDS: WITH THIS COMMUNAL MEAL AND AN ETHICS OF ECOLOGICAL CARE IN MY MIND AND STOMACH AS I WALK ALONG THE RIVERSIDE PARKWAY BACK TO MY MOM'S HOUSE.



Chapter 5: In Pursuit of a Regional Sensorium

Sarnia-Lambton, with its vast network of petrochemical and refining complexes, is internationally known as a significant industrial chemical centre.... Sarnia-Lambton has an enviable quality of life unmatched by most regions of Canada. With a population of nearly 89,000, the Greater Sarnia Area is large enough to provide the amenities of a city without the problems of a major metropolitan centre. Residential areas are attractive and affordable. Schools and public facilities of all kinds are excellent. Traffic problems are nonexistent. Its location on the shores of Lake Huron and the St. Clair River provides many and varied recreational opportunities... Sarnia-Lambton, an excellent place to do business; a superb place to live while doing it!

—Sarnia-Lambton Economic Partnership

In 2006, The Aamjiwnaang Environment Committee interviewed Aamjiwnaang band members about pollution in the area. Members of the reserve identified releases of chemicals and incidents such as spills as their primary concerns. In addition, these chemicals and related incidents have significant impacts on their cultural life, including hunting, fishing, medicine gathering and ceremonial activities. Health impacts included asthma, reproductive effects, learning disabilities and cancer. The most common reported impact was fear. People on the reserve feared the outdoors, the warning sirens, and unreported incidences.

—Ecojustice

How do we reconcile these two regional vignettes from two different “non-profit” organizations with conflicting messages and mandates? The Sarnia-Lambton Economic Partnership (SLEP) is one of a number of similar-sounding alliances registered in the area to facilitate cooperation between regional businesses and various municipal agencies to insure the status quo and the smooth flow of crude oil, petrochemical feedstocks, and capital. The above quotation is from an 18-page glossy brochure that SLEP produced in 2013, *Sarnia-Lambton’s Petrochemical and Refining Complex*. The document is helpful in identifying some of the main actors who make up the region’s petrochemical industrial complex. There is also an emphasis in the publication on

“new, exciting technologies” that engage in waste management by employing microbes and what the publication refers to as “biohybrid chemistry manufacturing.”



Figure 22: Three Competing Guides to Chemical Valley (produced by the petrochemical industry, the tourist industry, and an environmental justice organization)

The second epigraph is from a 30-page report, *Exposing Canada's Chemical Valley* (2007). Like the brochure produced by SLEP, Ecojustice's report is intentionally designed to read as a magazine or (tourist) guide, with glossy photos and “easy to read” tables and bulleted facts. In the petro-economics of late capitalism, or what Henry Gixoux refers to as the inherently cruel culture of “casino capitalism” (2014), non-profit groups like Ecojustice serve as the inconvenient voice of political conscience/consciousness.²¹ In many ways, these two brochures highlight how the public contest between the interests and designs of petrochemistry and environmental justice is a contest of factsheets, pamphlets, brochures, dramatic photographs, and website mission statements, forms that traffic in qualitative and quantitative truths, marshaled and

²¹ Like numerous border towns, Sarnia has a casino: Casino Point Edward, which is part of a chain of casinos owned and operated by the province as the OLG (Ontario Lottery and Gaming Corporation). The fact that many of the casinos or “slots bars” are located in border towns like Sarnia and Windsor, which have high rates of unemployment, emphasizes the cruel and manipulative forms of “public care” that have become synonymous with neoliberal governance.

displayed as self-evident reasons to both curb and increase industrial emissions. In many ways, this is a continuous end game of consultation, compliance, emissions modeling, “controlled spills,” and carbon trading, with a very entrenched set of winners and losers.

Government agencies at different levels—federal, provincial, regional, municipal—have outsourced most of the jobs of regulation and public accountability to these two opposing camps, which both speak a similar language of thresholds and impacts but from opposing sides of ledgers and fence lines. These opposing sides draw us into a debate charged with sentiment. How can a person remain unmoved by the evident disparities of the region’s petrochemical economy, knowing that not everyone shares the same “enviable quality of life” or the same health risks? How does one go about balancing these two competing lists, with affordable housing, good schools, and the lack of urban traffic on one side of the scale, and chemical spills, the loss of hunting and fishing, and high rates of asthma, birth defects, learning disabilities, and cancers on the other side? Is it possible to remain unmoved and callous knowing that the region is divided into two sets of people: (1) those who receive the majority of rewards of petrochemistry; and (2) those who suffer the majority of the health risks and lethal consequences of petrochemistry? Is it possible to acknowledge or bear witness to this disparity and inequality and simultaneously be able to put it out of our minds? How do we review this material and not become thoroughly depressed, cynical, and angry? How does this petrochemistry make us feel? How does it literally and figuratively get under our skin?

The above inserted panel of contrasting regional guides also includes *Navigate to Great Times in Lambton County*. I rely on this 2014 tourist brochure, produced by a local non-profit organization (Tourism Sarnia-Lambton), for its mapping and descriptions of “important” regional sites/sights, as well as to show how large Lambton County is and how in the communal or public imagination the petroleum plants of Chemical Valley compete with pastoral farmland, large tracts of woodlands, and the white sandy beaches and parks that hug Lake Huron. This purchase on the “great outdoors” is what appeals to many of the local residents (including many of the residents of Aamjiwnaang) and convinces them that this is the best place to live and raise a family. The fact that tourism and outdoor recreation are a central characteristic of the county and constitute an important source of regional employment and revenue, helps offset the

realities/consequences of Chemical Valley, so that many local people look past (or at least learn to live with) the polluting smokestacks and the long record of accidental and “controlled” toxic spills. The local emphasis on tourism and outdoor recreation also makes for unusual juxtapositions, such as sports fishermen regularly catching and photographing mutant fish, and pleasure cruisers and historic tall ships docked alongside huge oil tankers.

In this chapter, I return to Sarnia, to my mom’s house, to Chemical Valle, to Aamjiwnaang, and to the petro-politics that floats in the air and local watershed. There is so much more to archive and map.²² One of the primary things I want to grapple with and map in terms of a regional sensorium is whiteness. More specifically, I want to grapple with the whiteness of oil, the whiteness that is fashioned and secured by the flow of oil and capital, the whiteness that envelops Chemical Valley and much of the globe. I know that this claim of grappling with whiteness sounds grandiose and I fear that what I offer as evidence of the whiteness that envelops Chemical Valley is limited and anecdotal. The fear of referencing such a grand narrative and not giving it the necessary space or attention that it demands holds me back. But I need to push this anxiety aside and proceed with the set task, as I can’t imagine writing about Chemical Valley and not continuously coming back to Aamjiwnaang and the politics of whiteness. As a self-

²² I should perhaps clarify that Sarnia was never my home. Much of my childhood was spent in the suburbs of Toronto and I left home at 17 when my parents split up. Since then I have lived fairly estranged from my family. This estrangement has both softened and intensified throughout years and settled into the pattern in which I gain a certain comfort in being the odd man out: the gay uncle, the PhD student, the artist. In others words, whenever I visit either of my parents or my siblings’ families, there is a certain pleasure—usually experienced on the bus or train back to my apartment—in always remaining something of an exile. This feeling of *being from away* when I visit my family has both dogged and comforted me since childhood. While it has made me feel lonely, it has also functioned like a fragmented plot or backstory for a life elsewhere, a life that awaited and eluded me (and in certain ways continues to elude me) and helped explain why I was passionate about classical Hollywood cinema and detective fiction rather than hockey and girls.

declared cosmopolitical map maker, I need to give whiteness more specific details, showing how it is essential to the production of oil and the flow of capital, and how it contributes to the mixture of common but conflicting feelings that people living in the region experience and draw from to fashion their identities.

My aim in returning to Sarnia and Canada's Chemical Valley—one of the biggest concentrations of oil refineries and petrochemical production plants in North America—is to further map the competing public sentiments and the ambient politics that are embodied and acted on by people living in the region. What, we could ask, are the imposed limitations and social codes that float in the air and are breathed in and incorporated into the flesh of daily practice? How do these ambient and trafficked thoughts both inform and reflect everyday life in Chemical Valley and the county as a whole? Using the tourist guide as a model, this chapter is written as a series of vignettes that focus on different geographic points of interests and sources of political strife. The principal strategy: to use an assortment of regional texts and images to assemble a scathing critique of neoliberal capitalism. The resulting map details some of the agential politics that facilitate the combined flows of crude oil, refined chemical feedstocks, capital, pollution, and elevated levels of illness. Rather than follow a progressive narrative arc, the chapter moves in a circular fashion. Geographically, the chapter covers a triangular area, the three points being my mom's house, Aamjiwnaang, and Oil Springs (the so-called "birthplace of petroleum in North America" and the home of the Canada Oil Museum).

Much of the material I have utilized to construct this chapter falls under the general heading of regional boosterism. Promotional material gathered from the websites of the region's petrochemical companies has proven to be especially effective and affective because many of its messages of regional pride, success, and happiness have been severely undermined by the passage of time and by a significant decline in the region's economy and population. For many people living in Sarnia, such boosterism reinforces the idea that they arrived too late to the party and missed out on the golden years of petrochemistry. While in the 1950s, 1960s and 1970s, Sarnia could boast that it enjoyed one of the highest standards of living in North America, today it struggles with an economic downturn that has turned much of its downtown into a proverbial ghost town. My intention was to turn this regional boosterism on its head, not to disparage the

region's geography, culture, or population, but to foreground the harm petrocapitalism has perpetuated in the name of economic health.

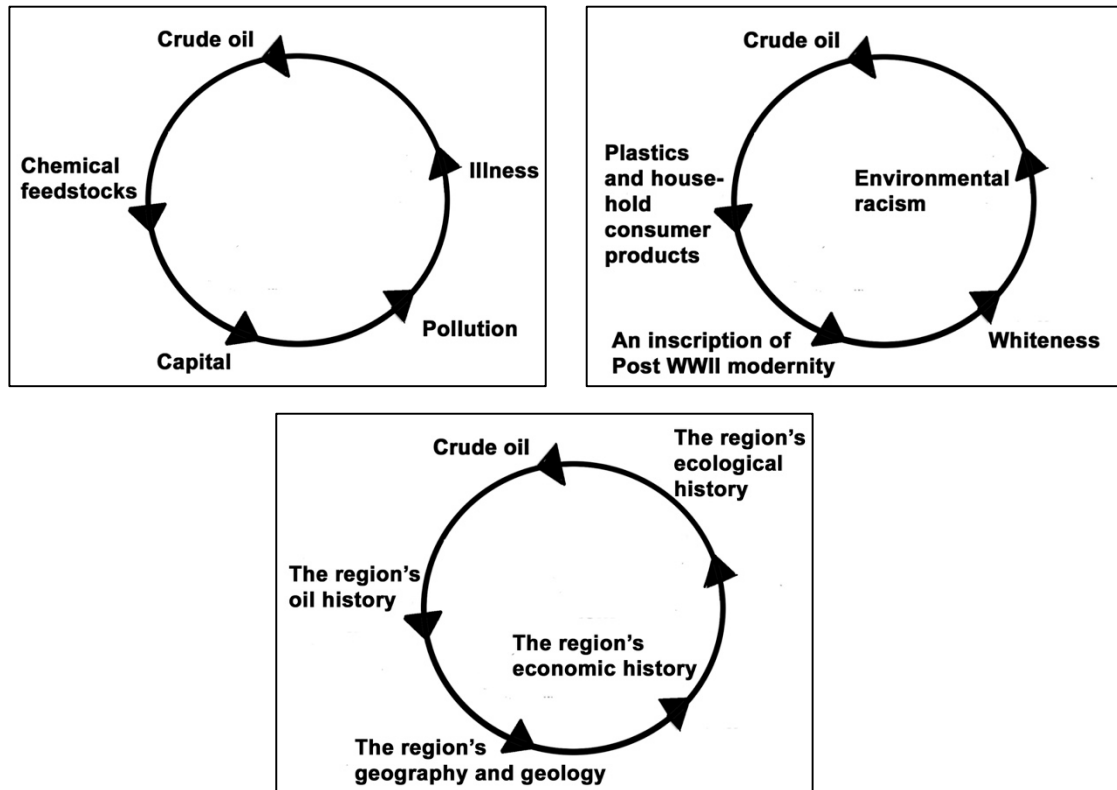


Figure 23: Three schemas of the agential fields of intra-action in Chemical Valley

As a way to focus and animate some of the region's tacit and entrenched beliefs, as well as shared desires and anxieties, I borrowed my mom's car and for much of the summer and winter months (when I wasn't tied to my TA-ship at York). I went on day trips, which involved sitting in coffee shops and plant parking lots scribbling notes, taking snapshots, and collecting tourist guides, postcards, and industry promotional material. I also made the 10-minute drive from my mom's house to Aamjiwnaang several times. On the whole, these day trips were a fairly lonely experience, as I played the part of the ethnographer, what Mary Douglas calls "an agnostic sightseer" (Douglas 1966: 2), making a point to stop in at "family restaurants" for lunch and wandering about by myself in roadside county museums (often in the humid-sticky heat and the bitter-frigid cold). The above schematic diagrams were used as basic outlines, but not all these

themes or subject areas were pursued to the same degree, as the point was to drift about in my mom's car and more or less let the assemblage take an organic shape.

My own Gripping Sense of Loss

Before mapping the pressing sentiments of Chemical Valley, I need to address a personal loss. In the course of researching and writing this chapter my stepfather Jim suffered a heart attack and died. I reference Jim in the previous chapter and allude to his absence but I wasn't sure if this material was appropriate for my dissertation. Initially I thought it would be best to keep Jim's death out of my stories of Sarnia, as I did not want to either intrude on or showcase my mom's grief. My hesitation to include Jim's death, my mom's heartbreaking sorrow, and my own sense of loss, were in part a product of the Protestant stoicism that I associate with the four sides of my family (both my parents remarried so I have a mom, dad, step-dad, and step-mom), in which emotions are for the most part treated like a family secret, scandal, or bank account: something you should never discuss in public. But I soon realized that I could not keep my mom's grief out of this chapter and that any imposed silence would make very little sense. I had been engaged in the process of researching Chemical Valley for a considerable time and had outlined to both Jim and my mom what I was doing and how I wanted to reference life in the region. How could I invoke a regional sensorium and not acknowledge Jim's death? How could I approach this chapter as a map of public sentiments and not acknowledge what my mom has been going through or my own pain? With my mom's consent, I favoured on the side of disclosure, as I believe that it would be disrespectful and dishonest to proceed otherwise.

Following Jim's death, my subsequent trips to Sarnia were a mixture of trying to comfort my mom, and also an excuse to do further research. My research became a vehicle, giving my mom and me something else to talk about, and giving me an excuse to get out of the house on a regular basis so my mom and I wouldn't fall out. It also provided my mom something to vent about so that many of our conversations about the petrochemical plants ended with a choleric declaration:

—I've always hated this town.

—I only stayed here because Jim liked it.

—Your brother’s kids are always sick, they’ve always getting colds and having breathing problems. I want to tell him that they should move away, to get the kids out of here, but they have their lives here, and he wouldn’t hear that.

—I can’t stand it here. I always said that the chemicals would do us all in.

—This town is covered in dog shit. You can’t go for a walk without stepping in it.

But my mom also has a tenacious sense of humour and likes to flip things on their heads:

—This town is overrun with grieving widows. It’s too bad Jim had to die before I could break into this circle of closely-knit friends, friends who are going through the same thing.

—At the dances the widows far outnumber the widowers, so there are 10 women for every guy. And all the guys know it and strut about like roosters in the hen house. But that’s okay, the ladies make better dance partners. If only I were a lesbian.

I have inherited a cynical tongue from my mother, and it along with some of her hurt, resentment, and self-deprecating humour, are expressed in this chapter.

“How does petrocapitalism make you feel?”

[Hegemony] is a whole body of practices and expectations, over the whole of living: our senses and assignments of energy, our shaping perceptions of ourselves and our world. It is a lived system of meaning and values.

—Raymond Williams

Depression is another manifestation of forms of biopower that produce life and death not only by targeting populations for overt destruction, whether through incarceration, war, or poverty, but also more insidiously by making people feel small, worthless, hopeless.

—Ann Cvetkovich

As your grandfather would always say, “There are two things people never tire doing: bragging and complaining. Which are you doing?”

—Shirley Scullion (my mom)

Depression, cynicism, anger, as well as bragging and complaining, are all essential to the negative dialectics that I have assembled and used to map the regional sensorium of Chemical Valley.

From my initial notes and research, I knew that the chapter would be exceedingly melancholic in tone and populated by many ghosts. I quickly felt compelled to address an overwhelming sadness that saturates the air in the region. In addition to the cultural studies of Raymond Williams, my emotional mapping is guided by the work of the collective “Public Feelings,” a loose collection of queer cultural critics who have aligned to address the normative and anti-normative politics of feelings, how our emotions and anxieties can work as extremely effective way to socialize people and reinforce norms but can also be vehicles of public dissensus. In her 2012 publication, *Depression: A Public Feeling*, Ann Cvetkovich sketches some of the tactics she and other members of Public Feelings have used to archive public feelings: “In the methodological spirit of cultural studies, Public Feelings takes up *depression* as a keyword in order to describe the affective dimensions of ordinary life in the present moment. Such an investigation emerges from the important traditions of describing *how capitalism feels*, but it also puts pressure on those left-progressive projects not to rush metacommentary” (11, emphases in original). For Cvetkovich, depression is a keyword in the socializing sense that Williams attributes to certain words that (in)form the contours of everyday life and function as “structures of feeling” (Williams 1977: 128). There is an imposed structure of feeling that hangs over Chemical Valley, a structure built into its techno-landscape of smoke stacks, venting towers, giant storage tanks, and silver piping. People move through this built structure of feeling on a daily basis, so the various feelings they experience seem to emerge as a product of common sense, as if the air were speaking to them: “That’s just the way things are Peter and we really can’t do anything to change it.”

As I outline in Chapter 1, Walter Benjamin invoked the ghosts or phantasmagoria (shadow theatre) of capitalism as a way to map the Paris Arcades of the nineteenth century. His goal was to create counter-memories, a way of reconfiguring the recent past by adopting a fragmented and modular writing practice. This practice saw him assembling or montaging thematic vignettes, populated with allegorical figures and weighted aphorisms. Similarly, I employ a version of Benjamin’s method of rag picking in this chapter to invoke the phantasmagoria of Chemical Valley. Benjamin buries a description of his rag picking writing practice deep in the pages of his *Arcades Project*: “Method of this project: literary montage. I need say nothing. Only exhibit (*zeigen*). I won’t filch anything of value or appropriate any ingenious turns of phrase. Only the

trivia, the trash—which I don’t want to inventory, but simply allow to come into its own in the only way possible: by putting it to use” (1999: 460). While Benjamin refers to his method as trash collecting, he does not limit himself in terms of who and what he filches, mixing both high and low cultural sources. Putting high and low culture into the same dialectical conversation is important to his goal of putting the phantasmagoria of capital to work, to have it speak its own proper name. For my purposes, the competing voices I invoke to put the phantasmagoria of Chemical Valley to work—with the goal of producing counter memories particular to petroculturalism—are primarily those of the petrochemical and tourist industries, alongside the voices of environmental justice and local forms of environmental activism.

In the spirit of Benjamin, I pursue a fragmented and gritty counterhistory of Chemical Valley, a nonlinear and anecdotal version that refutes the ruling convention that reads history as one long story of social progress so that all the world’s events (major and minor) more or less unfold as if they were being pulled along by a steady current that sweeps up and washes over everything, attempting to incorporate all of the living and the dead into a grand narrative of civilization. History, for Benjamin, is never limited to the past. One cannot bury history or contain it to an archaic and dusty discipline, to file it away as all that stuff that no longer matters.

In *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*, Susan Buck-Morss makes the point that Benjamin saw his dialectical treatment of history “as a project in *Geschichtsphilosophie*. Translated, the term is imprecise. The German language allows for a montage of two concepts (*Geschichts/Philosophie*; *Natur/Geschichte*) without stipulating the semantic nature of their connection, but in this case English is more fastidious” (1991: 55). English imposes a schism so that *Geschichtsphilosophie* is either translated as “philosophy of history” or “historical philosophy” but, as Buck-Morss argues, neither of these translations allows for the active or dialectical version of history that Benjamin pursued. “Both ideas miss Benjamin’s point, which was to construct, not a philosophy of history, but philosophy out of history, or (this amounts to the same thing) to reconstruct historical material as philosophy—indeed, ‘philosophical history’ might be a less misleading nomenclature” (55; emphases in original). In Benjamin’s dialectics, the end goal isn’t simply to speculate on history, or historicize philosophy. While these attributes of his writing are both important, they are more or less tactics in setting

things in motion, setting historical things and affects (unresolved things or feelings) in motion. Benjamin is definitely interested in “bringing history alive” but not in a tame or fossilized fashion, as something we can control and sequester to amusement parks, historical re-enactment societies, or historically accurate films. While his dialectical treatment of history works to animate history, giving it specific fleshy bodies, he is not interested in giving the past a concrete or fixed shape. Instead, he favours an erratic history, and thus invokes the past as a ghost, as something that is both dead and alive simultaneously, a noncompliant haunting that doesn’t always make itself known to the same degree or by following a formula or set pattern.

In his “Theses on the Philosophy of History” (1947), a short collection of aphorisms, Benjamin famously references Paul Klee’s cartoonish angel, *Angelus Novus* (1920). For Benjamin, the Klee monoprint (for a short period Benjamin owned one of the original prints) represents a heroic male figure, the Angel of History. He describes the figure as an allegorical time traveller whose job is to be forever vigilant in how he sees and questions the passing of history:

Angelus Novus shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress. (1968: 29)

In this cautionary tale of the tremendous power that is embodied in overlapping concepts of history, progress, and paradise, the angel is offered as a role model for historians. While the job of the historian-critic is ideally to keep watch and sound the alarm when he witnesses the eternal return of a seemingly reckless and catastrophic blind will, he is also only human and, as such, he too is subject to the force of these persuasive winds and can easily be swept up in the violence.

He is not simply an observer of history. Instead, he is both an active subject and an enrolled object of history.

A Short Note on the Chemistry of Whiteness

Advocates railing against chronic pollution and contamination are increasingly identifying with and being inspired by the environmental justice movement. A central focus is the notion of "disproportionate burdens"—the claim that while pollution is everywhere, it is most readily found in a few choice places, particularly those inhabited by the poor, the racialized, and the marginalized.

—Dayna Scott

Undertaken in what are colloquially referred to as “crackers,” the development of cracking technologies both increased the scale of operations and intensified the centralization and concentration of capital in the refining sector.

—Matthew Huber

You are killing my generation... The tar sands are environmental racism. I have a right to clean air and fresh water. If you think money is more important then there is something really fucked up here.

—Vanessa Gray

A taste and scent of the county: If one of your passions is enjoying fresh food and savouring locally grown meat and produce, Lambton truly offers a treasure trove. Looking for fresh pheasant, asparagus, organically grown fruit, vegetables and spices? It’s all here... Specialty shops even offer rabbit, buffalo, elk, venison, and goat. Pick your own raspberries, strawberries, gooseberries, or red and black currants. There’s maple syrup, jams and jellies, and free-range eggs to grace your table.

—Tourism Sarnia-Lambton

What does petrocapiatalism look like? How does it taste and smell? How does it enter the lives and bodies of people living in the region? How are its material and psychic properties both absorbed and rejected? What sorts of emotions and anxieties do petroleum and petrocapiatalism

inspire? In asking this stream of questions and evoking a regional sensorium in Chemical Valley, it is important to foreground Aamjiwnaang, to point out that this Chippewa First Nation of approximately 850 people is literally surrounded by the oil refineries and production plants that comprise Chemical Valley. This proximity is such that some homes sit just behind the chain link fences of the petrochemical plants and within full view of their labyrinthine piping and flaming venting towers. As resident and activist Vanessa Grey declared in protest at a petroleum industry conference held in Sarnia, “something is really fucked up here.”²³ Many of the residents suffer asthma and there has been a high number of cancer fatalities.²⁴ And as I argued in the previous chapter, the residents of Aamjiwnaang also live in a constant state of fear, worried that the emergency sirens will go off and disaster will follow.²⁵ By living so close to these facilities, it is difficult not to see the people of Aamjiwnaang as unwilling test subjects, exposed to airborne

²³ As quoted in Toban Black’s essay “Petro-Chemical Legacies and Tar Sands Frontiers.”

²⁴ The health of the residents of Aamjiwnaang is documented as a series of percentages and columned tables in *Biomarkers of Chemical Exposure at Aamjiwnaang*. This report is based on a study conducted by the University of Michigan School of Public Health in conjunction with the Aamjiwnaang Environmental Office, which found high concentrations of polycyclic aromatic hydrocarbons (PAH), perfluorinated chemicals (PFC), brominated flame retardants (BFR), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), cadmium, and mercury in the blood and bones of mothers and children living on the reserve (Nil Basu and Diana Cryderman 2013: 2-12).

²⁵ The notion that Aamjiwnaang is governed as a sacrifice zone that is subjected to a constant state of emergency is the main argument of Sarah Wiebe’s PhD dissertation, *Anatomy of Place: Ecological Citizenship in Canada’s Chemical Valley* (2013). This ethnography of Aamjiwnaang was very helpful in providing first-person testimony of life on the reserve. Similarly, Christianne Stephens’ PhD dissertation, *Toxic Talk at Walpole Island First Nation: Narratives of Pollution, Loss and Resistance*, provides first-person accounts of life on Walpole Island. Both dissertations also provide invaluable information about chemical spills and the politics of indifference/difference that these two First Nations communities have suffered.

emissions and regularly occurring spills. Both Vanessa Gray and her sister, Lindsay, made this point during the toxic tour that I went on: “We are treated like lab rats, exposed to toxic chemicals, poisons that cause cancer, asthma, and have made it so we’re scared just to go outside.” It is impossible to separate the fact that Aamjiwnaang and these petrochemical plants are adjacent to one another from Canada’s larger colonial history. It is impossible to reference Vanessa’s anger, frustration, and activism and not point to the history of injustices that First Nations people have suffered at the hands of Canadian industries and government agencies. How else are we to view this proximity? How is it not part of a tradition of institutional colonialism, dispossession, and racism? How is it not just another example of the willingness on the part of Canadian governments—and by extension the general population—to sacrifice the lives of First Nations people to secure the smooth operations of capitalism? And what does this apparent disregard mean for the people of Aamjiwnaang? What does it mean to live in such a precarious setting, a sacrifice zone?

In an effort to propel this chapter forward, I posit this broad but vital claim: Oil power and white power are inherently linked. Whiteness fuels the extraction and refining of petroleum and, in turn, petroleum fuels whiteness. My objective is to enrich and contextualize this broad claim by giving it specific historical details, details drawn from the history of oil development in the Lambton region, a history that reveals how oil development and entrenched forms of white settler colonialism were and are thoroughly entangled. After rehearsing some of this history, my focus shifts to a series of print ads produced by Dow Canada in the 1950s and 60s to promote their line of new chemical products (plastics, polymers, latex, styrene, and StyrofoamTM). As I will show in greater detail below, these ads represented Dow’s new range of chemical products as distinctly modern, innovations that would dramatically improve the lives of the targeted audience: white suburban families. By stressing such things as convenience and advances in technology, these ads (and the line of new chemical products they promoted) provided a form of self-fashioning that allowed certain people living in Sarnia and elsewhere in Canada to mark themselves as both modern and white.

Again, the aim of this chapter is fairly broad: to give particular details to the agential field that connects the region’s history of white settler colonialism, its history of oil development, the

manufacturing of petrochemicals, the slow poisoning and violence imposed on Aamjiwnaang, and a series of print ads produced by Dow Canada. In turn, by focusing on these ads, I hope to reveal some of the specific ways whiteness has shaped life in Lambton County, functioning as a socializing and racializing principle that is forever present but not directly acknowledged. To quote Richard Dyer: “Racial imagery is central to the organization of the modern world” (Dyer 1997: 1). While the cultural influence of racial stereotypes has received critical attention, the conjoined act of representing and fabricating whiteness has lacked scrutiny, which further reinforces whiteness’s tacit existence. Drawing examples from popular culture, Dyer provides a helpful definition of whiteness, one that stresses the silence afforded whiteness: how it is given continual expression in popular culture but not directly spoken of as a distinct and exclusive culture. In turn, this tacit ubiquity affords white people a tremendous sense of authority and privilege, as white culture assumes the place of normalcy, of culture in general:

Research – into books, museums, the press, advertising, films, television, software – repeatedly shows that in Western representation whites are overwhelming and disproportionately predominant, have the central and elaborated roles, and above all are placed as the norm, the ordinary, the standard. Whites are everywhere in representation. Yet precisely because of this and their placing as norm they seem not to be represented to themselves *as white* but as people who are variously gendered, classed, sexualized and abled. At the level of racial representation, in other words, whites are not of a certain race, they’re just the human race. (1997: 3; italics in original)

Central to whiteness’s grasp on life is the idea that it maintains much of its authority in silence. While fascist declarations of white power have certainly been loudly and clearly expressed, the silent authority of whiteness—its tacit or silent inscription—is for the most part something that is assumed/performed/embodied by white people without much thought.

Referencing Franz Fanon and his phenomenology of whiteness and colonialism, Sara Ahmed also describes whiteness as an assumed and dominant position from which all things—phenomena, ideas, people—are generally assessed and attributed with valued. Like Fanon, Ahmed underscores how the inscription and performance of whiteness marks people of colour as people of colour, as *non-white*. “If the world is made white,” she states, “then the body at

home is one that can inhabit whiteness. As Fanon's work shows, after all, bodies are shaped by histories of colonialism, which makes the world "white" as a world that is inherited or already given. This is the familiar world, the world of whiteness, as a world we know implicitly" (2006: 111). Ahmed also provides an account of her experience as a person of mixed race, of never feeling completely comfortable or at home in her own skin. "When I remember walking down the street between my parents, *I did not always feel between them*. I felt on one side more than the other. I wanted to be on the side of my mother; indeed, my desire *put me on her side*. This was not a moment of gender identification in the sense that it was not about wanting to be a girl. Rather, it was about wanting to be seen as white and not have my father present, insofar as 'his body' threatened my desire for whiteness" (145; italics in original). Ahmed's feelings of alienation, shame, and discomfort reveal something of the caustic nature of whiteness: how it very much gets under the skin, affording white people with an unquestioned sense of belonging and marking people of colour as the cultural Other-outsider, forever foreign, strange, different.²⁶

A Geography of Salt, Water, and Oil

In order to map the grip of whiteness of Chemical Valley, how it contributes to a regional sensorium, I need to provide some more general information about the region, addressing some of the geographic and historical factors that brought Imperial Oil, Shell, Dow Chemicals, Suncor,

²⁶ Ahmed also ties these feelings of failure, this sense of a performance or embodiment gone awry, to her identity as a lesbian and how homosexuality and feelings of queerness manifest as failed heterosexuality. Again by referring to her own experience she details how her identity as a lesbian is always viewed and fashioned through the lens or matrix of patriarchal heterosexuality, which configures the lesbian as someone who fails the demands of propriety, the rules of the proper, the conventional roles of wife, mother, and housekeeper, often in a spectacular and monstrous fashion. Judith/Jack Halberstam similarly charts a gay and lesbian aesthetic, style, and sensibility as a queer art of failure. This is a theme they have pursued in a number of publications, including *Skin Shows: Gothic Horror and the Technology of Monsters* (1995) and *The Queer Art of Failure* (2011).

NOVA Chemicals, Bayer AG, and Enbridge—the recognized goliaths of energy and synthetic chemistry—to the area. There are three geographic features that help explain why these petrochemical companies chose Lambton County and the inconspicuous border town of Sarnia as the base of their operations: (1) Much of region sits on huge, subterranean deposits of salt, giving these companies a seemingly endless cheap supply of salt/sodium, an essential chemical in (petro) chemistry; (2) the St. Clair River serves an essential link in the Great Lakes system and the flow of petroleum to North American markets; and (3) the first major discovery of oil in North America and the first oil boom did not happen in Texas or Alberta but in southwestern Ontario (approximately 30 kilometres from Sarnia), giving rise to a small collection of rival towns, all bidding to be recognized as the place of petro discovery and bonanza: Oil Springs, Oil City, Wyoming, Bothwell, and Petrolia.

With this short list of geographic features and my goal of addressing the whiteness of Chemical Valley, I have a lot of ground to cover. Not only are there connections to be made between different locales (including Aamjiwnaang, my mom’s house, the Canadian Oil Museum in Oil Springs, the buried salt caverns underneath Chemical Valley, and a fenced off playground in Sarnia’s waterfront public park), but I also want to sample a series of advertisements produced by Dow Canada in 1950s and 1960s as a way to address petroleum’s tremendous influence in how modernity has been imagined. I am specifically interested in how petroleum products and their marketing contributed to a dual inscription of modernity and whiteness, and how the promoted idea of a better life through petrochemicals served as a source of a regional civic pride. I also want to show how many of the ideas and values espoused by these archival ads continue to linger on in the region and affect how people view the local petroleum industry. These lingering feelings still inform the politics and aspirations of the region, despite the fact that it has experienced a steady economic decline for the past three decades.

On days that I didn’t go day-tripping, I would often be in the Sarnia branch of the Lambton County Public Library, photocopying newspaper articles to add to my chemical archive. In one of these articles the mayor of Sarnia, Mike Bradley, neatly summarizes how we all participate in a petrochemical economy that affects so many aspects of our lives that it is next to impossible to imagine life otherwise. “If you drove here,” he states, “the gasoline in the car came

probably from Imperial or Suncor. The carbon black in the tires came from Cabot. The plastics more than likely came from one of the plastic manufacturers here. Every day you function with what's made here. It's part of life. You can argue about whether that's the way it should be. But the reality right now is that everything that's made here is critical to Canadians' lifestyle" (quoted in McDiarmid 2014). This notion that consumers are universally implicated in the extraction and refining of crude oil is emphasized by both advocates and critics of the industry. Our thorough integration in the production and consumption of refined oil is the recurring message of petroleum companies. Their television and print ads follow a basic script of familial responsibility in which oil and the pursuit of happiness are tightly interwoven, mangled so that you can't have the one without the other: "Our products are everywhere and are essential to how you structure and enjoy your lives. We don't simply produce the gas for the family car you use to drive your daughter to hockey practice, we also make the tires, the polymers and vinyl of the interior, as well as the plastic and nylon that comprise her hockey equipment and keeps her warm and safe. Her plastic mouth guard, for example, ensures her pretty smile and her laughter" (the commercials and claims made by the petrochemical industry are seldom subtle). I pull off highway and into the Petro Canada station (a division of Suncor). The steeped carbohydrates and proteins of dinosaurs, jungle plants, plankton, and blue-green algae fill the tank.

Oil chemistry is this ghost story of epic proportions: In our engines and distillation towers, we are burning the remains of prehistoric life and in turn releasing refined or concentrated chemicals into the air and waterways that will be present indefinitely and that are detrimental to our health and to the biosphere as a whole. There is also the ghostly persistence of such things as the plastic bag and the Styrofoam cup, which can be understood as contemporary petrochemical dinosaurs that will enjoy an everlasting presence. Petrochemistry is this collapsing of time so that the dead carbon of ancient life is given new life. While much of this petrochemistry is reconstituted as carbon dioxide and contributes to global warming, some of it is transformed and released into the region's air and water as ambient toxic elements like lead,

mercury, asbestos, and synthetic compounds like bisphenol A (BPA), and polychlorinated biphenyl (PCB).²⁷

As Matthew Huber points out in his 2013 book, *Life Blood: Oil, Freedom, and the Forces of Capital*, the focused thermal energy of fossil fuels is what has allowed for the accelerated pace of capitalism:

On the temporal level, fossil fuels (coal, oil, and natural gas) are themselves the biotic *concentration of time*—the product of millions of years of concentrated solar energy, or what Jeffrey Dukes refers to as “buried sunshine.” This temporal concentration of past life produces an enormously dense energy source compared with other short-lived “fuels” such as wood, peat, or other biomass. This very dense source of nonliving—nonmuscular—power allows for the temporal *acceleration* of pace and productivity of production.... The pace and throughput of production can be constant and relentless, allowing for a vast expansion in the material bulk of commodities. (9, italics in original)

Along with fueling the various furnaces, machines, and transportation vehicles necessary to the production and flow of commodities, fossil fuels (primarily petroleum) have supplied the base material for the manufacturing of the majority of things that are commercially manufactured. In other words, most of the things that surround us are petroleum based. To help make this point, Huber details some of the history of “cracking,” which is the industry term for the introduction of a chemical catalyst (often aluminum chloride) into the petroleum refining process so that the strong chains of the hydrocarbon atoms that are found in crude oil will break down at lower

²⁷ In my joint publication and performance series with AA Bronson, *Queer Spirits*, we invoked the link between the ephemeral character of ghost and ambient chemicals by drawing the connection between the periodic table and the Ouija board: “To warm up for the *Invocation* on Fire Island, I draw a Ouija board on a large sheet of paper and constructed a makeshift planchette out of an egg carton. Looking at the Ouija board, it dawns on me to construct a periodic table and, using our planchette, we chart a series of poisons and household cleaning fluids: methane (C-H-H-H); methyl chlorine (C-H-H-Cl); chloroform (C-H-Cl-Cl); tetrachloride (C-Cl, Cl, Cl, Cl)....” (Bronson and Hobbs 2011: 165).

temperatures. Cracking was implemented in the petroleum industry in the 1930s to allow companies to utilize chemicals that were previously considered as waste, the other hydrocarbon compounds that are produced in the manufacturing of gasoline and other fuels. So not only did cracking speed up the refining process but it also produced an assortment of synthetic by-products, including ethylene and propylene, two important olefins that do not occur in nature and which soon became “the vital feedstock for the production of petrochemicals and plastics” (66-68). While finding, developing, and consolidating new sources of crude has always been central to the corporate story of oil, it is the technological innovation of cracking that transformed petroleum into a seemingly endless range of commodities, so that it expanded its already tremendous influence and global presence to become a material that is everywhere and nowhere in particular, something that is so thoroughly integrated into the daily routines, demands, and desires of contemporary culture that it is truly impossible to imagine life otherwise. Along with capitalism, whiteness, and the heterosexual family, petroleum enjoys the status of being a ruling imperative that will help fashion the future long after global oil resources have been depleted.

The BAYS DE MALL and the Phantasmagoria of Capitalism

As rocks of the Miocene or Eocene in place bear the imprint of monstrous creatures from those ages, so today arcades dot the metropolitan landscape like caves containing the fossil remains of a vanished monster: the consumer of the pre-imperial era of capitalism, the last dinosaur of Europe. On the walls of these caverns their immemorial flora, the commodity, luxuriates and enters, like a cancerous tissue, into the most irregular combinations.

—Walter Benjamin

In the dialectical image, the past of a particular epoch [...] appears before the eyes of [a particular, present epoch] in which humanity, rubbing its eyes, recognizes precisely this dream *as* a dream. It is in this moment that the historian takes upon himself the task of dream interpretation.

—Walter Benjamin

Sarnia's empty downtown mall, the Bayside Mall, is a concrete (and brick) example of what Benjamin refers to as a dialectical image that reveals that things are not quite right, what they should be, or as they once were. I have strolled through the dimly lit mall on many occasions. It is a truly depressing space, with very few surviving tenants. The darkened food court, with its variety of closed franchises, is especially creepy. A brief article in the online edition of the local newspaper announces that the mall has gone into receivership. The article explains how the mall was originally financed by the city, as it was seen as an attractive business investment: "When it opened in 1982, the Bayside Mall was known as the Sarnia Eaton Centre. The former department store company was its anchor tenant at the time. The City of Sarnia borrowed \$7 million from the province in the early 1980s to help develop the mall — buying out privately-owned parcels of land to make the city-owned plot" (*The Sarnia Observer*, Dec. 4, 2014).



Figure 24: Sarnia's Bayside Mall, which the locals still refer to as the Eaton's Centre despite the fact that the national department store went bankrupt in 1999 (Source: *The Sarnia Observer*)

The online article is accompanied by a photograph of a single patron leaving the mall during the height of Christmas holiday shopping (Figure 4). The I in the sign over the doors has disappeared, giving the mall a French sounding name: **BAYS DE MALL**. Sarnia's mall can be seen as something akin to the tarnished Paris Arcades that fascinated Benjamin, functioning as modern ruins, an abandoned and dimly lit space full of disappointment. I was last in the mall in December 2014 (concurrent with the newspaper article) and I won't claim to have seen any

ghosts—glimpses of Christmases past reflected in the empty window displays—but strolling through the empty mall does reinforce the phantasmagoria of capitalism, or, at the very least, it reinforces the idea that I, as well as the security guard and the few other souls in the mall (who, like me, probably came in to warm up), have arrived several years too late for the party. It is the ghost of capitalism itself that haunts Sarnia's Bayside Mall, providing an unnerving glimpse of a future without oil.

Many towns/cities in southern Ontario have suffered the same fate and the local residents have witnessed the bankruptcy and closure of small businesses in their downtown cores and the arrival of suburban chain box stores. But in Sarnia this economic decline is amplified and complicated by two related facts: the smokestacks of the regional petroleum plants continue to pump out dark clouds 24 hours a day; these companies continue to record annual profits. For the shareholders of the region's petrochemical companies there has been no decline in profits, no economic downturn, no recession. In 2013, Imperial Oil, for example, recorded earnings of \$2.8 billion and on its website proudly declares that the dividends paid to its shareholders have consistently increased over the last 19 years. It also claims to be worth \$8 billion dollars, making it one of the nation's most profitable companies. A list prepared by *The Globe and Mail* in 2013 ranks Imperial Oil as the fifth most profitable company in Canada, just below the country's top banks.²⁸ But while Imperial Oil continues to please its shareholders, it is clear that this surplus wealth is not making its way to the people who live near these plants and are continually exposed to airborne emissions and the regular spills (accidental and "controlled")

²⁸ According to *The Globe and Mail* list the following companies hold the top five positions:

1. The Royal Bank
2. Scotia Bank
3. Toronto-Dominion Bank
4. The Bank of Montreal
5. Imperial Oil

Suncor Energy holds the seventh spot (www.theglobeandmail.com/report-on-business/rob-magazine/top-1000/top-1000/article12829649/).

into the St. Clair River and the surrounding watershed.

There has been a great deal of anxiety expressed in Canadian news media (mostly by former federal government ministers and Conservative pundits) about the fall of oil prices in global commodity markets and how the American rejection of the proposed Keystone pipeline will have drastic consequences for the Canadian GDP and general standard of living.²⁹ While the decline in the price of oil in world stock markets will no doubt effect the country's GDP, the major oil companies have streamlined their operations and lowered their overhead expenses to buttress themselves against economic downturns. Sarnia provides a clear example of how the petroleum industry has made itself less vulnerable to changes in global markets and far less dependent on a regional labour force. One clear example of this push to streamline operations is the thorough automation that the refineries and production plants have undergone so that various stages necessary for transforming crude oil into the various desired hydrocarbon

²⁹ The clearest expression of this petro-fuelled anxiety and disappointment was voiced by Canada's former Minister of Finance, Joe Oliver, in television interviews that aired before and after President Obama's final rejection of the Keystone project and in the editorial pages of *The Financial Post*. For example, in the November 5th edition of this conservative and consensus-building newspaper, Oliver speaks of the loss of countless billions and the dismantling of Canada's legacy as an oil-rich nation. "If we do not take advantage of our enormous good fortune in resource wealth," he warns, "our resources will be stranded and our legacy lost. The consequences for this generation and future generations would be grim – not only a huge opportunity cost, but a significant diminution in our economic growth, as our energy exports shrink before our eyes. According to Wood Mackenzie, an energy research firm, \$100 billion could be lost to western Canadian oil producers over the next 15 years if no new pipelines are built" (<http://business.financialpost.com/fp-comment/why-canada-needs-new-pipelines>). I cite Oliver here because, he projects a grim future that parallels the dark one projected by his environmental critics. Both these positions, that of the environmentalist and the petrocapitalist, characteristically rely on the rhetoric and aesthetics of disaster to invoke a grim and ghostly future that awaits "our children and our children's children."

compounds (chemical feedstocks) can be achieved with a skeleton crew. Again, we can take Imperial Oil as an example: In the 1980s the company was the region's biggest employer, with a workforce of over 15,000 people (SLWDB 2010: 38). According to its website, Imperial Oil currently employs approximately 1000 people. It is important to stress that this drastic reduction in staff did not coincide with any noticeable reduction in production. Instead, the implemented measures to drastically reduce staff have helped ensure long term profitability. For the executives and shareholders of these companies, many who live in (or maintain) the large homes that hug Lake Huron just north of Sarnia, the good life evoked on company websites and in regional business publications has never paused or shown any signs of ending anytime soon.

The Automaton in the Oil Field

The Canadian crude oil industry was born in a boggy area of southwestern Ontario, Enniskillen Township, in and around the neighbouring hamlets of Oil Springs and Petrolia.

—Robert Bott

Are not coal and petroleum the most basic all spirits of the dead, being the spirits of the forest and swamps that went under long before the first magician?

—Michael Taussig

Canadian historian Robert Bott was commissioned by the Canadian Centre for Energy Information (a non-profit organization funded by the oil and natural gas industries) with the task of writing *The Evolution of Canada's Oil and Gas Industry* (2014). This pithy text helps explain why Chemical Valley is located in southwestern Ontario. It provides an epic tale in which billions of years are condensed into a historical newsreel or cartoon. In the mid nineteenth century, the petroleum industry was “born” in the swamps of Enniskillen Township (like some sort of aberrant creature), but the bigger story begins sometime before the last ice age: “Crude oil is typically derived from marine (water-based) plants and animals, mainly algae, that has been gently ‘cooked’ for at least one million years at a temperature between 50° and 150° C” (Bott 2012: 4). We can imagine the next entry or panel in this cartoon history as a cross section that shows fissures forming deep below the earth's surface and the black, snake-like flow of crude oil slowly making its way up to the surface and forming small bubbling pools that stink of sulphur. We flash

forward in the booklet and in millennial time to witness two Chippewa women in traditional dress carefully gathering pitch in a large wooden bowl. We are told that “Aboriginal people sometimes sealed their canoes with spruce gum and the tar-like residues from oil seeps. In 1714, Hudson Bay Company fur trader James Knight was told of a ‘great river’ far inland where ‘there is a certain gum or pitch that runs down river in abundance’” (9). The history comes to rest in mid nineteenth century with a Victorian entrepreneur who would become North America’s first oil tycoon.

A Victorian colonist named James Miller Williams is said to be the “father of Canada’s petroleum industry,” having acquired the most promising sites in the fledging township of Enniskillen and dug the deepest wells (11). Pictures of Williams show a figure that is very much in keeping with the Victorian image of masculinity and middle class financial power: a dark suit and a waistcoat, bushy mutton-chop sideburns, and the glint of determination—the pioneer spirit—in his eye. By 1858 Williams had established the first integrated oil field and delivery system in North America, as he not only linked a number of wells and pumps together but also financed the construction of corduroy roads to connect his drilling operations to his refinery in the bustling town of Hamilton, Ontario, 200 kilometres away. This task was arduous as much of the area separating Enniskillen Township from Hamilton was covered in dense forest and boggy swampland. At the Hamilton refinery, the barrels of crude oil were converted into barrels of lamp oil, a highly desired commodity in the dark and damp parlours and cabins of Victorian Ontario. In addition to fuelling lamps, the oil was also used literally to grease the wheels and mechanisms of Canadian farms and sawmills. The story of Williams’ success reveals how the establishment of infrastructure and monopolies (to integrate and consolidate) has always been important to the success of petrocapiatalism, including how it quickly inserted itself into local and national economies and into the lives and ecologies of specific places.

It is not generally known or acknowledged that southwestern Ontario witnessed North America’s first oil boom. The harsh terrain of Upper Canada did not afford the speedy transformation associated with a boomtown, as it took considerable time to clear land, build roads, and create a system of barges strong enough to ferry the heavy barrels of oil down rivers and across swamps and lakes. And the oil itself did not always readily flow out of the ground.

There are sepia photographs of early gushers, but most of the region's crude oil had to be slowly sucked from the ground using wooden pumps. The initial pumps were manually operated and involved oil prospectors jumping up and down on a springboard to draw the oil to the surface. "In 1863, John Henry Fairbank devised the jerker line system in Oil Springs and it quickly spread throughout the area" (*Oil Heritage: 2014 Visitor's Guide* 2014: 6). Fairbank's innovation was to create an automated system—a network of greased metal rods and chains, long wooden beams, heavy fulcrum blocks or weights, and giant leather belts—which stretched across his large oil patch and connected all the wells so that they could share the same single steam engine that was located in a central powerhouse. The basic principle of using an engine or rig to drive a sawhorse pump remains the same today. As I make my way to Oil Springs, I see a number of the black metal sawhorses or pumpjacks hard at work, laboriously enticing the remaining crude oil out of the ground.

In the latter half of the nineteenth century the population of Enniskillen Township began to swell, and the separate towns of Oil Springs and Petrolia were soon boasting to be "the Oil Capital of North America." The wealth associated with oil also began to make its presence known, as Petrolia became home to a growing number of stately mansions and declared itself "the richest little town in Canada" (Habashi 2000: 65). Much of this wealth was concentrated in the hands of 16 regional oil producers, who decided to consolidate their operations to ward off American competition. The newly formed company took the name Imperial Oil and chose the fledgling town of London, Ontario as the site of its main refinery. But this nascent resistance to foreign competition was short-lived, as the company was sold in 1898 to the U.S. giant, Standard Oil.³⁰ Standard, in turn, chose the nearby border town of Sarnia, with its established port and

³⁰ Owned by the Rockefellers, Standard Oil was the subject of the lawsuits and litigation brought against it by the U.S. Justice Department that would establish American antitrust laws. While much of Standard's monopoly was later sold off/dissolved, they retained Imperial Oil as a division of Esso Oil (the phonetic equivalent of the initials S.O.), which would rebrand itself in the United States and elsewhere as Exxon in the 1970s, and Exxon Mobile in the 1980s (the company

access to the Great Lakes, as the headquarters of its Canadian operations. The conglomerate also chose to retain the name Imperial Oil, which pleased the town leaders as it allowed them to engaged in their own form of Victorian self-fashioning, referring to Sarnia as “the Imperial City” and Ontario’s “City of Lights.”

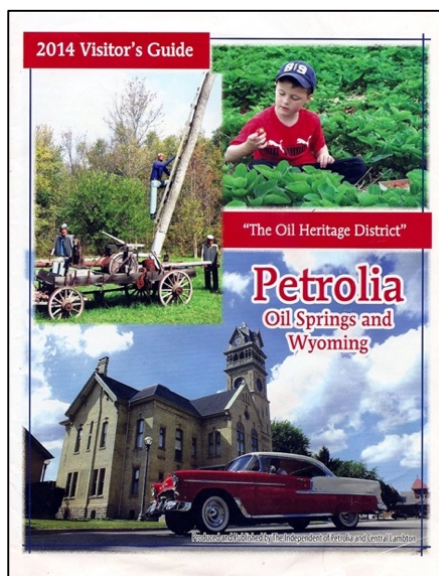


Figure 25: Visitor's Guide to "The Oil Heritage District"

I found a cartoon version of this regional history of petroleum in a small theme park dedicated to Canada's oil heritage. I first came across the museum in one of the tourist brochures I had picked up at a highway rest stop: "Visitors can embark on a self-guided driving tour to view sculptures depicting the life of the men who drilled for oil here back in the 1860s. Stop, turn off your vehicle, roll down your windows and listen to the jerker line system" (Tourism Sarnia-Lambton 2014: 12). The Oil Museum of Canada is located in Oil Springs and is operated by Lambton County as a national heritage site. It is an odd collection of artefacts: a number of restored buildings, wooden pumps and metal oil rigs of different shapes and sizes, and an assortment of early oil products, newspaper and magazine advertisements, and curios housed in

name Esso was retained in Canada so that Esso and Imperial Oil are interchangeable and are used to designate the different subsidiaries of the Imperial Oil/Esso corporate empire).

a white modernist cinderblock building, which also contains a small gift shop and an admissions desk.

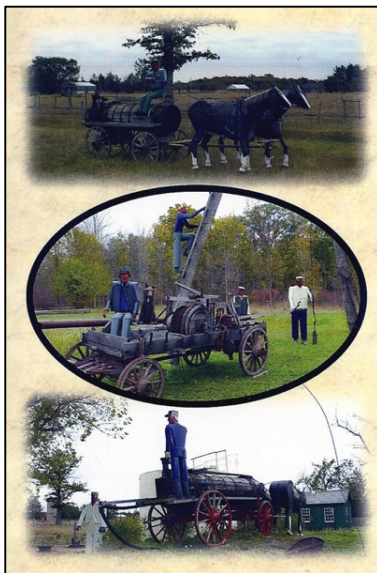


Figure 26: Postcard of the Tin Men (and horses) of the Oil Museum of Canada, Oil Springs, Ontario.

I visited the museum on a bitterly cold winter's day and I was sort of surprised to find it open. The two volunteer museum guides were equally surprised to see me, stating, "We don't get many people this close to the Christmas holidays." I didn't linger in the museum gallery too long, as I was excited to see the brightly painted tin men that I had seen in photos on the internet. Both the volunteers showed me on separate maps the route I should take to see all the metal figures that make up the museum's driving tour. They also apologised that the audio recording that visitors can tune into on the FM band of their car radio and use as a guide had been shut off for the season. I briskly walked back to the lone car in the small visitors parking lot and reviewed the two slightly different tour maps as the car warmed up. My curiosity was stirred: I was going to see tin men and possibly some automatons or robots pumping crude oil from the ground.

The roadside displays were as quaint as I imagined. "The sculptures depict real people and are grouped like actors in a play. The setting is the authentic oil field that still uses the technology of the 1800s" (*Oil Heritage: 2014 Visitor's Guide*: 5). When I rolled down the window

to get a better view, the smell also helped “bring history to life,” as the pungent odours of gasoline and sulphur filled my nose. The sounds and smells encountered on the tour remind the visitor that the museum is still a working oil field, that it is in fact “a living museum.” The primary function of these rigs, in other words, is not to recreate the experience but to maintain the experience and the flow of oil. The museum is part of a network of regional oil fields that continue to yield oil (a relatively small amount), which is transported by tanker trucks to the refining plants in Chemical Valley.

The last tin man in the museum tour was a reward for my all efforts: He stands in a field all by himself besides a small jerker rig. His right arm and hand are incorporated into the mechanism so that he is automated. “This modern pumpjack, is entirely made of metal, unlike the wooden pumpblocks built by the pioneers. The man checking the well is Elwood Ayrheart who worked at Fairbank Oil during the 1930s and ‘40s” (8). This simple visual trick, in which the figure of Elwood Ayrheart is posed to look like he is exerting force on the motorized rig to pump the oil rather than the other way around, is characteristic of the museum’s cartoonish spell. The fact that visitors to museum learn about the history of petroleum from the comfort of their idling cars definitely adds to experience. The regional story of oil is literally reduced to a series of roadside tableaux of stationary and jerry-rigged tin men. While I am tempted to argue that all the messiness of history, its violence and cruelty, and its bumpy unevenness, has been literally smoothed over so that I can view it from the comfort of my car, the exact opposite is true. The automatons are obviously clunky, a far cry from the “synthetics” or “skin jobs” of science fiction films and Disneyworld. While their flagrant awkwardness is charming, the viewer is neither seduced nor unnerved by a seamless simulation of Elwood Ayrheart. Instead, history is shown to be a rusty and motorized apparatus that must be constantly maintained and greased for fear that it will breakdown: the mechanized figure of Elwood Ayrheart is more akin to Klee’s/Benjamin’s *Angelus Novus* than it is to the seamless androids of *Westworld* (1973) and *Blade Runner* (1982). Rather than trying to hide or naturalize the clunky mechanisms of petroleum, this automaton functions as an equally clunky allegorical angel or ghost that points to itself as part of a historical narrative that is constantly at work shaping daily life in the region.

Before moving on, before leaving this motorized tour of the region's oil history, I should mention one more unresolved piece of this story of origins, a central fact that is missing in the tourist brochures and in the museum's assembled history: this key moment in Canadian history, in which we are told we are witnessing the birth of petro-capitalism in North America, took place on land expropriated from the Chippewa, the not-so-distant ancestors of the residents of Aamjiwnaang. As Christina Burr explains in her history of oil development in southwestern Ontario, *Canada's Victorian Oil Town: The Transformation of Petrolia from a Resource Town into a Victorian Community* (2006), the first discovery of oil in North America began with such an expropriation:

The first step in the colonization of Enniskillen Township was the alienation of Aboriginal claims by the Crown. The Ojibwa (Chippewa) First Nations ceded the lands and what would become the two south concessions of Enniskillen Township in two treaties completed in 1822 and 1827. The Native peoples never relinquished ownership of the subsurface or submarine rights in their reserves, in their uncaded lands, or in their territories ceded by treaty. Thus, the Crown never had title to the sub-surface and any of its resources, and still does not, even though most of the oil resources of Enniskillen Township have now been extracted. (2006: 4-5)

There are many examples that show that this disregard for First Nations land claims has not been limited to Canada's colonial past. Much of Chemical Valley sits on land that was originally designated as Crown land reserved for the Chippewa. As Sarah Wiebe explains, the post-World War II boom in Sarnia directly coincided with a series of negotiations brokered by the Crown that saw the petroleum companies taking control of a large percentage of this Crown reserve and steadily encroaching on the residents of Aamjiwnaang. "Much of [the] original reserve," states Wiebe, "founded by treaties 27 and 29 in 1825 and 1827, dwindled over the years through various surrenders, the peak of which occurred through controversial land deals in the 1950s and 1960s when development companies sought to purchase the entire reserve... The land base compressed over the years, a partial consequence of [these] land sales and surrenders, [as well as] highway expansion and Municipal annexations" (2009: 25-26). This annexation would of

course, confirm that the petroleum industry was closing in and that “there is something really fucked up here.”

When “Dow is a Neighbor in Your Town”

Colour of the flares: The heavy hydrocarbons when being burned are yellow. The lightest hydrocarbons when being burned are almost crystal clear, pale green and blue.

—Beverly (a retired Imperial Oil employee and a friend of my mom)

From the 1940s to the early 1970s, the public saw chemicals and plastics as an absolute boon to humankind. Everything from curing diseases to enhancing daily living by making it more colourful and convenient was ascribed to chemicals. New products were being developed and marketed with great frequency. The advertising at any particular time not only tells something about the company but also mirrors what society was like at that time.

—Victor Dudek

To return to Sarnia and further ground the claims I have made about a regional sensorium of Chemical Valley, I want to turn to a thin coffee table book that I came across in my research, entitled *The First 50 Years: Dow Canada 1942-1992*. The book was produced by Dow Canada Limited to celebrate its history in the country and in Chemical Valley. It is full of glossy images that are captioned with an equally glossy history of Dow written by a local historian, Victor Dudek. I am primarily interested in a series of advertisements that are featured in the book and that convey the idea that Dow Canada and the petrochemical industry played a central role in defining the attributes of modern consumer culture by manufacturing chemicals and products that became synonymous with convenience, progress, and the aspirations of the white suburban household. These ads from the 1950s and 1960s were directed at white middle class consumers and constituted a petro-chemically infused form of self-fashioning, a social apparatus and resource used by people to inform and shape their identities and patterns of behaviour. A quick review of these ads reveals some of conventions and rhetorical appeals that were used to sell petrochemical products and convince people of the merits, benefits, and joys of living with oil,

gasoline, plastics, and polymers. I am also interested in how these ads and the new chemicals and products that they introduced to the general public contributed to a chemistry of whiteness, a both subtle and not so subtle way of thinking and being that excluded people whose skin colour and ethnicity differed for the happy, white, suburban families regularly featured in these ads.



Figure 27: Dow is a Neighbor in Your Home Town!
(Source: *The First 50 Years: Dow Canada 1942-1992*)

Figure 28: Dow Sarnia Employees Hockey Team

I want to begin with the slogan “Dow is a Neighbor in Your Town” (Figure 27), a tagline used in a Dow Canada ad that featured a colourful illustration of a small town buzzing with activity, which was meant to stand in for any town or city in Canada. No specific dates are given for any of the ads feature in this publication, but the American spelling of “neighbor” suggests it was simply adopted from an American campaign and perhaps it appeared in circulation sometime before the Canadian subsidiary had a public relations and advertisement department of its own that could specifically address Canadian consumers. Regardless of the American spelling, this ad is certainly appropriate to the economic conditions of Sarnia in the 1950s, a

period in which Dow established itself as a major regional employer and made inroads into the community by sponsoring hockey teams and similar communal activities and events (Figure 28). Whereas this ad would carry more of a metaphoric message elsewhere in Canada, for the residents of Sarnia, especially those that worked at Dow, the ad's neighborly/neighbourly appeal struck a definite, literal chord. "By 1955," Dudek reports, "Dow Canada had grown from 96 employees in 1945 to 700 employees at Sarnia and 100 spread across Canada" (1991: 16). Here was an employer that was looking after Sarnia's best interests; putting the city on the map as a central hub in the science/development of modern chemistry and the manufacturing of distinctly modern products.

Dow Canada also relied on the tagline: *Dow Canada: Chemicals Basic to Canadians* (Figure 29). Both these taglines, with their inscriptive references to civic and national forms of citizenship, illustrate the company's strategy of presenting petrochemical products as indicative of a uniquely modern and communal way of life. This strategy proved to be an extremely effective way of defining what it means to belong to a progressive society of consumers, to be a Canadian during the unprecedented economic boom of the 1950s and 60s, and to have characteristically modern desires and needs. The ads, in other words, successfully aligned modernity with petrochemicals by showcasing the vast array of new petroleum-based products that were now available to consumers as essential markers of the modern home and lifestyle. The images in the Dow coffee-table book provide examples of how this petrochemical citizenship was developed so that people were encouraged to see Dow and its product line as a way to fashion themselves as modern consumer-citizens.

The primary figure in these Dow ads is the white suburban housewife. She appears in the ads as the person who benefits the most from the full integration of petrochemical products. The dominant theme in these ads is that the life of the suburban housewife (and by extension the lives of the suburban family members) has steadily improved in tandem with Dow's development of new plastics and the arrival of new labour-saving devices, household appliances, and food storage products. As a chemical company that produced hydrocarbon feedstocks, the ads produced by Dow Canada did not attempt to sell consumers a particular product. Instead, its aim was to convince consumers of the unquestionable benefits of petrochemicals, to sell the idea of

a chemically-enhanced world. For example, in one ad we are presented with a woman sitting on a stepladder in bright red Capri pants and a spotless smock, which we are told in a wordy accompanying text is an “ensemble from McCall Patterns” (Figure 29). In her immaculate outfit, the woman takes a break from house painting, drinking “Coca Cola of course.” The intention is not to sell paint, Coca Cola, or McCall Patterns. Instead, we are presented with a household and lifestyle that has been made better through the introduction and thorough integration of petrochemicals. Coke and suburban modernity taste better with Dow.



Figure 29: Latex Paints



Figure 30. *STYRON!* Chemicals Basic to Canada

(Source: *The First 50 Years: Dow Canada 1942-1992*).

In a second example, an extremely happy woman is shown pulling out an ice tray from the ice-making machine in her fully stocked refrigerator (Figure 30). In bold, italic letters, the tagline reads: “**STYRON! ... THE RIGHT PLASTIC – RIGHT IN REFRIGERATORS – RIGHT IN YOUR PRODUCT!**” In a not so subtle fashion these ads suggest that the woman’s place in the modern

world of STYRON and other plastics is very much tied to the home, specifically to the kitchen and the bedroom as the primary sites of heterosexual reproduction and the postwar baby boom. Although these sentiments were challenged during WWII when there was the need for women to work in arms factories and other jobs essential to the war effort, the joint economic and baby boom in Canada and the U.S. in the 1950s and 60s and the subsequent dramatic expansion of the middle class, conspired to identify women primarily as housewives. In turn, the white suburban housewife became the essential spokesperson for the marketing of the vast range of consumer items made specifically for the home. She became essential to the ways in which petrochemistry, consumerism, modernity, and citizenship were imagined and fashioned as intertwined practices and desires.

For many older residents of Sarnia, the chemical plants have long served as a local source of pride. In the words of Beverly, my mom's friend and a long-time employee of Imperial Oil: "We made everything. Sarnia made the chemicals that made people's lives better. Imperial Oil also provided me with a job I loved and a group of wonderful friends. I literally loved going to work. It is how I met my husband and as I tell my daughter, the environmentalist, the petroleum industry helped pay for her university education." Beverly's words express many of the same sentiments found in the Dow publication and in these ads, but gives them a personal context. Her extremely friendly manner and enthusiasm also carried a sly and playful message directed at me about the inherent contradiction of daughters and sons (and other environmentalists) who have "enjoyed the spoils" of the chemical boom or revolution and now lecture their parents about the evils of the petroleum industry.

Included in the Dow Canada book is a number of pictures that illustrate how civic pride and petrochemicals were aligned. For me, the most engaging image is that of a woman who, in my imagination, I identify with a younger Beverly (Figure 31). At first glance, the woman appears to perform a superhuman feat: she is holding a giant tree trunk above her head. The caption explains how she is able to keep the log aloft: "Manufactured as 'logs' in the early days, StyrofoamTM was celebrated for its light weight" (Dudek 1991: 28) In addition to expressing a combined sense of civic-petro pride, the image also underscores the steady proliferation and integration of Dow's product line into the infrastructure of modern life. The woman's ease in

holding up the log speaks to the smooth paths through which Styrofoam™ was introduced and assimilated into the construction industry. The image, in other words, effectively conveys how Styrofoam quickly went from being seen as a substitute for lumber and other construction materials to establishing itself as an absolute necessity in how our cities are built. Styrofoam™ is now a standard product in the siding, insulation, and roofing of buildings. It is also commonly used in the construction of roads in Canada to slow down the damage caused from snow and ice. Where would we be without Styrofoam™ or STYRON, and all the other patented combinations of hydrocarbons that have made their way into all aspects of modern life so that we take for granted the fact that they are there?



Figure 31: Woman holding a giant Styrofoam log above her head
(Source: *The First 50 Years: Dow Canada 1942-1992*).

The Dow Smokestacks and the \$10 Bill

There is an epidemic of mesothelioma in Sarnia, the epicentre of what, by some assessments, is the worst outbreak of industrial disease in recent Canadian history. The local occupational-disease clinic has in the past six years been contacted by 2,944 workers complaining of a bewildering and horrifying array of illnesses. Besides mesotheliomas,

there are leukemias, lung cancers, brain cancers, breast cancers and gastrointestinal cancers, among other afflictions.

—Martin Mittelstaedt

Cruel optimism is the condition of maintaining an attachment to a significantly problematic object.

—Lauren Berlant

On Friday, March 6, 2009, the last kilogram of product was manufactured at Dow Chemical Canada's Sarnia Site, thus ending a distinguished +60-year history in the Sarnia-Lambton community.

—*Faithful*

The full, rambling title for the publication from which the last epigraph is taken is *Faithful: A Recent History of Dow Chemical Canada's Sarnia Site, 1993 to 2009, As told by the Dow Sarnia employees and retirees*. The small book is mostly comprised of photographs of the former Dow Canada staff at work and at company events. These snapshots are accompanied by expressions of company loyalty, as well as fond memories of Dow picnics, group outings, and charity events. The book's main function is to allow its former employees to express their sadness about the "unavoidable decision" on the part of Dow's management to close its Sarnia plant. These expressions of devotion and mourning from the company faithful also give expression to what Lauren Berlant refers to as "cruel optimism," which involves being tied to desires and practices that are ultimately detrimental. Berlant states: "What's cruel about these attachments, and not merely inconvenient or tragic, is that the subject who have x in their lives might not well endure the loss of their object/scene of desire, even though its presence threatens their well-being, because whatever the *content* of the attachment is, the continuity of its form provides something of the continuity of the subject's sense of what it means to keep on living on and to look forward to being in the world" (2011: 24, italics in original). Inherent to such attachments is the idea that they serve as blinders so that the cruelty that they present "is more easily perceived by an analyst who observes the cost of someone's or some group's attachment to x, since often persons and communities focus on some aspects of their relation to an object/world while disregarding others" (24). The idea that we can be thoroughly influenced by detrimental

desires and practices seems very relevant to Chemical Valley. It helps explain how workers can simultaneously be afflicted with “a bewildering and horrifying array of illnesses” (Mittelstaedt, March 13, 2004) and also express feelings of loyalty and loss with the closing of the Dow Chemicals plant, a plant that had a long and well-known history of releasing toxins.

In many ways the history of Chemical Valley assembled in this chapter begins and ends with Dow Canada, as the company helped to establish the region as an important hub in the North American flow of oil and capital, and its departure reaffirms the idea that this regional prosperity has all but disappeared for most of the region’s population. Dow, the infamous American-based multinational chemical company, came to Canada in 1942 and, according to Dudek’s history, did so at the bequest of the Canadian government. He explains that the United States had not yet entered World War II and American companies could not directly show support or allegiance by selling arms or essential materials to Canada or the Allied Forces. To get around this show of neutrality, Dow established a Canadian subsidiary:

As a result of the Japanese takeover of the East Asian rubber plantations in 1941-42, the supply of natural rubber virtually vanished. The war (1939-45) then created a huge need for rubber. In direct response, the Canadian Department of Munitions and Supply made an urgent long-distance phone call to The Dow Chemical Company. The Canadian government had created the Polymer Corporation (as of 1972 known as Polysar, later NOVA and now Polysar Rubber Corporation) to produce synthetic rubber. Dow had a process for producing styrene, a necessary raw material in the production of synthetic rubber. Thus, the company was invited to come to Sarnia to set up a styrene plant and begin its operations as soon as possible. (Dudek 1991: 11)

Despite Dudek’s chosen silences—for example, he doesn’t explain how an urgent long-distance phone call from Canada’s government would be a sufficient demand to allow this American company to participate in the Canadian war effort and not be breaking laws or regulations that were introduced to ensure American neutrality—his historical account provides important details in Chemical Valley’s mythology as a site that generated national pride.

Dudek also shortens the name of the company that Dow Chemicals helped form with the Canadian government: its full name was the Royal Polymer Rubber Corporation and it was

considered a Crown corporation, a state-run business that just happened to have a huge American conglomerate as its not-so-silent partner. The company was a tremendous success for the war effort and for Dow, as it was able to develop a synthetic rubber that satisfied some of the war's insatiable demand while circumventing the need for rubber tree plantations. Despite its history of success, Royal Polymer was eventually privatized in 1988 and sold to NOVA Chemicals, which, in turn, sold the plant in 1990 to the pharmaceutical giant Bayer AG of Germany. Much of the original Royal Polymer plant was refitted to suit the production proposes of Bayer and its petrochemical subsidiary, LANXESS AG, which continues to produces the synthetic rubber used to make automobile tires. This synthetic rubber (or tire feedstock) travels via a network of pipelines, tanker ships, and rail cars to tire manufacturing plants in Canada, the US, and Mexico.



Figure 32: The Royal Polymer Company featured on the back of the Canadian \$10 bill (issued in 1971)

It was also the Royal Polymer Company that graced the back of the Canadian \$10 bill, which was issued in 1971 to commemorate the company's service to the war effort and the role it played in the establishing Chemical Valley as a focal point in the nation's petroleum-based economy (Figure 32). Printed in a regal purple, the bill emphasized Royal Polymer's role as a key site of petro-nationalism. The \$10 bill and its eventual removal from circulation can also be understood as allegory of Sarnia's decline or fall from grace, as the city quickly went from being seen as an indisputable marker of Canadian technology and the country's postwar economic boom to a symbol of environmental degradation and Ontario's crippled economy. Even when the \$10 bill was in circulation, Sarnia was often featured in the national news media as a primary site

of environmental concern, as it consolidated the worst fears of the nascent environmental movement in the United States and Canada (Oziewicz: June 10, 1978; Keating: April 4, 1981; McClaren Sept. 14, 1985).

In 1971, Dow Canada drew national and international attention as the company was charged for dumping countless litres of methyl mercury into the St. Clair River. Company records revealed how Dow routinely dumped this highly toxic chemical into the river as the result of both accidental spills and what the petrochemical industry refers to as “controlled and legal spills.” Subsequent high concentrations of methyl mercury found in fish and marine plant life contributed to the drastic decision on the part of the Canadian and American governments to impose a joint ban on regional commercial fishing in the St. Clair River and Lake St. Clair that lasted nine years. In her PhD dissertation, *Toxic Talk at Walpole Island First Nation*, Christianne Stephens traces the fears, uncertainties, and harm that this culture of toxic spills caused on Walpole Island, another First Nations community 50 kilometres downstream from Chemical Valley. One of the stories she tells concerns how Dow’s routine spilling of methyl mercury was suspected as the source of a number of cases of Ontario Minamata Disease that appeared on Walpole Island in the 1970s (2009: 30). This painful and horrific disease involves the loss of motor functions as the methyl mercury attacks the brain and nervous system and can result in blindness and death.³¹

In the summer of 1985, Dow was back in national and international news, being responsible for the Sarnia Blob, a gooey, brown toxic mass that floated down the St. Clair and then sunk to the bottom of the river bed, where it grew to the size of “a basketball court” (Murphy 2013: 107). The blob was the result of Dow releasing more than 11,000 litres of perchloroethylene, which is primarily used in the dry cleaning business and is a deadly carcinogen. Being a cleaning solvent, the perchloroethylene clung to floating particles of dirt.

³¹ The other site associated with Ontario Minamata Disease is Grass Narrows, another First Nations community situated downriver from a huge industrial site: a pulp and paper mill. The fact that this disease was visited on two First Nations communities is another blunt reminder of how capitalism, colonialism, and whiteness feed each another.

These floating clumps of dirt coagulated and formed an amorous and mobile mass of goo, which in turn sucked in whatever it came in contact with, such as garbage, aquatic microorganisms, plankton, and fish. As the blob moved downstream, the perchloroethylene also combined with other toxins from previous spills. The blob was reported to contain 18 other industrial chemicals, including other deadly dioxins (CBC Radio, *As It Happens*, November 10, 1985).³²

In addition to this history of toxic spills, the lingering presence of Dow Canada in Sarnia is also embodied in the various buildings and sites that still carry its name, such as the Dow Centre for Youth, the Dow People Place (a small amphitheatre), the Dow Wetlands (a 20-acre marsh and public park which was built over a landfill site that the company used to maintain) and the Dow Medical and Patient Unit at Bluewater Health (the regional hospital). Along with these public endowments, there are a pair of Dow smokestacks that still stand at the Sarnia end of Riverside Parkway. The plant is now owned by TransAlta, an electric company that acquired the property for its power generator. After doing some minor conversions, TransAlta started selling electricity to Dow's former neighbours-competitors. TransAlta installed a roadside company sign, but the black block letters **D O W** are still written down the side of one of tall smokestacks, functioning as a graphic reminder of the company and its former glory as an industrial cornerstone of Chemical Valley. Like **BAY S DE MALL**, the letters **D O W** on the smokestack also constitute a regional phantom, marking the company's exit from Chemical Valley and the toxic legacy that it has left behind.

There is an addendum to the Dow story. In 1989 the Canadian mint issued a new \$10 bill that features an image of an osprey. This bill, in turn, was followed by a series of three different bills, each featuring different collages of the Memorial to the Unknown Soldier in Ottawa and the poppies of Flanders Fields. And in 2013, the mint introduced the current version of the bill, which has the iconic VIA Rail train, the Canadian, weaving its way through the Rockies. It can be asserted that all these subsequent versions of the \$10 bill helped to efface the Royal Polymer Company and Chemical Valley from the Canadian imagination. But there is an ironic twist to this public effacement or erasure: the new \$10 bill, like all of Canada's brightly coloured bills, is made

³² This program can be accessed at: <http://www.cbc.ca/archives/entry/what-is-the-sarnia-blob>.

of polymer. Thus, as Canadians consumers, we all literally trade in polymer/oil each time we spend money.

Notes from the Underground

The word 'cavern' is clearly insufficient for my attempt to convey this immense place. The words which make the human language are inadequate for those who venture into the depths of the Earth.

—Jules Verne

From the early 1950s salt caverns located some 600 metres below the earth's surface have been used for safe storage of hydrocarbons [*sic*].

—SLEA

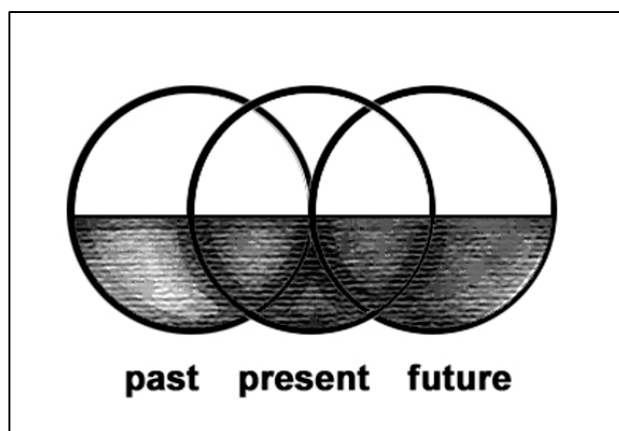


Figure 33: A rendering of the all-consuming timescale of Chemical Valley's toxic caverns

In pursuing the region's ambient politics, I need to go back underground. But instead of mapping the extraction of crude oil from the ground in Petrolia and Oil Springs, this underground map examines the use of salt caverns as vast subterranean storage tanks or burial grounds. Picture this: There are numerous salt caverns in Chemical Valley, holding countless litres of lethal poisons. A four-page factsheet entitled "Deep-Well Storage in Salt Caverns," presents these caverns as a technological achievement, one that has managed to enroll geology in the storage of toxic chemicals. Despite its assertion of "sticking to the facts," this factsheet betrays a phantasmagoric tale of lingering ghosts. An unnerving story emerges in which these caverns are

shown to constitute simultaneously a toxic past, present, and future. A simple diagram of three overlapping bubbles helps us visualize this implosion of time. Chemical Valley's past is literally seeping up through the earth to make itself known, disturbing the simple routines and pleasures of the region's current population, as well as foreshadowing an inescapable toxic future.

The intention of the factsheet is to appeal to a worldview in which the conventional binaries of nature and culture, landscape and technology, and truth and fiction, are held in check as clearly separate realms. Capital in turn is presented as a concerted and progressive effort on the part of major corporations, investors, and government agencies to develop large scale commercial enterprises that marshal the planet's natural resources and convert it into energy and consumer products. Ecological sovereignty is seen as the logical goal of technically advanced nations and in this factsheet, this sovereignty extends far underground. The factsheet format itself constitutes a tool or technology that is marshalled to categorize and compose the world as a series of interconnected bits of information about the physical world that in this situation just happen to coincide with the aspirations and designs of the region's petroleum industry. It portrays a passive world that sits silently awaiting to be systematically mined, cultivated, harvested, and injected with toxic chemicals, all in the name of commanding simple and unquestionable facts.

Like all factsheets, the information conveyed here is meant to be read as authorless, just a collection of details, data, elements, qualities. *Deep-Well Storage in Salt Caverns*, in other words, doesn't need an author, just a compiler, whose name is revealed at the bottom of the last page: "Information Compiled by: Tom Hamilton, teacher, retired" (SLEA 2005). Like most factsheets, authorship is presented here as an absent presence, or what Jacques Derrida terms "*sous rapture*," under erasure. A person isn't supposed to author or make up facts, s/he can only point them out as self-evident statements or truth-things that are waiting to be encountered. Facts are *always already* there and the objective compiler functions merely as a "modest witness," making them easier to grasp by placing them into categories and by using bullet points.

While the author-compiler of this factsheet is purposely obscured, it does have a commanding banner:



Figure 34: the SLEA Logo

At the top of the first page there is an image of the sun setting behind a flowing river and the words Sarnia-Lambton Environmental Association, Industries Working Together. The resolution of the banner is fuzzy but its intention is fairly clear: these authorless facts are confirmed and indorsed by the Sarnia-Lambton Environmental Association, an regional office that functions as a public relations spokesperson on the part of the petroleum industry as a whole. But the reader is not meant to pause on this logo or think about the about the thorniest of a petroleum association referring to itself as an environmental association. Both the retired school teacher and SLEA are meant to be read as circumstantial to the compiling of information.

What is harder to ignore or see as the simple or unobtrusive marshalling of facts is a diagram that is used to show the depth of these salt caverns (Figure 35). We are presented with an image of the CN Tower, or rather the image of two CN Towers, one standing above the ground, and the other inverted and buried underneath the ground. While the illustration is rather ordinary, it betrays a gothic fantasy of mastery and death that thoroughly conflicts with the idea of compiling unadorned facts. The caption offers an explanation for using the tower as a measuring device: "CN Tower, Toronto: The world's tallest free-standing building, 560m tall and 80m across, helps to visualize the depth and size of a medium-sized cavern." But the caption doesn't fully explain why the CN tower is used as a familiar marker. Since its erection in 1976, the CN Tower has served both as a symbolic and literal beacon of Canadian engineering and communications technology. It and the Canadarm (the variations of robotic arms placed on the US Space Shuttle and the International Space Station and featured in the previous chapter) are the two primary figures used to represent the nation's technological capabilities, appearing on stamps, coins, postcards and school textbooks. This diagram is meant to suggest that the caverns were constructed with the same sort of technological mastery that went into constructing the CN Tower. Just as the CN Tower stretches into the sky and was built to withstand wind and gravity,

these caverns correspondingly stretch deep below the Earth's bedrock. The threat presented by the dangerous hydrocarbon housed in these deep caverns has been sufficiently addressed and regulated to the past.

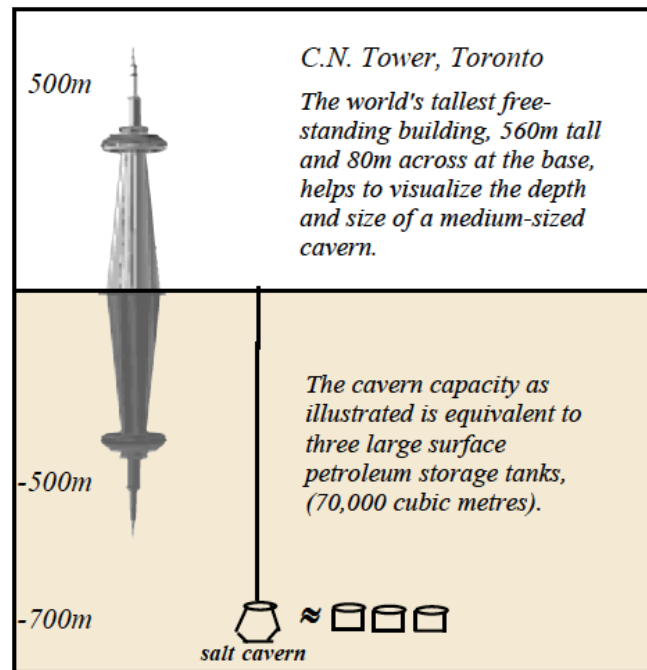


Figure 35. Inverted and buried CN Tower (used to demonstrate the depth of the salt caverns used to store vast quantities of dangerous hydrocarbons)

But even the humblest of diagrams, just like other modes of representation, can reveal something of the larger material grammar that constitutes life and how much of this messy and vibrant world/worlding evades our attempts to marshal and contain it. In other words, this diagram of the CN Tower betrays some of the limits of the regimes of knowledge that we deploy to create order and make sense of things. Like the compiling of facts, such drawings don't just depict the world at large, but instead play a primary role in determining our sense of the world and our place within it: Through drawings we are drawn into the world around us. Our being-in-the-world is activated and given a format with set limits.

We can also see the diagram of an inverted and buried CN Tower as an example of what Donna Haraway calls a "god-trick," "a conquering gaze from nowhere" (1991: 188). With echoes of Georges Bataille, Haraway asserts that the god-trick and its persistence in the human

imagination constitutes a violent, all-consuming pineal eye. “Vision in this technological feast,” she states, “becomes unregulated gluttony; all perspective gives way to infinitely mobile vision, which no longer seems just mythically about the god-trick of seeing everything from nowhere, but to have put the myth into ordinary practice. And like the god-trick, this eye fucks the world to make techno-monsters” (1991: 189). The god-trick or bird’s eye view, Haraway contends, helps to enroll vision into violent practices and narratives of human mastery. By way of the god-trick, the world is rendered as thoroughly manageable or engineered and, in turn, humans are rendered as all-seeing managers and sovereigns.

But what does all this talk of pineal eyes and monsters have to do with the CN Tower being used to show the scale of the underground salt caverns? How exactly does this drawing perpetuate technological mastery and violence? The drawing, I contend, posits the dangerously foolish illusion that these toxic hydrocarbons have been dealt with, are gone, are no longer a matter of concern. This illusion, in turn, encourages further production of toxic chemicals, as people are encouraged to believe that the surplus or waste generated in the petrochemical industry can be safely stored indefinitely simply by fabricating more salt caverns. Despite the fact sheet’s claim to providing a thorough overview, it does not mention the fact that these salt caverns are not completely sealed and have proven to have fissures, resulting in leaks (Murphy 2013). Along with perpetuating a fantasy of toxic containment, the factsheet with its buried CN Tower graphically illustrates/reveals how this exercise of pumping poisonous chemicals into giant subterranean caverns constitutes an overtly phallogocentric expression of ecological sovereignty.

The SLEA factsheet also confirms how the petrochemical industry has no interest in curbing their production of toxic chemicals. Initially, the industry-wide business model was to use these old salt mines to dump and store dangerous hydrocarbons until they were maxed out. Once the old salt mines were full, the industry as a whole slightly adjusted this model: drill more deep shafts into the surface of the earth, and pump hundreds of gallons of treated water into these wells to dissolve the salt so as to construct more subterranean pools. The SLEA factsheet concludes on this note of the industry continuing to use salt caverns as a primary means of storing and disposing toxic chemicals: “Salt, mined from the Salina formation, is a highly valued

resource. Utilization of the resultant caverns for the storage of hydrocarbons is a good example of resourcefulness and technical skill.”

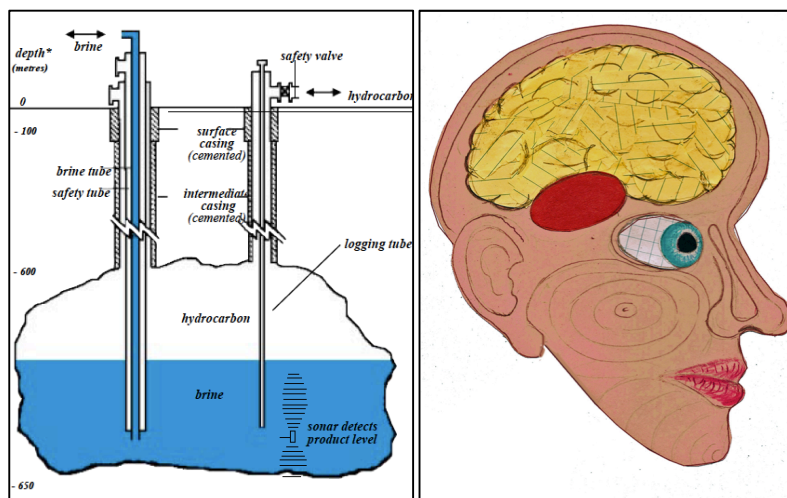


Figure 36: The salt caverns as toxic infused brains lodged below the earth’s crust (Sources: SLEA factsheet and author’s drawing)

But the story of these caverns doesn’t end there. There are more facts and related notes to be compiled. As a side note for example, the factsheet’s inverted image of the CN Tower is reminiscent of Karl Marx’s use of an inverted table in the first volume of *Capital* to explain the magic of commodities. Marx mentions totemic magic and the table rapping and levitating séances of Nineteenth Century spiritualism to elucidate how manufactured items seem to acquire a life or will of their own so they take on the value of a fetish, which he explains as a magical supplement, a value beyond the practical realms of use and labour. He speaks of a table being flipped on its head and acquiring a wooden brain out of which springs the grotesque ideas that animate capital and the obsession or mania of commodities. “It is clear as noonday,” declares Marx, “that man, by his industry, changes the forms of the materials furnished by Nature, in such a way as to make them useful to him. The form of wood, for instance, is altered, by making a table out of it. Yet, for all that, the table continues to be that common, everyday thing, wood. But, so soon as it steps forth as a commodity, it is changed into something transcendent. It not only stands with its feet on the ground, but, in relation to all other commodities, it stands on its head, and evolves out of its wooden brain grotesque ideas, far

more wonderful than ‘tableturning’ ever was” (2008: 42). We could similarly speak of these numerous subterranean pools of toxins as chemically infused brains lodged below the earth’s crust and out of which springs the grotesque idea—the phantasmagoria or horror story—that petrochemical companies can magically transform bitumen into commodities and that the toxicity produced in this transformation can be simply buried and forgotten.

But to tell the full story to these caverns I need to construct an adjunct vignette and provide some background information about Sarnia’s Centennial Park (the city’s main waterfront park). I also need to mention the Sarnia Ribfest, as this annual summer event has become an important factor in the region’s willingness to forget its toxic history and ignore its future legacy.

Can I get some of that tar-like substance on my ribs?

The chemical archive refuses to remain latent.

—Michelle Murphy

“It’s stressful,” said Ribfest founder Dave Johnston, Friday. “I really didn’t need the headache.”

—*The Sarnia Observer*

Knowing I would be interested, my mom phoned me to tell me that the Sarnia City Council had decided to move this year’s Ribfest from the town’s main waterside park. “They were going to cancel the Ribfest again this year but they found another park to put it on.” My mom knows I am vegetarian and would be no fun at a Ribfest, but she also knows that I am interested in Sarnia’s Centennial Park and the controversy (and the lack of controversy) surrounding it. The origin of this park is referenced by the SLEA factsheet as a series of chronological bullet points:

1904: The Empire Salt Company began a salt mining operation at the present Centennial Park site.

1910: Dominion Salt purchased the operation.

1965: The land was sold to the City of Sarnia with [sic] the condition that a park be created.

1967: Centennial Park was officially opened on Canada’s 100th birthday.

We can similarly construct the next segment of the story (the important part of the story that is missing from SLEA factsheet) in the form of a timeline assembled from news items featured on the online edition of *The Sarnia Observer*:

Monday, June 11, 2012: “The appearance of a mysterious ‘tar-like’ substance in Centennial Park has thrown a wrench into this year’s plans for Sarnia Ribfest, but organizers remain cautiously optimistic. Chairperson Dave Johnston said the annual festival has lost about one-third of park space after blobs of the substance were discovered Friday. City staff have cordoned off an area covering 75 by 150 feet near the park’s boat ramp.”

Friday, May 17, 2013: “Closure of the city’s most popular park for summer events has organizers scrambling to figure out where everything from Kids Fest to Ribfest will go. “It’s stressful,” said Ribfest founder Dave Johnston, Friday. “I really didn’t need the headache.” Soil samples with elevated levels of asbestos and lead prompted the city to abruptly close Centennial Park on Thursday.”

Wednesday June 26, 2013: “Just when the volunteers behind the city’s 2014 legacy project hoped to announce good news for Centennial Park, a large fence was required to keep the public away from possible soil contamination in the park. The area earmarked for an ice rink, a jumping fountain and an outdoor fireplace has been judged contaminant-free. The Dow People Place, which those behind the legacy project want to redevelop into a community event centre, is still protected by fencing.”

Friday, July 12, 2013: “Soil tests were ordered after a tar like substance bubbled to the surface in the north field. That’s when lead levels exceeding acceptable standards were found in the children’s play area and traces of asbestos were discovered. Mayor Mike Bradley said testing was extensive both at the surface as well as in deep core samples because officials knew the park is a former industrial site that was infilled in the late 1960s and they knew contamination could be widespread.”

This story, at least for *The Sarnia Observer* goes cold after the summer 2013, even though the fencing around the children’s playground and the soccer field remains in place (I was last in the park in the summer of 2015 and took photographs of the fenced-off areas).

There is an extremely grim fact to add to this story of toxic legacy: in addition to the playground, the park is also home to a memorial statue commemorating regional workers stricken with mesothelioma, men and women who suffered and died of asbestos poisoning. The fact that the city refuses to acknowledge the full toxic legacy of this park is not only disrespectful of these fallen workers, it is also an collective act of willful ignorance that harms the local population by contributing to the consensus that all is well in the region and life can continue in the same structurally violent fashion: the petrochemical companies can continue to release both accidental and allowable emissions, children playgrounds and community ice rinks can continue to be built over toxic dumps, and fate of the Ribfest will continue to be given priority at city council meetings.



Figure 37: Snapshots of the contaminated children's play area in Sarnia's Centennial Park, built on a former salt mine and toxic dump

Conclusion: The Risk Manager and the Cosmopolitical Map Maker

This chapter concludes with a series of anecdotal notes. The first two stand on their own as journal entries. The third is interwoven into my closing remarks:

December 7, 2014: It is a Sunday and I'm at a community hockey arena in the small town of Mooretown (approx. 20 km south of Sarnia), to watch my eight-year-old niece's weekly hockey game. We arrive early and have to wait for another game, this one played by eight-year-old boys, to end. This proposed "quick" trip to the local arena to watch my niece play hockey stretches into four hours, during which I wander off and tour a small county museum (The Moore Museum)

and I take photos of the empty community pool. As I wander about the arena and the museum, my feelings of being estranged from my family and the communal family at large are intensified. Beyond feeling like an outsider qua interloper qua pervert, I'm also bored and frustrated. As I loiter in the arena, I spot an image that illustrates how petroleum still plays an important role in how regional identity and civic pride are fashioned/expressed: the team jersey of the Petrolia Oilers is displayed alongside team photos. The jersey prominently features the team mascot, a snarling oil gusher.



Figure 38: Petrolia Oilers - Peewee Hockey Team Crest (<http://petroliaminorhockey.com/>)

December 10, 2014: It is a Wednesday and I'm at a community meeting at Aamjiwnaang, where I witness what is perhaps the most poignant example of capitalist sorcery in this dissertation: An environmental consultant hired by NOVA Chemicals explains how the newly built natural gas refinery/cracking plant that the company has just put into operation will substantially increase local emission rates, but is also a much greener and sustainable source of plastic feedstock than continuing to refine/crack crude oil. This new facility is actually a massive refitted project—referred to as the Corunna Cracker Revamp and Site Integration Project—that converted NOVA's Corunna Plant (one of four large plants that the company maintains in the region) so it can process the "natural" gas being "fracked" and extracted from various drilled and tapped sites on the Marcellus Shale basin. His sorcery or doublespeak went something like this:

Yes, I guess you could say that your community will be exposed to a significant increase in the already heightened amount of emissions you are exposed to, but this new increase will still be within the emission levels that we our allowed by the Ontario Ministry of the Environment and are far less than what you would be exposed to if we used crude oil to

produce the same amount of feedstock that we are hoping to produce from fracked natural gas. So yes, there will be more emissions but not as much as we could be exposing you to. So yes, you could say that this greener technology will be putting you at greater risk than you were when we solely cracked crude oil.

Closing remarks: After assembling/mapping the regional sensorium that enshrouds Chemical Valley I have come to two primary and damning conclusions: (1) the region's toxic heritage is literally resurfacing, leeching up from these caverns and other dump sites. To echo Michelle Murphy, the ghosts of Chemical Valley's petrochemical past will not be silenced or sealed off, they will not simply disappear in the ubiquity of future time. These toxic ghosts are very much present, having literally made their way into the region's air, water, and in the blood, bones, and chromosomes of local fleshy bodies. (2) The region's petrochemical will to power—the caustic and consensual demand for more of the same—does not appear to falter, even in the face of recurring toxic events or other examples of an instituted slow violence. Sections of the region are simply ignored and sacrificed, and certain communities and ecologies are rendered “more at risk” than others. The industry's main response to its documented history of spills is to erect more fences and post more warning signs. The combined agential flow of crude oil, capital, and allowable emissions doesn't even pause. The consensus of the cracking furnaces and the venting towers can be seen clearly from the side of road, from certain backyards, and from outer space.

But I don't want to give consensus the last word. There is always one more map, one more anecdote to tell, one more set of unsettling feelings to trace. As I argue in the introductory chapter of this dissertation, cosmopolitics can be understood as both the demand for more and more and the rejection of more of the same. Thus, mapping the regional sensorium of Chemical Valley is something of an impossible task. The cosmopolitical map maker must be content with the idea that it is impossible to map everything. I know that there will always be emotions, conflicts, anecdotes, and ephemera that will elude my note taking and diagraming. But the acceptance of these limits, the knowledge that I am only ever mapping “partial truths” (Clifford 1986), is the very thing that sets my cosmopolitical cartography off from the consensus building of risk managers. The corps of industry and government workers, as well as the legions of so-

called “non-profit” employees, proudly declare their rational enrolment of science and arrive at conclusive and fixed coordinates. A risk manager in Chemical Valley appeals to reason by compiling unadorned and unauthored facts, impartial truths that just happen to benefit the petrochemical industry and perpetuate the agential flow of crude oil, capital, and pollution. But for all their talk of public good will and scientific reasoning, risk managers inevitably try to shut down science, debate, and criticism by pointing to government-regulated allowable emissions as their undisputed permission to pollute. As I have argued throughout this dissertation, the combined rhetoric of allowable emissions and acceptable toxicity thresholds (in which a poison isn’t a poison until it reaches a certain trace level in the blood) constitutes an inherently toxic-harmful sorcery. Not only do companies regularly exceed these allowable emissions but these allowable emission and acceptable blood-body thresholds have consistently been proven to be arbitrary and scientifically unsound, a tacit but often blunt violence that leaves its mark on specific people and specific communities. It is this dangerous and misleading rhetoric-sorcery of the risk manager that I have detailed—weighted down with specifics—in South Riverdale, Niagara, and Chemical Valley.

I want to give the last word to dissensus and relay a frustrating phone call I had with a notorious industry booster in Chemical Valley, shortly after the death of Jim, my stepfather and friend. For the shake of anonymity and brevity, I will continue to use the opposing figures of “the risk manager” and “the cosmopolitical map maker” rather than name the particular risk manager involved.

February 14, 2014: The risk manager in Chemical Valley responds to my expressed criticisms, anger, and grief as irrelevant and secondary to the economy and good works the petrochemical industry has instituted-secured in the capitalist pursuit of happiness. He correctly identifies me as an outsider and he accuses me of having “an agenda.” He also says something about bitter naysayers who don’t really grasp the science of petrochemistry, and how petrochemists make the best regulators of petrochemistry. This conversation doesn’t go well or last long but it becomes a consolidating and declarative moment, a moment I experience once I hang up. The phone call ends with two half-hearted apologies:

“Well I’m sorry if you took offence to anything I said.”

“Oh me too. I sort of lost my cool.”

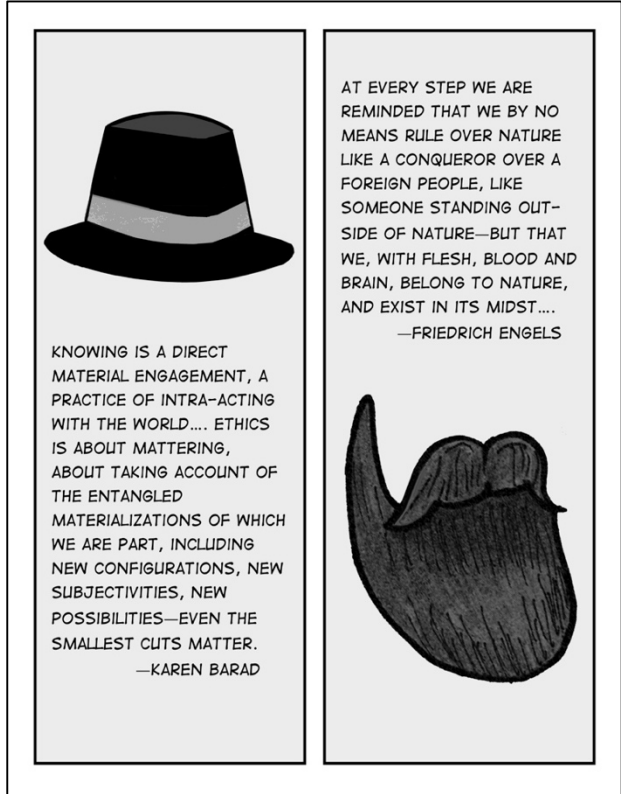
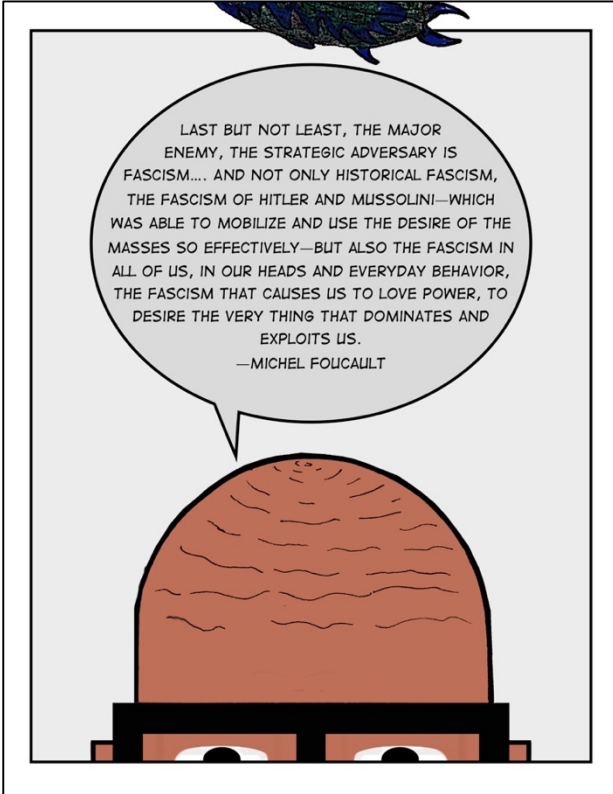
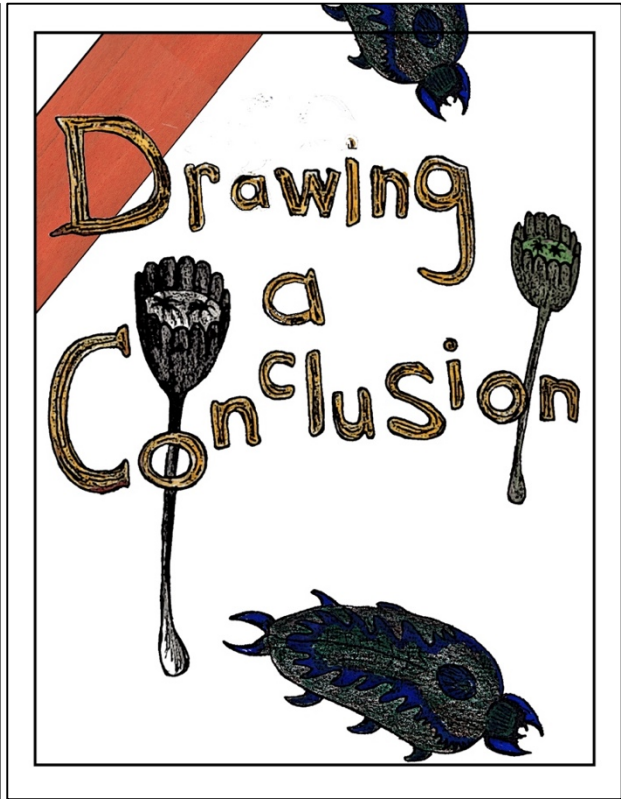
I put the phone down and for the next five minutes I feel a range of emotions: I am angry at myself for apologizing; I am angry at this guy for being completely insensitive; I am also shocked at how much he has managed to upset me. My eyes fill up tears and I begin sobbing.

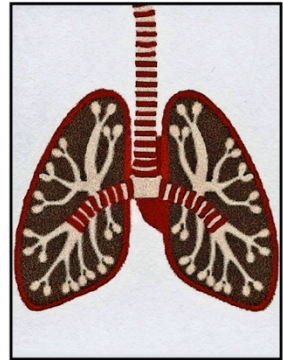
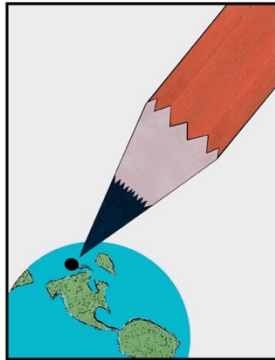
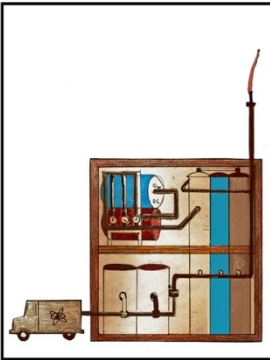
In constructing this anecdote, I realize that I am somewhat embellishing this phone call. I am not distorting the truth, but I am purposely crafting a truth. This embellishment involves acknowledging my own feelings and situatedness, my own partial point of view. My partiality, in turn, doesn't disqualify my voice, doesn't undermine my claims, but actually grounds and emboldens me: Yes of course I have an agenda. I am in pursuit of dissensus. My map making is itself offered as dissensus. Just like everyone else's feelings, mine are charged with political significance, with situated sadnesses, angers, frustrations, interests, and knowledges that are thoroughly interwoven in the petropolitics of Chemical Valley.

This phone call reinforced something I feel strongly about, something I have been arguing throughout this dissertation. It acted as a trigger, causing me to assert a clear position. Yes, I have made these maps, I have assembled these stories. They were cobbled together by mixing the conventional and consensus-building stories of industry, history, and tourism alongside the partial truths, memories, narratives, and community practices of those people who the risk manager calls irrational, bitter, and misguided. The cosmopolitical map maker finds his allies in these very same individuals, those people who refuse to sit quietly at the communal or family table but instead push their chairs away and with teary eyes angrily declare that there is something truly fucked up here. Inspired by these naysayers and killjoys the cosmopolitical map maker is simultaneously sad, angry, depressed, cheerful, and emboldened. Such are the mixture of feelings he experiences in rejecting neoliberal capitalism and its violent aspirations, designs, and pursuit of happiness.

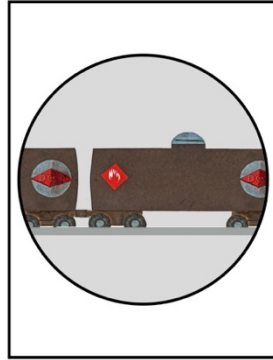
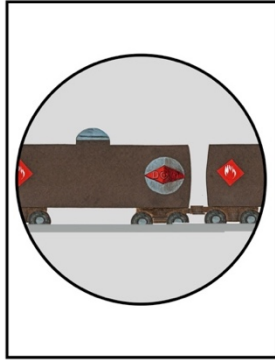
Chapter 6: Drawing a Conclusion

A short comic book finale

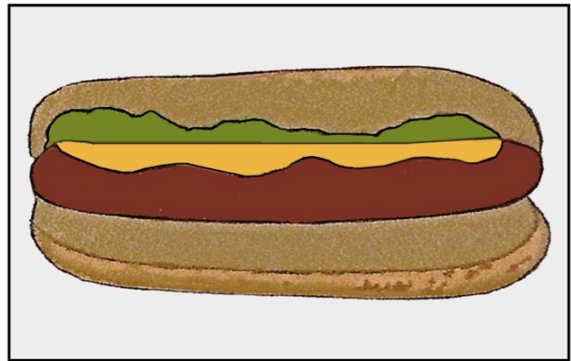
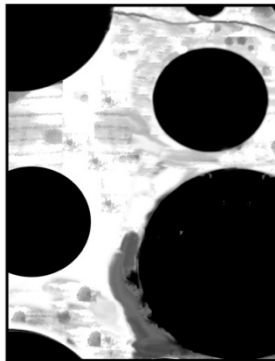
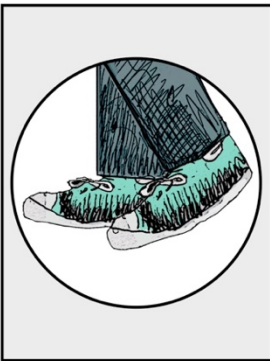


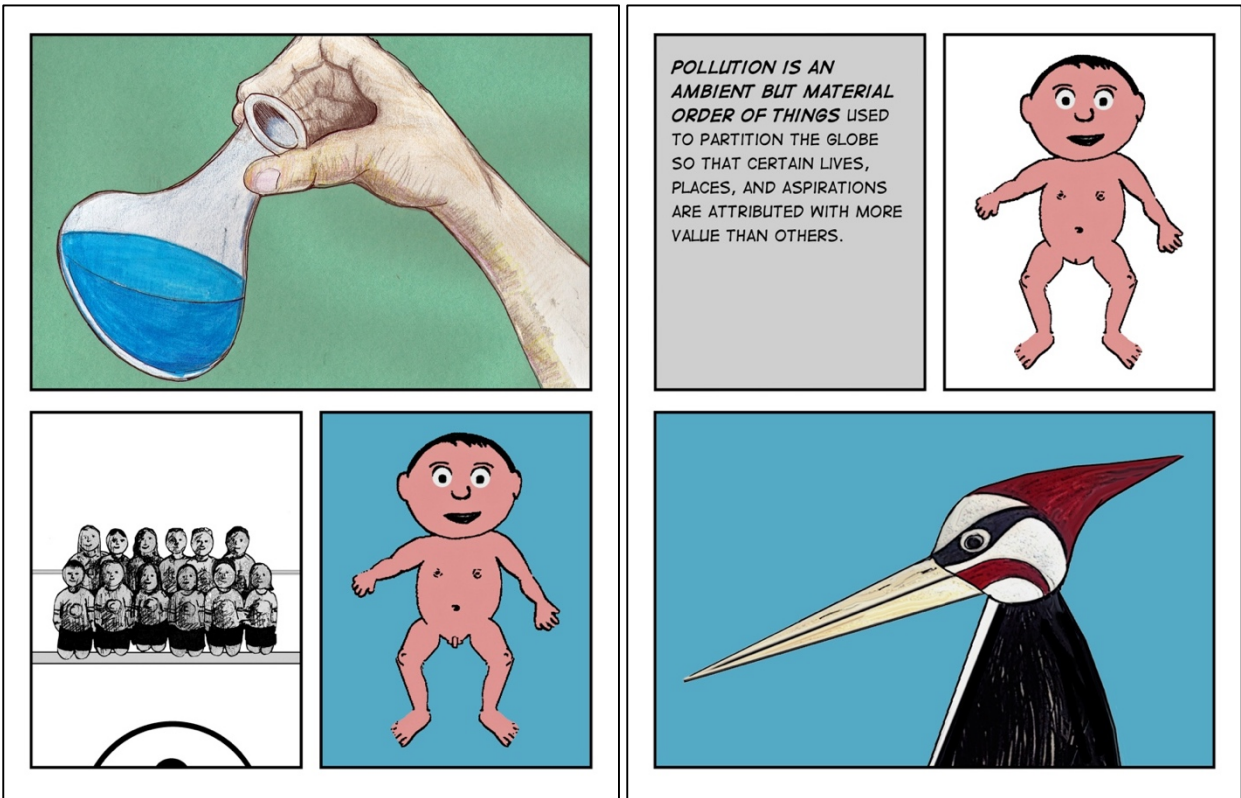
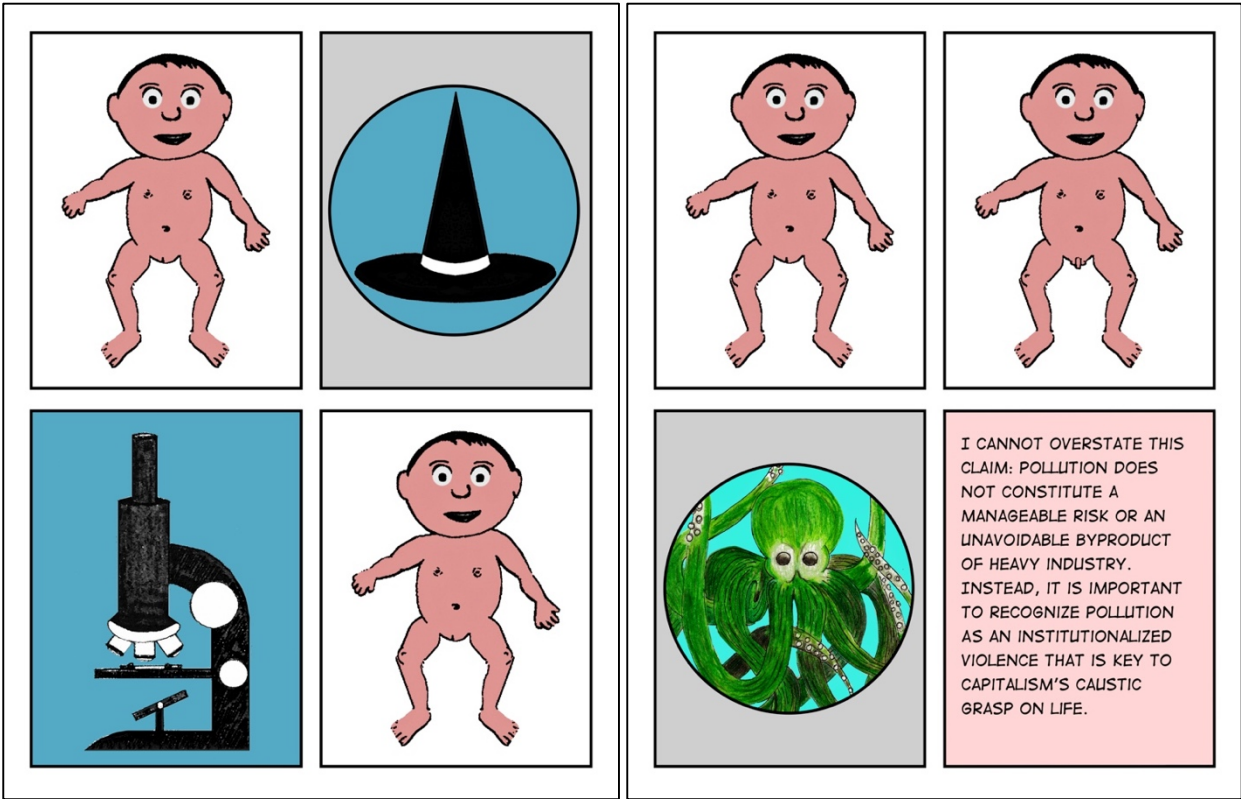


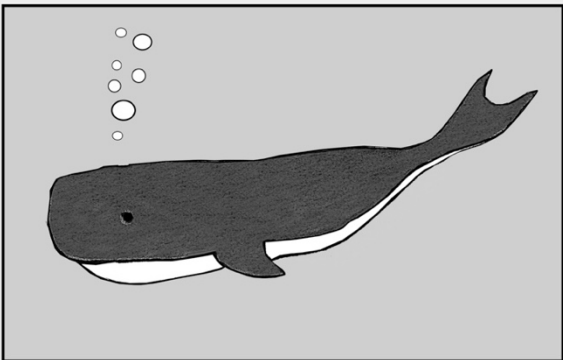
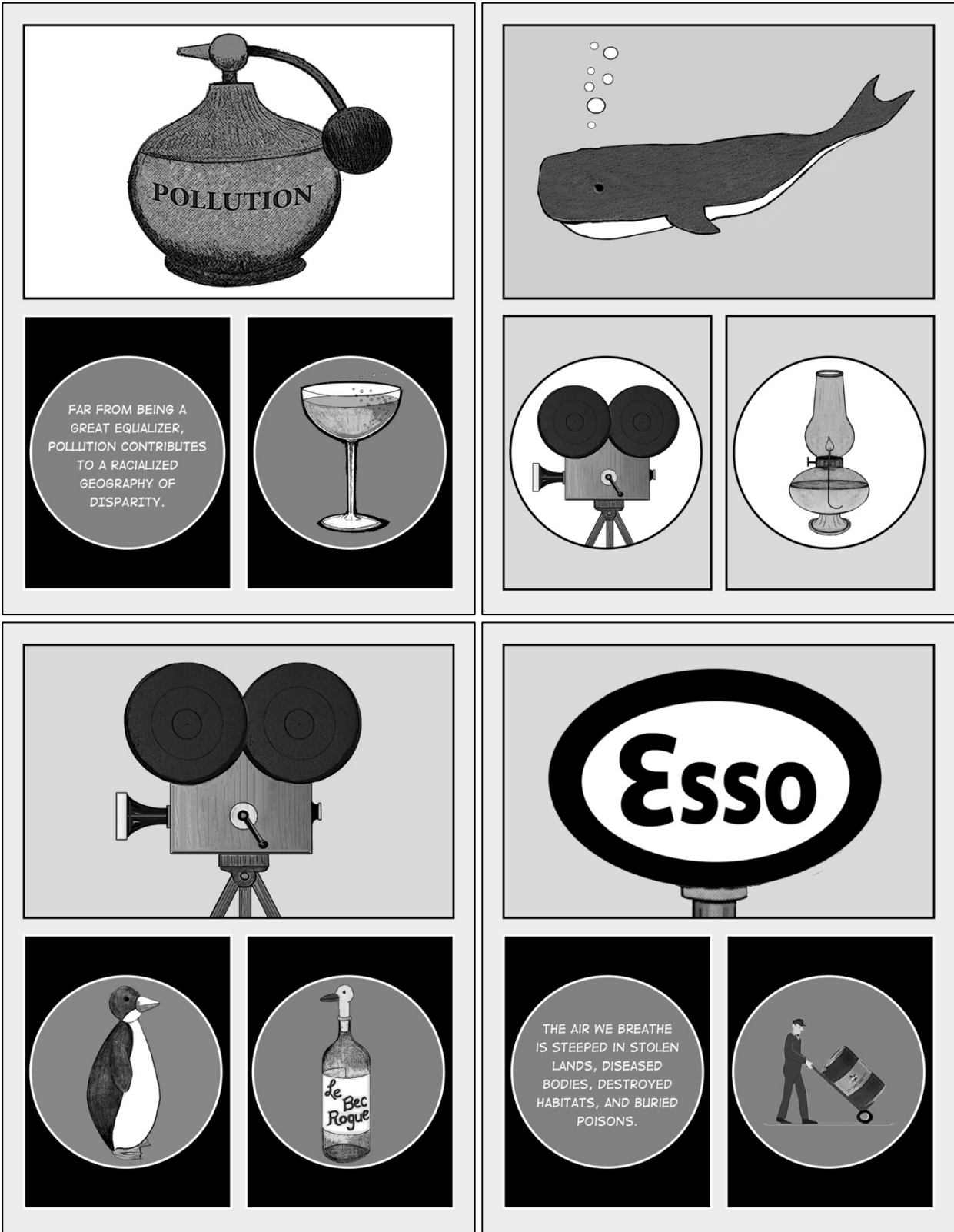
OVER THE COURSE OF FIVE CHAPTERS, I HAVE MAPPED SOME OF THE MESSY, CORPOREAL POLITICS OF INDUSTRIAL POLLUTION, DRAWING ATTENTION TO THE NORMALIZATION OF TOXICITY, HOW KNOWN POISONS HAVE BEEN INTEGRATED INTO EVERYDAY LIFE.



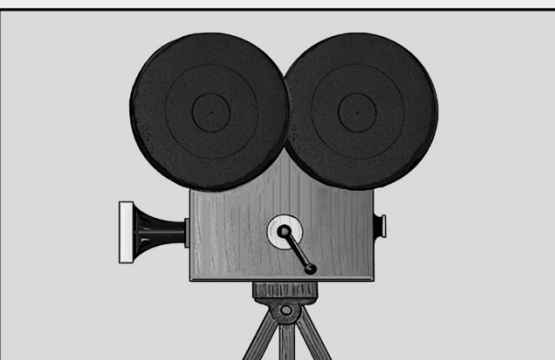
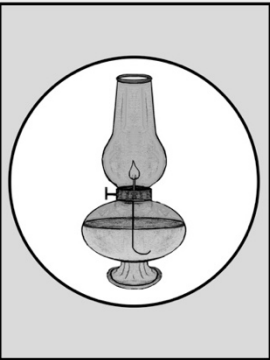
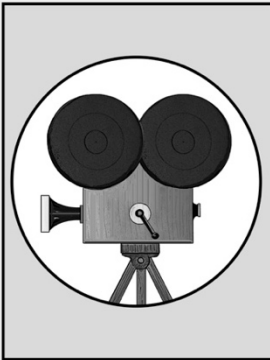
MY GOAL WAS TO SHOWCASE SOME OF THE HYPOCRISY AND COMPLICITY THAT ALLOWS CORPS OF RISK MANAGERS, ENVIRONMENTAL CONSULTANTS, AND PUBLIC HEALTH WORKERS TO TURN NEIGHBOURHOODS, COMMUNITIES, AND ECOLOGIES INTO SACRIFICE ZONES.







FAR FROM BEING A
GREAT EQUALIZER,
POLLUTION CONTRIBUTES
TO A RACIALIZED
GEOGRAPHY OF
DISPARITY.

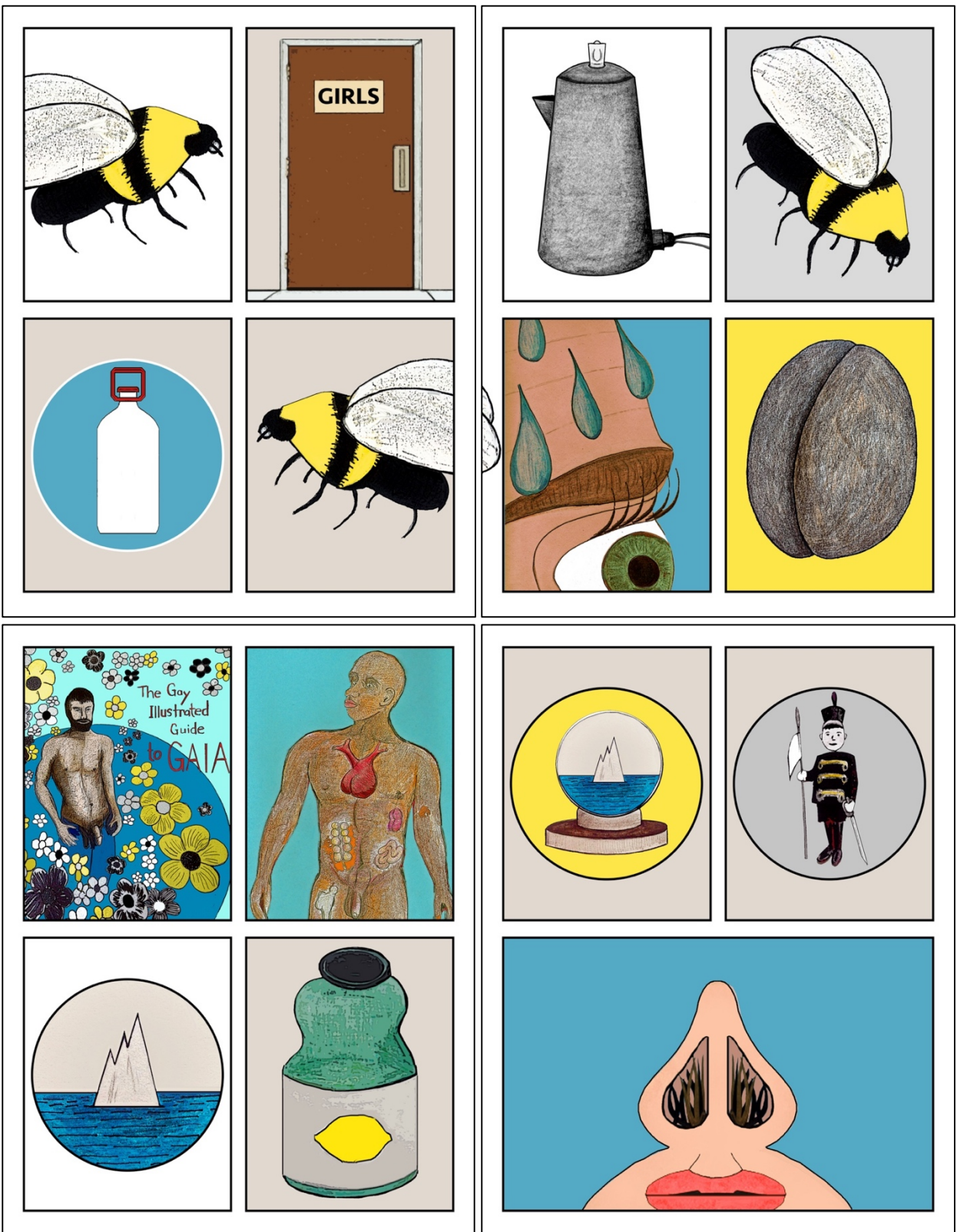


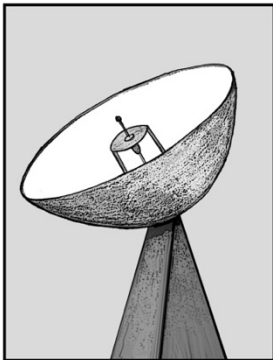
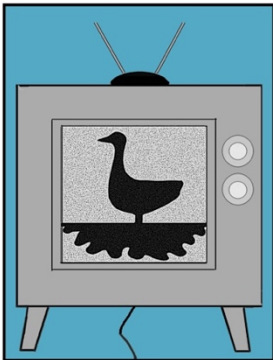
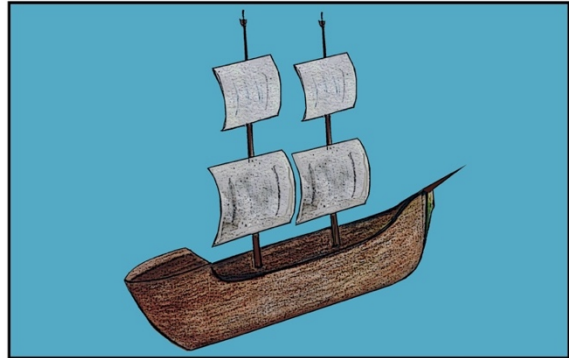
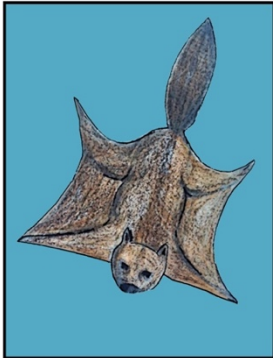
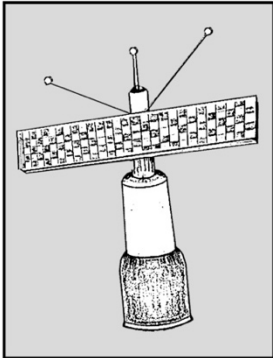
THE AIR WE BREATHE
IS STEEPED IN STOLEN
LANDS, DISEASED
BODIES, DESTROYED
HABITATS, AND BURIED
POISONS.



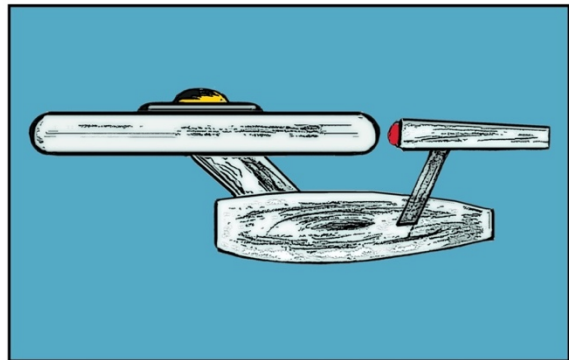
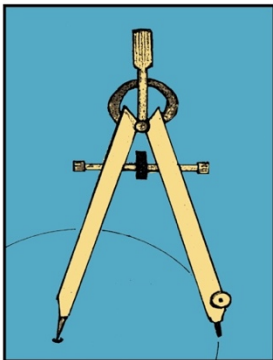
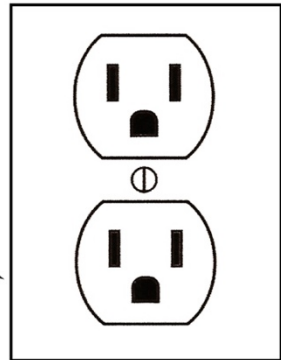




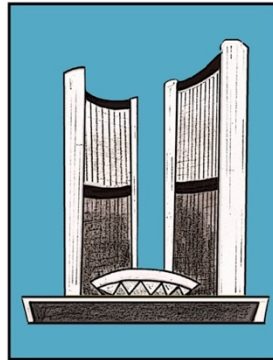





FLESHING OUT THIS AGENTIAL ONTOLOGY IS THE VERY OPPOSITE OF ANTHROPOMORPHISM.



THE OFTEN DECLARED CHARGE OF ANTHRO-POMORPHISM IS ITSELF A HOLDOVER OF WESTERN ENLIGHTENMENT AND ITS IMPOSITION OF THE EUROPEAN COSMOPOLITAN SUBJECT AS THE SOLE SOURCE OF RATIONAL MEANING AND RESPONSIBLE ACTIONS.

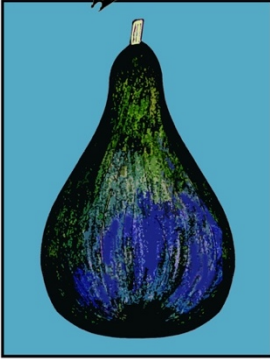
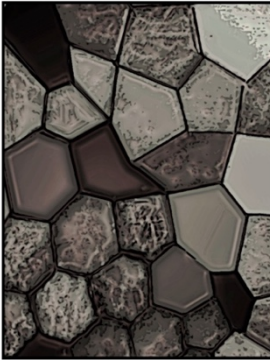
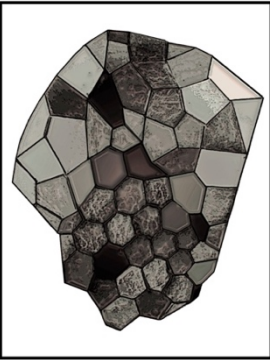


HUMANS ARE NOT THE CENTRE OF UNIVERSE. WE DON'T FUNCTION AS A KEY TO A GRAND REBUS.

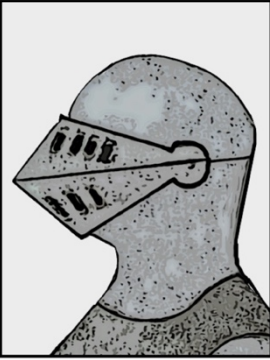



INSTEAD, HUMANS ARE PART AND PARCEL OF MATERIAL POETICS, A COMBINED ANIMAL, VEGETAL, MINERAL, AND MACHINIC WAY OF BEING.

THIS POETRY SITS PATIENTLY AS HALF THOUGHTS AND PARTIAL FEELINGS, WAITING TO BE PUT INTO MORE CONCRETE EXPRESSIONS.

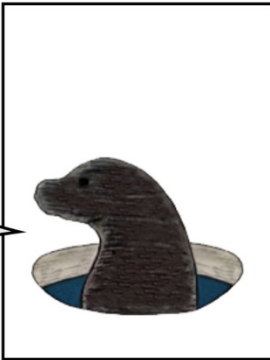
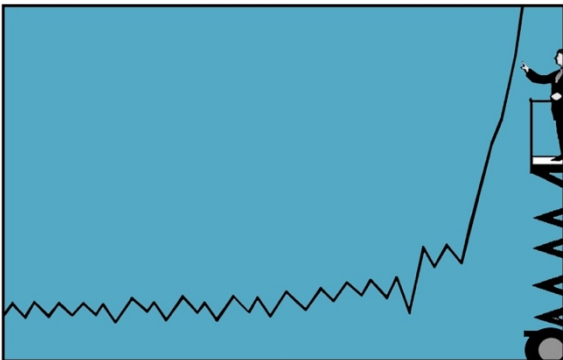






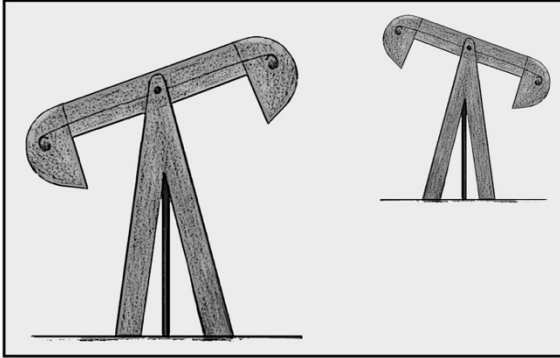
IN SUCH A RECONFIGURED COSMOS, THE JOINT NOTIONS OF AUTHORSHIP AND AGENCY ARE RENDERED SUPERFLUOUS.

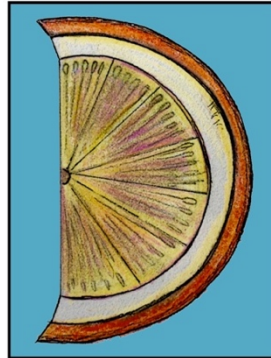
BUT OF COURSE MY INSISTENCE THAT HUMAN LIFE IS ENMESHED IN AN EARTHY AND ATMOSPHERIC GRAMMAR DOES NOT TAKE AWAY FROM THE FACT THAT WE HAVE RADICALLY RESHAPED MUCH OF THE PLANET, AS WELL AS SEVERELY ALTERING ITS COOLING SYSTEM.

THUS, HUMANS ARE EARTH MANAGERS BY DEFAULT.

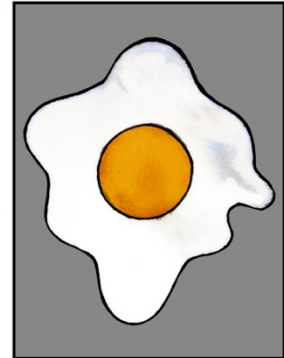


AS I HAVE SHOWN IN THE STORIES OF LEAD IN TORONTO AND PETROLEUM IN SARNIA, THE ONGOING DISSEMINATION OF AMBIENT TOXINS IS BUILT INTO NEOLIBERAL CAPITAL AND ITS OVERLAPPING CLAIMS OF MANAGEMENT, SUCCESS, HEALTH, AND HAPPINESS.



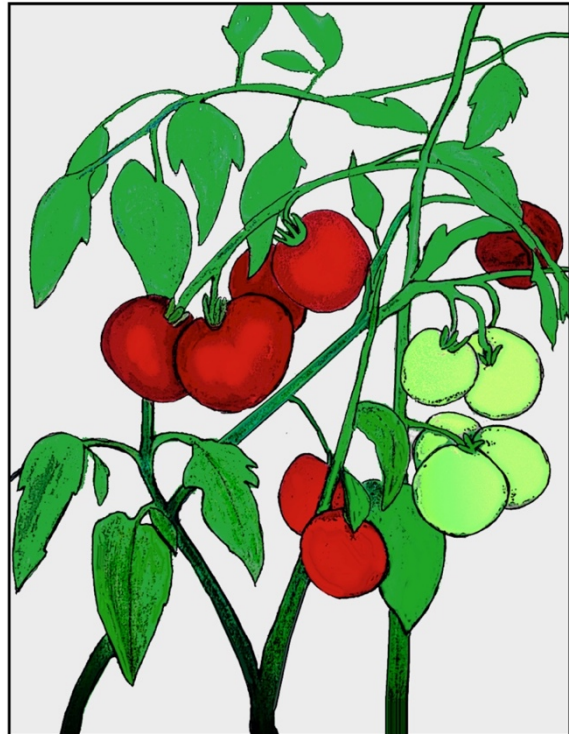
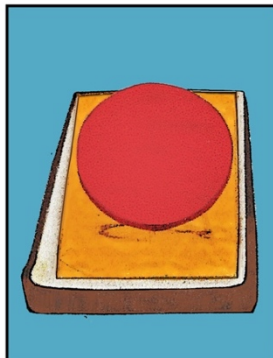
WHILE THESE STORIES REVEAL THE GENERAL ACCEPTANCE OF POLLUTION AND THE DAMAGE THAT IT LEAVES IN ITS WAKE, THEY ALSO REVEAL PEOPLE ENGAGED IN IMPROVISED ACTS OF DISSENSUS.

IT IS THE PUSH AND PULL UNDERPINNING DAILY LIFE - THE OPPOSING WILLS OF CONSENSUS AND DISSENSUS - THAT I'VE TRIED TO CAPTURE HERE IN THIS PICTURE GAME AND IN MY DISSERTATION AS A WHOLE.



AT SOME POINT IN CONSTRUCTING THESE STORIES OF ECOLOGICAL CONSENSUS AND DISSENSUS, SOMEWHERE NEAR THE END OF THE LONG DISSERTATION PROCESS, I REALIZED WHAT I WANTED TO ACCOMPLISH: TO DEVELOP MY OWN VERSION OF COSMOPOLITICS.

I SUBMIT MY DISSERTATION AS AN APPLIED COSMOPOLITICS: A SITE SPECIFIC BUT SPECULATIVE PRACTICE THAT FOCUSES ON THE AGENTIAL PLAY OF MATTER AND MEANING AS A WAY TO UNDERSCORE THE MAGIC, COUNTERMEMORIES, AND RESISTANCE OF EVERYDAY LIFE.



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