INVISIBLE DAMAGE, IMAGINARY INJURIES, AND THE POLITICAL ECOLOGY OF REDRESS IN A QUEBEC MINING AND SMELTER TOWN

by

Coryn Wolk

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Arts in Geography

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EPIGRAPH

> Human time, regarded in the perspective of geologic time, is much too thin to be discerned—the mark invisible at the end of a ruler. If geologic time could somehow be seen in the perspective of human time, on the other hand, sea level would be rising and falling hundreds of feet, ice would come pouring over continents and as quickly go away. Yucatáns and Floridas would be under the sun one moment and underwater the next, oceans would swing open like doors, mountains would grow like clouds and come down like melting sherbet, continents would crawl like amoebae, rivers would arrive and disappear like rainstreaks down an umbrella, lakes would go away like puddles after rain, and volcanoes would light the earth as if it were a garden full of fireflies. At the end of the program, man shows up—his ticket in his hand. Almost at once, he conceives of private property, dimension stone, and life insurance. When a Mt. St. Helens assaults his sensibilities with an ash cloud eleven miles high, he writes a letter to the New York Times recommending that the mountain be bombed.
>
> — John McPhee, *In Suspect Terrain*

"It is the strangely irrational notion that there is something in the very flow of time that will inevitably cure all ills. Actually, time is neutral. It can be used either destructively or constructively."

– Reverend Dr. Martin Luther King, Jr.

ACKNOWLEDGMENTS

This thesis is dedicated to Joel T. Fry, 1957-2023, whose untimely death of lung cancer is an immeasurable loss of insights, historical knowledge, humor, and scholarly generosity.

Thank you to Marie-Hélène Massy-Emond for your welcome and patience to a stranger on a strange mission during an intense time in your home city.

There are far too many other people for me to thank to list here, so I will just list my favorite more-than-human wayward matter: Hazel, my extremely patient rescue dog. If you are a human reading this and hoped to see your name here, I hope you know that I appreciate you.

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NOTE ON TERMINOLOGY AND TRANSLATIONS

Translations: I have left my French translations to English in standard English-language APA quotation style despite the guidelines calling for treating them as paraphrases. The references that I quoted instead of fully paraphrasing were included because the tone and/or precision of the wording in the quote was important to my analysis. Portraying everything as a paraphrase would de-emphasize those nuances and could add confusion about whether my paraphrases are editorializing the tone of my sources. To ensure full accuracy, readers can retrieve the French-language sources through my citations and compare their own translations.

Indigenous Tribes: I use multiple names for several tribes mentioned and referenced in this thesis, such as Anishinabek, anishinabe, Anishnawbek, Anishinabai. While I chose Anishinabek for my general term for Indigenous people who have lived in the region for thousands of years, historical sources, other academic authors, official First Nations names, and tribes' contemporary self-identification frequently differ from each other. I neither wanted to alter my historical sources nor disrespect the tribes' correct names.

Smelter: I will primarily refer to the smelter as the "Noranda smelter" or "Rouyn-Noranda smelter" depending on context for simplicity's sake. The smelter has gone through several official names, corporate owners, and LLCs over the decades. Other smelters were eventually owned by Noranda (and now Glencore, the smelter's current owner), but there have been no other smelters in Rouyn-Noranda.

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ABSTRACT

Written during the latest of a long series of environmental health and policy crises from the Horne smelter in Rouyn-Noranda, Quebec, this thesis seeks their historical roots and the forces that have made this problem cyclical instead of resolved. The questions and their answers came from ethnographic fieldwork in Rouyn-Noranda in fall 2022, archival research, and connecting existing historical research on Rouyn-Noranda and Canada. Starting with unique 1926 Quebec legislation that codified the future smelter's right to pollute while stripping current and future residents of legal redress, I examine provincial legislators' rhetoric justifying the legislation and then look for precedent conflicts the legislation was designed to preempt. Two examples of these are Trail, British Columbia, and Sudbury, Ontario, which have similar but not identical interlocking histories of colonization, damage, scientific investigations, and suppression of pollution conflict through legal mechanisms and denial. In assessing the impact of the 1926 laws on Rouyn-Noranda through the 1960s, I focus on mine and smelter labor struggles because of their signaling ability as the first- and most-exposed, centrality to the city, and ability to break through a right- and corporate-leaning press. I find evidence of smelter fumes damage and organized complaints beginning in the 1930s, the public records of which are both compelling and minimal enough to warrant further investigation. The smelter's corporate strategy throughout labor and regulatory conflicts fits a game theory analysis of its repeated games with the government and the public. The historical records of Sudbury, Trail, and Rouyn-Noranda dispel myths of unawareness as the primary reason for inaction and a lack of public mobilization about environmental problems before the 1970s. All three smelter cities continue to be

shaped by overlapping forces of colonialist land relations, capitalism, and manipulations of science and perception. This thesis adds and connects Rouyn-Noranda to environmental history research on Canadian smelters, corrects unknown or assumed historical timelines, and offers a strategic context for Rouyn-Noranda residents facing the latest slow crisis.

Chapter 1

INTRODUCTION

In the Rouyn-Noranda branch of the Quebec government archives, a September 18, 1987 letter from Mineraux Noranda Inc., Division Horne offers a Rouyn-Noranda resident $365.85 for damages to his garden from an accidental SO2 fumigation from the Noranda Horne smelter in the center of the city in August 1987 (Minéraux Noranda, Inc. Division Horne). Their tally includes $12.00 for six white pines damaged 10%, $12.50 total for five bacata apple trees damaged at 70%, and $50 for general damages to his plants that include "travail inutile." In the margins, the gardener has written an indignant retort. "Pas suffisant," he writes next to several lines. At the bottom, he briefly describes his large garden and notes that people with much smaller gardens received $200.

Noranda must have upped their offer, for the next document in the archive is a photocopy of a form letter and check for $500 from September 23, 1987. "Insuffisant," the same handwriting retorts. Among other details, he writes, "The offer is insufficient for the apple trees we have five apple trees worth $30.00 each and one worth $100 which makes $250.00 and you offer $15.00. The offer is equally insufficient for the annual flowers. Just the begonias that were completely destroyed represent more than the $30.000 you offer."

He includes a printed list:

"Hedge: 60 pi

Hedge 8 pi

Front: - 1 apple tree $100.00

18 bushes

Flowers

3 planters

Side: 3 bushes

Flowers

Rear: - 1 sucker 4 birch

5 apple trees

Vegetable garden

Greenhouse:

1 or 9 hanging planters

2 flowerpots (bac a fleurs)

13 bushes

24 pi of flowers x 2 ½ width

—-

45 bushes in total

Eleven years earlier, in 1976, Quebec Provincial Court Judge Jean-Charles Coutu chided the "anti-pollution movement." Thanks to a 1965[1] change in Quebec's Loi des Mines, residents of Rouyn-Noranda were pursuing their first opportunity to seek compensation for an SO2 fumigation of their plants by the smelter. The smelter

[1] [1] The 1965 overturning was likely done by Article 315 de la Nouvelle Loi des Mines, Chaptire 34 des Statuts du Québec, 1965. Article 248 of the revised law says all people have right to claim damages from mining work (Coutu, p. 9)

was constructed in the middle of an emerging mining boom town along the shores of Lake Osisko in western Quebec under 1926 provincial legislation that protected its right to pollute from any damages, injunction, or legal action until the 1965 change. Whether the claimants knew it or not, their lawsuit was the first attempt to redress decades of forcibly tolerated harm. Coutu wrote that "One cannot blame the defendant for having in a certain fashion profited from this situation [of legal protection] since this situation was tolerated by all of society" (1976, p. 10). However, Coutu felt that the "anti-pollution movement, after having incited these citizens to formulate a claim, did not follow through by helping these same citizens to formulate their claims in a legal and complete fashion." The 11-page "Judge's Notes" describes the court's process to evaluate these claims on scientific, economic, legal, and ethical bases, a new process that makes no apparent reference to precedents from smelter towns elsewhere. However, by 1976, there were nearly 80 years of relevant scientific and juridical history from smelters across North America.

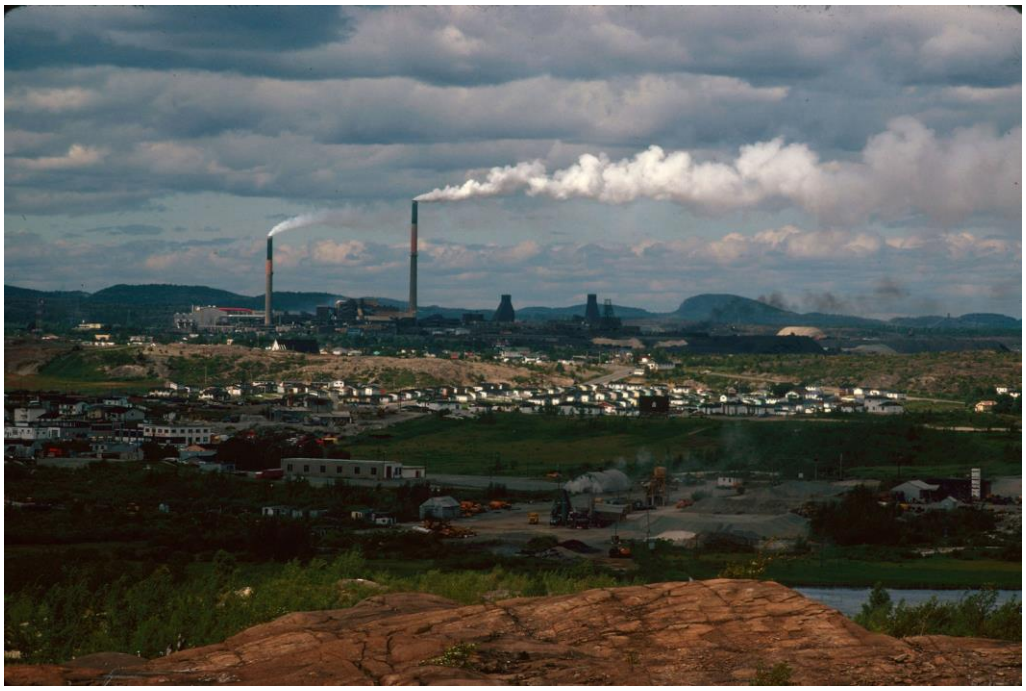

Figure 1.1. Rouyn-Noranda, 1970-1979 (Ruph, img. 90).

In its halting break from historical constraints, this court judgment is a key moment in the overarching questions of this thesis: what are the roots of the current public crisis about the smelter's pollution, and why have these crises recurred throughout its history? By answering these questions, I hope to help the parties in the current crisis contextualize their situation and seek a deeper resolution to it. I will argue that the discontinuity between these histories and the 1976 judgment is primarily due to custom 1926 Quebec provincial legislation that blocked any interference with the smelter's operations, legal or otherwise, until 1965, and legal and political forces that stifled dissent in Rouyn-Noranda throughout the 20th century. I will examine the records of the February 1926 legislative debates around the bills' introduction and passage. From close reading of these debates, the bills, and the case studies of other

Canadian smelters, it became clear that while precedents of smelter fume damage were ignored in the 1976 lawsuit about damage to vegetation, those precedents informed the creation of laws to knowingly enable this damage fifty years earlier. I will therefore include two contemporaneous case studies of Canadian smelters: Trail, British Columbia, and Sudbury, Ontario. I will then return to the 1926-1960s history of Rouyn-Noranda to analyze the role of these laws and the smelter in its early development with the lenses of mass media, as both a reflector and shaper of political realities, and mineral industry labor conflicts, which trouble the categories of industry and community and make underlying issues publicly visible.

The way the scientific and legal histories of Sudbury and Trail influenced each other and Rouyn-Noranda is an example of the non-linearity of progress. To understand the following pages, you have to make your sense of time flexible and tolerate loops and knots like a backstitch sewn by a distracted hand. The vast geological formation underlying Rouyn-Noranda, the Canadian Shield, formed over three billion years ago. About two billion years later, it was covered in mountains. After 1.2 billion years of weathering, the mountains were worn down to stumps. Only in the last few million years did ice ages and glaciers course back and forth across the shield like toddlers playing on a thousand-year-old elder's lap. Finally, around 11,000 years ago, the last glaciers retreated, leaving behind the rocky, argile, lake-dappled surface with a thin cover of soil now referred to as Abitibi-Témiscamingue in this area (Barrett, 2021). The ancestors of modern-day Anishinabek peoples such as the Timiskaming, Abitibiwinni (Pikogan), and Long Point (Winneway) First Nations began living there about 6,000 to 8,000 years ago (Powell, 2021; Conseil de la

Première Nation Abitibiwinni, 2023) Indigenous people of the Shield engaged in small-scale mining and a copper trade that reached all the way to the southeast of what is now the U.S., but in scales and methods that did not cause widespread environmental devastation (Sébastien Tessier, personal communication, September 2022; Fox, 2004).

Most of the history I will cover took place in the past hundred or so years: about 1900 to 2023. In that time, the mineral industry and its humans have transformed the geology that formed over billions of years into categories of products, waste, and toxicants and rearranged its components with as little care for causality as a glacier. This tiny, ephemeral period in geologic time gets prolonged on careful examination by the repetition of its events and seeming causations that never achieved an effect. As in Abitibi-Témiscamingue, moraines of progress sit on the eroded mountains of evidence. To the Canadian Shield, the speed of colonizers' mineral extraction and political progress would be incredible. To humans racing to stake mining claims or waiting for mining permits, ten years of waiting is an eon and a billion years of geology holds the promise of more deposits to unearth. To a parent anticipating their children's futures from arsenic and lead tests, one human lifetime doesn't vanish against the lifetimes of mountains, and all the timelines of pollution converge in their human resting point.

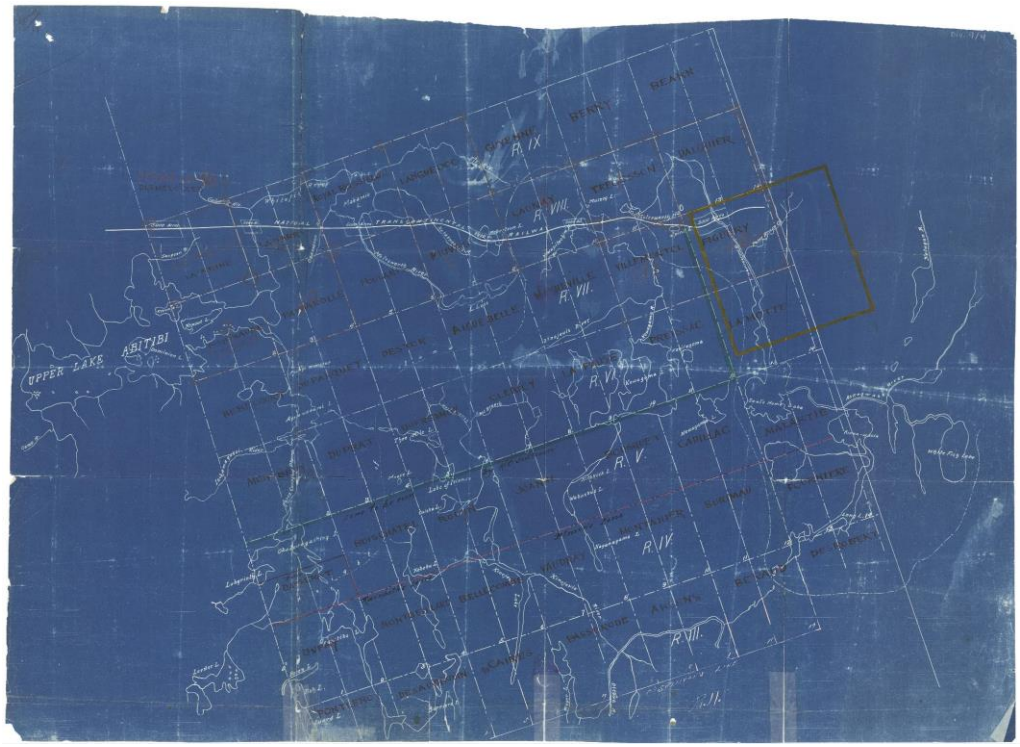

Figure 1.2a: "Plan du Canton Abitibi" showing division of area into gridded cantons and the major waterbodies, 1907 (Taché, Eugène-Etienne).

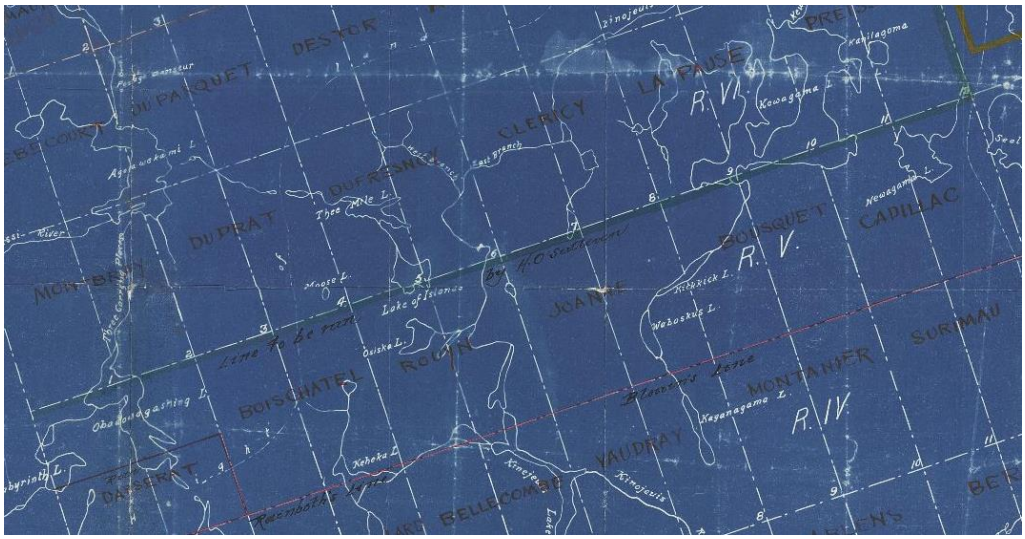

Figure 1.2b: Detail of the Cadillac Fault area and its waterbodies, including the canton of Rouyn and Lake Osisko.

In 2023, Rouyn-Noranda is again the site of an environmental health and regulatory crisis, this time over arsenic emissions from the smelter, which has been owned by Glencore since 2013. The smelter's feedstock is ore, industrial waste, and electronic waste from around the world, from which it primarily extracts copper but also precious metals. It is the largest metallic e-waste recycler in North America and processes a significant percentage of global e-waste (Glencore, 2023). There is little transparency about what exact materials are processed in the smelter. In May 2022, residents learned that Quebec's government had suppressed a chapter of a provincial health report showing higher rates of lung cancer and lung disease locally than elsewhere in the province, mainly due to arsenic emissions (Andrew-Gee, 2023). The news of these cancer rates, their intentional suppression, and the unabated arsenic emissions since a 2018 arsenic crisis set off a massive public outcry and debate. The provincial government and Glencore proposed a regulatory regime centered around a gradual reduction of Rouyn-Noranda's arsenic air pollution standard from 100 ng/m3 to 15 ng/m3 over five years. The provincial standard is 3 ng/m3, and the city's current standard, granted to facilitate the smelter's operations, is 100 ng/m3. Many residents rejected this slow timeline to arrive at an insufficient goal (Bélanger, 2023). After months of meetings, protests, public comment, and polls, in March 2023, the provincial government released the official new plan. It was nearly identical to the plan proposed in 2022 (MELCCFP, 2023).

One theory that has been raised for the delay in arsenic becoming a public health crisis is that arsenic emissions are odorless, tasteless, and invisible, unlike sulfur fumes and visible particulate emissions that dominated awareness and debates

in the 20th century. However, Rouyn-Noranda's lead poisoning crisis that peaked in awareness in the late 1980s and early 1990s and beryllium emissions crises of the early 2000s did not rely on smell or visual detection (Riggi, 2022). Another theory, tightly connected to the first, is that the extended era of uncontrolled sulfur emissions figuratively and literally masked the less visible threat. A third theory is that the increasing control of sulfur emissions and other recognized pollutants created or was actively used to create a public impression that all pollution management was improving when some were continuing unabated or even growing. And without accustomed signs of pollution or public data, the public had no reason or even necessarily the ability to believe otherwise. These theories are not incompatible, but they are paradoxical: a hazard masks another, but its removal renders the other hazard invisible. Now that the threat of arsenic has become highlighted, it is clear that none of these theories are sufficient to explain how and when environmental hazards are detected, acknowledged, and addressed. The first two stages can be further broken down into when a threat is detectable (in some cases, literally visible) and when different parties are aware of it. If this is the dominant causal chain, one would expect these stages to move generally linearly. I will demonstrate that it is not.

Despite not being widely remembered, the 1976 judgment is also a piece of the revision of North American environmental awareness as only beginning in the 1960 or 1970s, a myth that persists to this day with serious consequences.[2] This myth is not

[2] Even Noel Savard's 1978 dissertation on the history of environmental pollution and anti-pollution activism in Rouyn-Noranda, written by an activist-historian-scientist in a watershed period of local mobilization, only dates awareness of the environmental impacts of mining to a few years earlier: "It wasn't until the beginning of the 1970s

unique to Rouyn-Noranda or even Quebec. This myth is often rooted in a well-intentioned but uncritical assumption that because action follows awareness of environmental issues, a lack of action implies a lack of awareness. For those who brave the details, there are variations on this myth: a lack of action implies a lack of economic payoff; a lack of action implies a lack of available technological interventions. For example, a piece on the Rouyn-Noranda crisis by two researchers in public policy argued that the interim standard of 15 ng/m3, "shows that the level of evidence seems insufficient for the authorities to consider a closure [of the smelter]. They require additional scientific evidence" (Lemor and Montpetit, 2022). Since "awareness" is the most nebulous and public-focused of these three, it is the easiest to blame, even for current problems we are personally aware of. Meanwhile, the clock on action is reset in each dawning of a supposedly new and unprecedented era of awareness of a problem or pollutant. While perpetuating harm in the present, this framing also robs our predecessors of their histories and us of the lessons those histories contain.

In this thesis, I will begin with more detail of the Rouyn-Noranda environmental health and regulatory crisis (or crises) of the past few years and their current state. I will then examine the special 1926 laws and some of their historical context. I will explore what they reveal about attitudes toward the interests of private industry and the public, natural resources, the role of government in development, and the interests of future generations. I will then attempt to answer the question of what

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that people seriously considered the impact of blind and savage mining development on our environment" (pp. 77, 78).

inspired Quebec's government to protect Noranda from consequences for damage that had not yet occurred by looking at the precedents of conflicts from smelters in Trail, British Columbia and Sudbury, Ontario in sequence. For the time frame of about 1890 to 1950, I will highlight not only the legal aspects of these precedents but the cycle of complaints and research, which includes politicization of science, interventions to maintain harm in the interests of industry, and inquiry as a ritual to avoid action.

Then, I will return to Rouyn-Noranda to see how the laws and forces that inspired them influenced the city's history from the 1920s to 1960s. This history of the city will focus heavily on labor. Labor conflicts were able to break through the press silence on controversies related to the smelter, and occupational health issues are frequently a bellwether of environmental health hazards to the general public. The Rouyn-Noranda area's mining labor history reveals contradictions within the generalization of government support for industry. The health of a major industry, its local economy, workers, and residents are often portrayed as synonymous until residents oppose industry, at which point those residents become divisible from the rest. I will show some ways in which these alignments and divisions are apocryphal. In my final analysis, I will briefly return to the Rouyn-Noranda vegetation damage lawsuits of the 1970s and 1980s to reexamine the patterns revealed in the preceding chapters. Through this, I hope to repair the myths of absence in what came before and connect Rouyn-Noranda's history to that of other smelter cities. By seeking alignments in multiple staggered histories of delay, I will identify the forces and strategies that allow them to persist across space and time.

Chapter 2

METHODS

I used a variety of qualitative methods for this research, including ethnographic research in Rouyn-Noranda, observations of environmental conditions in and around Rouyn-Noranda, archival research in the U.S. and Canada, and photography.

I arrived in Rouyn-Noranda in September 2022 to begin a planned road trip to current and proposed critical minerals mining, processing, recycling, and export sites around the southern half of Quebec. Instead, I found myself at a critical point in the public aspects of the conflict over arsenic emissions from the Horne smelter, and I stayed for a month. Dr. Julie Klinger, Principal Investigator on a U.S. National Science Foundation-funded research project on global energy-critical mineral supply chains, had arranged an all-day guided tour of the smelter and meetings with several managers and employees on site early in my visit. After becoming acquainted with several local activists and residents, I was connected to leaders within ARET (Arrêt des rejets et émissions toxiques, or Stop Toxic Emissions and Waste) and REVIMAT (Regroupement Vigilance Mine de l'Abitibi-Témiscamingue, or Abitibi-Témiscamingue Mine Watch Association) and a recently retired pediatrician and neonatologist whose practice and home were both close to the smelter. I was also invited to casual group social events, where I informally asked residents of different backgrounds and activism involvement about their connection to Rouyn-Noranda, feelings about the smelter issue, and experiences or knowledge of pollution.

Figure 2.1: A flyer for the September 23, 2022 protest demanding a 3 ng/m3 arsenic standard. Photograph by the author.

This process was informed by a previous community interviews project of fenceline residents of the Philadelphia Energy Solutions refining complex in 2016 and 2017. Our questions in that project included their levels of awareness, concern, and trust in the refinery and government to understand what underlay an outward image of

acceptance or passivity of a highly visible and polluting industrial site close to their homes. In Rouyn-Noranda, I walked on the side of the September 23, 2023 march about arsenic standards as an observer and took photographs and video. I attended a September 29 press conference about the smelter given by François Legault, soon to be reelected as prime minister of Quebec, although police and vuvuzela-carrying protesters prevented me from hearing the address live. I attended and recorded Glencore's roughly three-hour presentation and public meeting about its FENIX and AERIS plans on October 12 and briefly spoke to representatives at their information tables. Since leaving Rouyn-Noranda, I have stayed updated on developments through regional news and personal communications with residents and conducted extensive archival research in the U.S. and Canada.

Figure 2.2: Vegetation (with blemishes of unknown cause) on Mount Powell, September 2022. Photographs by the author.

I drove solo (besides my dog) to Rouyn-Noranda from the urban U.S. mid-Atlantic, which gave me an immediate sense of the remoteness of the area from major cities and in snowless months. Route 117 is the only direct road to Rouyn-Noranda from Montreal, and after meandering northwest for about 250 miles, sometimes with no cell phone service, it takes a sharp left turn to follow the Cadillac fault through Val-d'Or, Malartic, Rouyn-Noranda, and more active mines than I could count to the Ontario border.[3] Bringing a dog gave me an extra reason for long walks around Rouyn-Noranda and area trails. From the paths along Lake Osisko, I took photos and videos of day-to-day changes and durations of visible emissions from the smelter and observed extensive soil and water testing being done by Glencore contractors. This thesis partly took shape from studying the contents and sponsors of the historical, public service, and decorative markers in Rouyn-Noranda's public parks, which frequently celebrated historical prospectors and mining or urged individual actions to protect the environment such as not disturbing lake sediment or throwing trash in the lake. I hiked to the top of Mount Powell (more of a tall hill) on the western outskirts of Rouyn-Noranda, notable for high lead levels from smelter emissions and being the location of a former gold mine and mill, and made casual observations and photographs of the health and species of vegetation along the trails.[4] My uncertainty about the severity or normalcy of what I observed in the area's environmental

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[3] Route 117 has repeatedly been moved to make way for mining, including a few years ago for gold mining in Malartic–which itself has been moved to make way for mining.

[4] Parts of Mount Powell have high soil lead levels. A 2010 investigation found that contrary to assumptions that the lead came from lead dumped directly in the soil by the Powell Mine's lab, most of it likely came from the smelter (Tassé, 2010).

conditions informed this thesis's analysis of uncertainty in science and public perception. I brought both film and digital cameras with me and experimented with capturing the landscape, including the trope of the smelter stacks' visibility from different locations, and recreating promotional images.

Figure 2.3: [Mine Horne - Distant view of the mine and the city, possibly from Mont Powell in the West] (1942). Note the state of the trees in the foreground.

At the Bibliothèque et Archives nationales du Québec (BAnQ), Rouyn-Noranda branch, archivist Sébastien Tessier provided an illustrated overview of the area's early colonization and mining history and interactions between Indigenous people and prospectors. He and other archivists helped me access archives of resident, government, and Noranda interactions and responses to pollution from the 1940s to early 2000s, including claims for vegetation damage, community meeting notes from

the Notre-Dame neighborhood lead levels crisis, and scientific studies. I also reviewed archives of academic research and historical government and corporate publications on these topics at the library and archives of Université du Québec en Abitibi-Témiscamingue (UQAT) in Rouyn-Noranda. While I was in Rouyn-Noranda, the Quebec government was actively collecting mémoires (statements of memory and history from the collective public) online and in public sessions. I came across the reference to the 1926 law in the Judge's Notes at BAnQ. A local activist I talked to wasn't aware of it and asked me to find more information for her to bring up in a public mémoire session. At the same time, Dr. Pierre Vincelette, a recently retired pediatrician and neonatologist in the Notre-Dame neighborhood, showed me hundreds of pages of medical and scientific studies about arsenic he had printed out to study after learning about the crisis in Rouyn-Noranda. He was primarily seeking the best available scientific knowledge on environmental arsenic exposure, but our interests heavily overlapped in the questions of which studies had influenced historical and current regulatory thresholds. I realized that both questions involved the political economy of scientific research and public memory and that any answers I could find might help residents of Rouyn-Noranda and similar situations understand where their current crisis was situated in history.

After discovering that the early 1980s occupational health study of Noranda workers was not online or in BAnQ archives, I visited the Arthur H. Aufses, Jr., MD Archives of the Icahn School of Medicine at Mount Sinai to scan the 200-page study and contextual documents from the research team's files. Like the authors of several histories of Canadian environmental and labor conflict cited in this thesis, I searched

BAnQ's historical French- and English-language news archives for mentions of these issues and coverage of known major events. Unlike some of the earlier histories, I had the luxury of keyword searches of digital archives. My keywords included Noranda, Rouyn, pollution, sulfur, sulphur (the Canadian spelling), syndicat, grève (strike), fume (to return both fumée and fumes), fonderie (foundry), vegetation, arbre (tree), and Cadenas (for the Loi du Cadenas). For the most part, these news archive searches did not include the Rouyn Noranda Press, L'Abitibi, and other outlets whose digital archives are hosted elsewhere and not keyword-searchable. This would have required manually reviewing thousands of issues and beyond the time available for this thesis. The issues I did read of these papers and the historical context covered in the chapter on media coverage suggest that their editorial positions were similar to those of papers included in my research, although they likely included additional historical information relevant to this thesis.

I followed regional and national radio and online news coverage of the current developments in these issues in Rouyn-Noranda and the provincial government while in Rouyn-Noranda and since returning. I also follow several public Rouyn-Noranda and Abitibi-Témiscamingue Facebook pages and groups, including Conseil régional de l'environnement de l'Abitibi-Témiscamingue, Rouyn-Noranda Old Timers (Twin Cities) (RNOT), Ville de Rouyn-Noranda, Conseil de la Première Nation Abitibiwinni, Long Point First Nation Government, Société d'histoire de Rouyn-Noranda, the Fonderie Horne, Chambre de commerce et d'industrie de Rouyn-Noranda, Revimat (an environmental advocacy organization), and the Société d'histoire de Rouyn-Noranda, for updates on the smelter conflict, to analyze the

smelter's public framing of its operations, gain a general historical and political context for the area, and to observe residents' discussion of the area's history and mineral industry, including responses to Glencore's announcements, comments comparing the present to historical images of the smelter, and memories shared of past times in Rouyn-Noranda.

The Rouyn-Noranda Old Timers (Twin Cities) page demonstrated the complex, often contradictory sentiments many residents have about the smelter. Expressions of nostalgia for decades past appear next to assertions that pollution and environmental conditions have greatly improved. Residents who have moved away regularly post about their connection to and memories of the city, and I noticed the frequent inclusion of images of the smelter stacks in these posts as a neutral or positive symbol of the city. On the Fonderie Horne page, I observed its positive public relations efforts such as workplace holiday celebrations, public movie nights, its bins for accepting residents' e-waste, employee awards, and highlight videos of the above intermixed with promotional footage of its operations and celebration of its longevity in the city. I also observed its rhetorical framing of negative topics such as accidents and pollution, which often emphasized its adherence to regulatory norms, past and anticipated investments in improvements, and commitment to informing the public even in the context of complaints about a lack of information. The comments on the smelter's page were also informative as to public sentiment, with posts receiving a varying mixture of general and specific negative and positive replies. I do not consider any or all of these pages to be perfectly representative of reality. Instead, they suggested broad themes and framings for further investigation in my research.

Chapter 3

BACKROUND AND CONTEXT

Figure 3.1: Heavy rust on the bottom of a car in the center of Rouyn-Noranda, September 23, 2022. Photograph taken by the author.

My first lodging in Rouyn-Noranda was in Rouyn, around the curve of the lake and over the crest of a hill. I noticed rust on the bodies of a few cars on the street, but having spent a lot of time in New England, I assumed it was from road salt during harsh winters. My second lodging was the annex of a family's home in Noranda. Although farther from the smelter than the quartier (neighborhood) Notre-Dame, the smelter's stack and ever-shifting clouds were prominently visible at the end of the street, and I could hear the grinding of the railyard and the alert signal for hot ladles exiting the converter building throughout the night. A few days into my stay, I walked past the family's relatively new car in the driveway and noticed rust on the hood and

body. That's not from road salt, I thought, my stomach sinking. I looked online: road salt is sparingly used around Rouyn-Noranda because winters are generally too cold for it to work. I live in Philadelphia, where I thought I'd seen everything that can happen to a car, and road pollution regularly coats my car with fine layers of dust. When I returned home, I looked at cars in my neighborhood: maybe random patches of rust are common and I'd missed them? No. In 1978, Noranda had to reimburse 2,720 residents for damage to their cars' paint (Andrew-Gee, 2023). The air in Rouyn-Noranda is much better than it used to be, but it still corrodes.

This discordance between progress and continued problems, issues that spark outrage and abnormalities that seem to be normalized, was constantly in my mind as I learned about the recent history of Rouyn-Noranda's air pollution controversies. In July 2022, the Institut national de santé publique du Québec (INSPQ) revealed that up to 14 residents could develop cancer from the smelter's arsenic emissions by 2060 if ambient arsenic levels were not rapidly decreased from their current average of 165 ng/m3 (Blais, 2022a).[5] However, the report also noted that because arsenic emissions had been so high for so long, the average exposure for the 70-year 1991 to 2060 period would remain high even if emissions were rapidly reduced (Valcke, et al., 2022, pp. 13-14). Quebec's provincial standard for ambient air arsenic levels is 3 ng/m3, calculated as a one-year average (Environment Quality Act, 2022). It was also revealed that this information, calculated from data through 2018, had been intentionally withdrawn from a provincial report on Rouyn-Noranda environmental

[5] Most of the research INSPQ used as a basis for its risk calculations dated from the 1980s (Valcke, et al., 2022, pp. 14-16).

health in 2019 (Blais, 2022b). This information seemed to have sent a shockwave through Rouyn-Noranda, and the smelter's ongoing permit reapproval process, expected to be completed by the end of 2022, created timing for mass mobilization.[6] As I attempted to catch up on the rapidly developing issue and its history, I had trouble reconstructing a timeline of awareness and urgency. The large point source of the smelter was not new, of unknown existence to the public until now, or dramatically worse than it had been in living memory, all of which are common triggers of organized public opposition. From reading academic research on social movement campaigns I had participated in, I had noticed that researchers often had difficulty contextualizing the scale and strategies of battle they were present for in the larger struggle. Was I witnessing a critical change in the community's relationship to the smelter or just a brief flare-up of opposition driven by the coincidence of the health report and the five-year permit renewal? If this was actually a dramatic change in the level of concern and organized opposition to the smelter, what had delayed it for over 90 years?

In early 2019, the results of a study of lead, arsenic, and cadmium levels in children in the Notre-Dame neighborhood had caused widespread concern and some mobilization but seemingly less political momentum. Some residents that I spoke to speculated that the impacted families had quickly moved away or didn't want to draw attention to their situation. In 2004, a government body found that the ambient arsenic levels had averaged 1041 ng/m3 in 2000, an unimaginable level (Valcke, et al., 2022,

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[6] Glencore and Quebec's last emissions agreement had been finalized in 2018 (Blais, 2022a)

p. 1, 11). In 2004, the government had recommended that Noranda reduce its arsenic emissions to 10 ng/m3 by 2006 and present a plan to reach 3 ng/m3 (Gerbet and Deshaies, 2022). Noranda had refused, and instead won the right to 200 ng/m3. The permitted level through 2022 was 100 ng/m3. There had been publicized studies finding lead, beryllium, and arsenic poisoning among different sectors of the population since at least the 1980s. But how long were those studies relevant, when the smelter had changed its processes to increase arsenic emissions in the 1990s, reduced emissions in other areas and times, and had a dynamic global feedstock (Andrew-Gee, 2022)? There was still a huge smelter in the center of the city emitting what seemed, to my newcomer eyes, like alarming smoke and fumes. But people seemed shocked by the news, and the local through provincial governments seemed like they lacked a decided strategy.

Some of the dynamics were familiar, though. When I worked on environmental policy and community information related to the Philadelphia Energy Solutions (PES) refining complex in South Philadelphia from 2015 to 2018, I had found myself in an overwhelming, borderline absurd maze of dead-ends ready to confront even a motivated and resourceful member of the public. The results of fenceline benzene monitoring required by law were published as PDF images on one webpage. After a researcher discovered that the Pennsylvania Department of Environmental Protection had failed to notify the public about mandatory public input meetings (which was instead attended primarily by the government and PES) before proceeding with approvals, they asked her if she thought they could hold a meeting to retroactively apply to the approval (Simeone, 2018, pp. 39-41; C. Simeone, personal

communication, 2018). An emergency siren was tested in nearby neighborhoods most months, but no one knew what they were supposed to do if it sounded. In a much larger city than Rouyn-Noranda's 40,000 residents, most Philadelphians ignored the refinery's long existence until a massive explosion sent a fireball and hydrofluoric acid into the sky early in the morning in June 2019 (McLaughlin et al., 2020). The emergency sirens did not sound. The City then dissembled about air monitoring results from the explosion and likely would have supported the refinery's rebuilding if there had been any industry interest (Hiar and Riordan Seville, 2020). Instead, it was demolished, along with hundreds of high-paying union jobs. In Philadelphia, though, the massive refining complex was surrounded by varying configurations of other pollution sources such as highways, freight rail lines, an international airport, and petrochemical terminals. Most of the residents closest to the refinery were Black and/or low-income and thus impacted by additional social determinants of health such as health care access, chronic stress, and substandard housing.[7] These factors made causality from refinery pollution difficult to notice, let alone prove. Many assumed that the difficulty of separating the refinery from its background of pollution and racism contributed to the lack of action. In Rouyn-Noranda, the smelter stands out almost everywhere you look, but the obscurity is equally apparent.

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[7] Philadelphia's fenceline neighborhoods also have a significant population of immigrants and refugees from Latin America and Asia. In contrast, Rouyn-Noranda's population is overwhelmingly white and Canadian-born: in the 2021 census, from 25% sample data, 39,030 of 41,290 Rouyn-Noranda residents' families had been in Canada for three generations or more and the total visible minority population was 1,025 of 41,290 (Statistics Canada, 2023).

Over the months of public "consultations" and debate in 2022, 57% percent of the population expressed opposition to the 15 ng/m3 arsenic standard and wanted the standard 3 ng/m3, and mémoires representing hundreds of people were submitted (Bélanger, 2023). In contrast, the 600 to 700 unionized workers at the smelter are represented by the CSN, which has been publicly neutral in the debate over the arsenic standard. The Métallos union, which represented the smelter workers a few decades ago and currently represents workers at Glencore's CCR refinery in Montreal-Est and at its Raglan Mine in northern Quebec, issued a public letter supporting Glencore's current pollution control plan in August 2022 (Syndicat des Métallos). The Métallos expressed fear that a harsher response to the arsenic emissions could close the smelter and thereby lose its workers jobs at the CCR refinery, which further refines the smelter's anodes. In the letter, the union argued that its ongoing strike at the Raglan Mine proved that it is capable of holding Glencore accountable. During my visit, multiple resident-activists speculated that the union and workers' silence was motivated by fear of the smelter closing. The residents believe that the smelter pays better than mining industry jobs in the area and that many workers are over-leveraged by purchases of homes, pickup trucks, ski-doos, quads, and other popular trappings of consumer wealth. From our conversation with a member of Horne senior management and Quebec media, there is a perception that many residents blame the smelter workers for the pollution and that this has created mutual distrust and even animosity. Some resident-activists expressed frustration about this perception, saying that their targets have always been Glencore and the government, who have far more agency than any workers. One goal of this thesis is to investigate the history of these divisions or the perception of them.

The threat of the smelter closing has loomed over this debate and historical controversies, as I will describe. But the union's fears were unrealized this time. The new attestation (provincial agreement) was supposed to be released in December 2022, but the government delayed it, claiming they did not want to disturb holiday festivities (Andrew-Gee, 2022; Belzile, 2022b). In late January 2023, Glencore received the new attestation. After several weeks for Glencore to read it in privacy, a summary of the new terms was made public in mid-March. In the week before its public release, several mysterious depositions of dark powder were especially apparent on Rouyn-Noranda's omnipresent winter snow (Renaud, 2023a; Belzile, 2022a). The powder was also visible on some homes and cars. The first public response was that residents should avoid the powder and minimize allowing their pets outside. The powder had blown from Glencore's old mine tailings site and was primarily ferric oxide. Then they were told that the powder was actually copper concentrate destined for the smelter, but not to worry about arsenic, because Glencore did not store concentrate containing arsenic outdoors. Glencore and the government were taking samples to determine what not-arsenic the powder contained. In the meantime, Glencore was hastening to remove the contamination, leading to perplexing news footage of workers using a variety of equipment to remove roughly half the snow from a snowbank-covered, frozen landscape (Audet, 2023). Then it was announced that the government had known that Glencore was storing the concentrate outdoors in vast piles, and this had been noted and allowed on the last inspection, but that had actually been illegal all along, and now the government would issue a violation (Belzile, 2023b). At writing, residents still don't know what was in the powder.

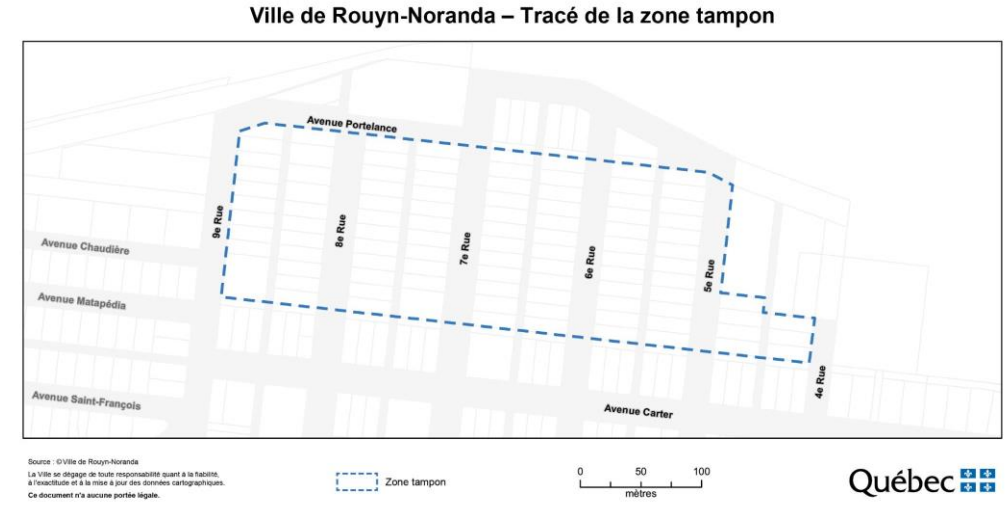

Figure 3.2: The map of the planned zone tampon included in the new attestation (Government of Quebec, 2023b).

The provincial government unveiled the summary of the new attestation on Wednesday, March 15 and held a formal press conference the next day. The new attestation confirmed that a 15 ng/m3 arsenic standard in five years remained the goal and that the province and Glencore planned to go forward with a zone tampon to demolish the 82 buildings containing 200 people's homes closest to the smelter's south fenceline and relocate their residents. The government will pay for the relocation and new homes in a "new neighborhood offering a better quality of life" at an estimated budget of $58 million (Government of Quebec, 2023a). Glencore will pay for the demolition of the vacated buildings and the construction of what they call a "green screen" of vegetation between the smelter and the remaining neighborhoods of Rouyn-Noranda. The government also plans to spend $10 million on "research on the impacts of emissions of contaminants on health and the environment" related to the smelter by

funding a new research center at the University of Quebec in Abitibi-Témiscamingue (UQAT) that will also research best practices and metallurgical improvements (Renaud and Belzile, 2023a). The other large set of funding, $16.1 million out of a government total of $83 million, will support revitalization and marketing efforts to mitigate the damage the pollution has on Rouyn-Noranda's image (Government of Quebec, 2023a; Government of Quebec, 2023a). Upgrades to the city's air monitoring stations will get $2.6 million.

The only unfunded piece of the government's plan is a new committee of residents, scientific experts, Indigenous people, and others to "permit an oversight that is rigorous, transparent, and independent" in the smelter's adherence to improvement and emissions plans (Government of Quebec, 2023a). This is unlikely what the Long Point, Kebaowek, and Timiskaming First Nations had in mind when they demanded more involvement and information, with Long Point First Nation reminding Glencore and the province that "the operations of the Horne smelter take place on ancestral anishinabe land, territory that was never ceded and for which the Long Point First Nation possesses a title and ancestral rights" (Jung, 2022).

In a press conference on March 16, the mayor of Rouyn-Noranda, Diane Dallaire, said, "For us, our major concern, if [the zone tampon] were confirmed, was to properly inform residents" (quoted in Renaud and Belzile, 2023). They had contacted impacted residents on the day of the press conference, by which point some had already found out from news coverage of the attestation. When questioned, different members of the city government gave conflicting answers about how far in

advance they had known about the zone tampon: weeks, days, or hours. The city government revealed that it did not know where residents would be relocated to, the scale of the project, or what it would do if residents refused to move.[8] The full document of the attestation had not been released yet, which the Minister of the Environment blamed on an act of vandalism at a regional office. He promised that it would be released on March 17 (Gerbet, 2023). The attestation and supporting documents were released on April 12.

The documents revealed more of the recurring strategies and claims that I will analyze in this thesis. Glencore had threatened to close. It had demanded more time for research, planning, and compliance. It had gained, among other concessions from the province, an extra year to submit a plan to reach 3 ng/m3, a goal it deemed impossible in any case (Renaud, 2023b). It deemed the zone tampon essential for this impossible goal, after which it hoped to move the fenceline monitor farther from the smelter. At the October 2022 meeting, Glencore's representatives had claimed that annual fluctuations in arsenic readings were due to changes in prevailing winds but dismissed requests for additional fenceline air monitoring stations on the basis that the south one captured prevailing winds (Viger and Dion, 2022). The attestation documents revealed that Glencore had continued to blame the wind in response to the government's demand for more data on the variable contents of its smelter feed, a rejection that fits

[8] The city had just spent $6.5 million on greening and infrastructure improvements in the neighborhood. The 200 homes will join the 150 people already waiting for government-subsidized housing in Rouyn-Noranda, whose entire existing inventory is only 332 units. There are vague guarantees that residents will not have to pay higher rents or other housing costs (Renaud and Belzile, 2023b).

into larger patterns of data secrecy (Glencore and MELCCFP, 2023 p. 10). It pointed to other pollution sources and background levels. It also questioned the public health bases of the air emissions standards. For its part, Glencore says that this plan is already much faster than they had planned to improve. Amid the layers of decades of this confusion, which also obscures the historical record, I will try to analyze progress and harms. And I will explore the ways in which these cycles of laxity, obscurity, and crisis repeat and look for factors that break them.

Chapter 4

LITERATURE REVIEW

This thesis experiments with different theoretical and disciplinary frameworks to understand how three smelter cities and the consequences of their pollution repeat, overlap, influence each other, are noticed, and are forgotten. There has been little research contextualizing the construction of Rouyn-Noranda's smelter in the legal and environmental precedents of Sudbury or Trail. Most work incorporating all three sites is about the metallurgical and economic histories of the mineral industry. Histories of pollution and social activism in Rouyn-Noranda often use the 1960s or later as their starting point even when they include labor history. In connecting and comparing these three histories, I hope to identify the common origins of the repetitions of harm and the forces that can cease it. To do so, this thesis draws its theoretical framework from research in natural resource policy, colonialism, ecotoxicology, environmental justice, social change, science and technology studies, phenomenology, environmental law, corporate strategy, and game theory.

Max Liboiron's *Pollution is Colonialism* is a foundational text for this thesis and centers land relations as a basis for analyzing the enactment of colonialism, capitalism, and pollution. Colonialism assumes access to land (thus capitalized as Land) to transform it into a Resource for extraction and a sink for pollution (Liboiron, 2020). Liboiron, drawing from others, argues that pollution is an "enactment of ongoing colonial relationships to Land" that can only be fully solved by changing these relationships, not technical advances or even the end of capitalism. Liboiron describes how these relations underlie the assumptions and goals built into dominant

ecotoxicology such as threshold theory, permissible doses, and assimilative capacity. Thus, even scientists contributing valuable knowledge about the responses of organisms to pollution have often done so under the colonial goal of optimizing the practice of pollution. Liboiron emphasizes specificity in terminology and subject and the pitfalls of generalizing -isms and scientific findings or treating them interchangeably. This specificity includes distinguishing between capitalism and colonialism and examining case studies of ecotoxicology results being oversimplified or inappropriately extrapolated to create politically convenient regulations with a veneer of objective science. Liboiron categorizes much of their work in the emerging field of "discard studies," which, within or parallel to larger waste studies, critically engages the underlying systems, beliefs, and definitions of waste (Liboiron, 2014).

I draw from a broad range of researchers in environmental health, toxicology, and the perceptions of both of those. John Cairns Jr. was an early interrogator of the flaws and assumptions in broad applications of threshold theory in ecotoxicology. Jennifer Gabrys critically examines the concept of environmental "sinks" for waste, such as the many ecological unknowns that may disrupt our reliance on them, and articulates the way human bodies are sinks as well (2009). Dr. Irving Selikoff, director of the Environmental and Occupational Health Division of Mount Sinai Hospital in New York, which led the 1982 health study of Noranda workers, was a prolific clinician, researcher, and speaker on occupational and environmental health, most notably asbestos. He was one of the first researchers to describe the compounding interactions of carcinogens (Samuels et al., 2022). Selikoff frequently used and possibly coined the term "the iron hand of latency" to describe delays between

exposure and eventual manifestation of illness from toxicological exposures, and in his philosophy of occupational exposures, he often framed them as "Faustian bargains" being chosen over moral sense (Samuels et al, 2022, p. 289).[9] Selikoff described the different timescales of industry, scientific research, exposure, policymaking, political careers, individual illness, and cumulative tolls, and their impact on effective interventions.

Their work overlaps with research on risk perceptions and the political manipulation of scientific evidence of harm. Technoscience studies scholar and historian Michelle Murphy takes a decolonial approach to analyzing environmental injustices, the manipulation of scientific uncertainty, and the way toxic exposures are made visible or invisible through "regimes of imperceptibility," building on work including Jonathan Crary's term of "suspensions of perception" (Murphy, 2004, p. 267). Javier Auyero and Debora Swistun used the terms "relational anchoring" of risk perception and "labor of confusion" by major institutions to describe community understandings of risks from toxic pollution (2008). In the domain of public policy conflicts, Naomi Oreskes, Erik Conway, and Geoffrey Supran describe the prolongation and misrepresentation of scientific investigations to obscure findings of harm caused by industries or their products. Their methods include detailed rhetorical and content analysis of corporate public messaging over time (Supran and Oreskes, 2020).

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[9] Goethe, the best-known interpreter of the Faust legend, was also a Minister of Mines in what is now Germany (Samuels, et al., 2022, p. 295).

The specific strategies of manipulations of policy, science, and public perception are part of larger power dynamics. Game theory provides a way to analyze the strategies, alliances (real and perceived), and goals in environmental conflicts in a consistent way over different time scales. It can explain why strategies such as regimes of imperceptibility and outcomes such as Faustian bargains appear. Nuanced research and theories of regulatory capture include Jean-Jacques Laffont and Jean Tirole, who proposed agency-theoretic framework that incorporates information asymmetries (1991). Daniel Carpenter and David A. Moss proposed a more concrete definition of the phrase and diagnostic criteria and offered several permutations of its mechanisms and effects (2014). Roger Fisher and William Ury's concepts of the Zone of Possible Agreement (ZOPA) and Best Alternative to a Negotiated Agreement (BATNA) inform my analysis of the rhetorical and strategic positions taken by government, the mineral industry, and individual residents in this thesis such as the repeated threats to close the smelter and the public's options after disappointing regulatory decisions. Game theorist Thomas Schelling's concept of focal points attempts to explain implicitly agreed upon strategies–such as government concessions to hostile industries–and aspects of conflicts that arise as high salience. David Baron's highly cited "A Positive Theory of Moral Management, Social Pressure, and Corporate Social Performance" is a model of structuring a game theory analysis of activists' interactions with corporate social responsibility and firms' interactions to resist social pressure, but among other things, it relies on questionable assumptions that activists' performance has a strong correlation with or is primarily motivated by voluntary contributions (as opposed to survival, for example) and that well-funded

groups will choose more difficult and high-risk corporate targets (2009).[10] Abreu (1988) incorporated discounting in modeling infinitely repeated games with punishments for deviations.

Lastly, there is the theory on the underlying societal values that lead to these conflicts. German-Canadian metallurgist Ursula Franklin's theoretical work includes the sociopolitical dynamics of advances in science and technology, and her theories of technology's ability to control labor and the general public, externalities, and divisible versus indivisible benefits are especially relevant here (Franklin, 1989). These values influence everything from the timescales considered in game theory strategy to the applications of ecotoxicology findings. Like the geology of the Canadian Shield, their dynamic properties are a matter of perspective. Carolyn Murphy has analyzed the "domination over nature," the roots and influence of Edenic concepts of nature, underlying symbology and cultural myths in interactions with nature. Legal theorist Cheryl I. Harris has described the interrelations of whiteness and legal concepts of property in the United States, which has parallels to Quebec and Canadian law. Achille Mbembe's concept of necropolitics takes Michel Foucault's articulation of biopower as its starting point in examining sovereignty and power over death and the ability to live. Necropolitics naturally connects to the theories of colonialism discussed at the start of this chapter: writing about the suspension of rules and legality around

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[10] From a shallow survey of the literature, it seems like business strategists especially like to model consumer boycotts organized by funded activist groups because they fit neatly into existing financial analytical methods. Although Baron is puzzled by "the issue of what the activist does with the [consumer-donated leftover] funds if the firm conceded to the activist’s demand" (22).

killing in the colonies, Mbembe writes, "Instead, colonial terror constantly intertwines with colonially generated fantasies of wilderness and death and fictions to create the effect of the real" (2003, p. 25). Necropolitics describes the deadly policymaking and legal exceptions that enable Rouyn-Noranda residents' disproportionate exposure to carcinogens and other toxic substances in a putatively democratic country, as well as the metaphorical and physical erasure of Anishinabek people in its founding and pollution management strategies

In addition to the works cited in this thesis, there is a growing body of literature about the environmental history and sociology aspects of mining and mining communities in Canada, although much of this research is divided between English and French.

Jessica van Horssen's *A Town Called Asbestos: Environmental Contamination, Health, and Resilience in a Resource Community* examines the asbestos industry from the local and regional scales of Asbestos, Quebec (now renamed Val-des-Sources, including residents' relationship with the industry, secrecy and misinformation, public health crises, and government facilitation of harm (2016).

Catherine Morin Boulais's dissertation about the Malartic open-pit gold mine near Rouyn-Noranda covers a similar spatial and time frame and uses ethnography and a political ecology framework, specifically Henri Lefebvre's social production theory, to analyze the actions and experiences of industry, government, and residents (2022). Mourin Boulais explains that this research was motivated in part by preconceptions of

mineral development in Abitibi and the lack of anthropological study of mines and the mining industry, particularly in Quebec and western countries.

Pamela Stern and Peter V. Hall's "Historical limits: narrowing possibilities in 'Ontario's most historic town'" describes how Cobalt, Ontario, a former mining town not far from Rouyn-Noranda has used the promise of becoming a mining heritage tourism destination to successfully compete for government funding under Canada's neoliberal regime despite the lack of success or real merit in being a mining tourism site (2010). This dependency and reinforcement of a specific self-image has kept the town alive while conscribing other possibilities.

Canadian environmental historians John Sandlos and Arn Keeling have published extensively on the histories and legacies of Canadian mineral industries and the communities that coexist with them, including the book *Mining and Communities in Northern Canada: History, Politics, and Memory* (2015), Indigenous interactions with industries, discard studies, and the timescales of arsenic hazards from the Great Mine at Yellowknife.

Chapter 5

HOW TO BUILD A SMELTER TOWN

Let's return to Monsieur X's apple trees. Quebec's Minister of Colonization, Mines, and Fisheries during Rouyn-Noranda's establishment in the 1920s, J. E. Perrault, would have argued that X should have known better than to plant a garden in Rouyn-Noranda. After all, advance warning to residents of vegetation damage was one of the justifications he gave in legislative debates over laws that established the right of the smelter to emit vegetation-damaging pollution. In the Quebec legislative sessions of February 1926, two special laws were passed: Bill 81, which incorporated the town of Noranda under company leadership and exempted it from certain taxes; and modifications to Quebec's Loi des Mines that granted the smelter legal immunity from any challenge to its operations or damage from its emissions for the entire Rouyn area. The modifications to the Loi des Mines were effective until the law was broadly revised in 1965. These laws are often mentioned in histories of Rouyn-Noranda or its pollution as simple fact, but rarely contextualized in the environmental history of Canada or law. When included in the history of the city, they are generally lumped together as unexceptional steps to establish an adjacent mine and mining city. Analyses of the records of legislative debates from that era tend to cover Quebec more broadly or one or two political figures. The debates over these laws reveal their makers' professed beliefs–sometimes shifting within a single debate–of public and private interests and property, the optimal use of natural resources, the influence of money on lawmakers, and legal right to redress from polluting industries. It is made explicit, and then a matter of consensus, that these laws are designed to remove the rights of residents and even nearby private industries in order to give Noranda a

founding right to operate and pollute. Even within the logic of private property, fundamental rights are removed and preempted without even the nominal inclusion of recourse or compensation. In these debates, there is no imagination of what Rouyn-Noranda would be like fifty or a hundred years later.

In 1926, Rouyn and Noranda were two adjacent but separate mining towns and the center of a regional mining boom. The Noranda mine was operating, and the future Horne smelter was under construction to begin operations in late 1927. Noranda's founders had purchased the mining claim from prospector Edmund Horne in 1922 and begun constructing a planned company town, while Rouyn developed in a rapid but haphazard fashion (Tourisme Rouyn-Noranda, 2019). While Horne is widely and prominently credited with the discovery, there is historical evidence that the Anishinabek First Nations MacKimoot brothers discovered the deposit in 1909 and that this information was somehow shared with Horne (Mathias, 1998, p. 113-115, cited in Citoyen 65, 2022).[11]

Noranda launched its winning strategy of threatening to close in 1925, before the smelter was even built. The Quebec Ministry of Colonization and Mines wanted Noranda to build the smelter at a distance from town, lessening local pollution concerns but increasing Noranda's freight and labor costs. In response, Noranda said it

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[11] BAnQ archivist Sébastien Tessier told me that it was fairly common for prospectors in the area to not only hire Indigenous guides but learn deposit locations from them, a dynamic contrary to the colonizer depictions of the region and prospecting trade. The specifics of this history are unsurprisingly little-documented. In contrast, there is a brass relief of Horne paddling a canoe on the shore of Lake Osisko.

would shut the mine indefinitely and not build any smelter. Chronicling the fight, *La Gazette du Nord* tried to weigh the costs and benefits and revealed that the future damage was already well known: "It's a business of two million dollars, they say, and it will employ hundreds of workers. On the other hand, it is known that the sulfurous gasses emitted by these furnaces destroy the vegetation for an area of several miles. The green forests of Rouyn, Boischâtel and Dufresnoy are called to disappear to a great extent" ("Les smelters seront a Rouyn, 1925, p. 1). The article warned that timber permit holders should therefore hasten to harvest their timber. It did not include reactions from the timber permit holders.

At the time of these February 1926 legislative debates, Rouyn-Noranda was also the center of a lengthy race and legal battle between Ontario and Quebec to extend railway lines to the area and thereby receive a flow of freight profits, timber, mining products, and mineral processing infrastructure (LeBrun, 2018). A watershed boundary lies south of Rouyn-Noranda, and area rivers flow north, which facilitated exploration but prevented the water transport of timber to southern cities(Pelletier, personal communication, September 2022). In the end, Rouyn-Noranda got two freight lines: one from Ontario, then under construction, was completed later in 1926, and a Quebec line was completed in October 1927 (LeBrun, 2018).[12] While both provinces were eager to claim the Cadillac Fault's mining boom, Noranda's proposals to send its ore over the nearby Ontario border had intensified Quebec's urgency.

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[12] A year-round road connecting Rouyn-Noranda to Montreal was not built until fall 1940 with the extension of a major southern road from Mont-Laurier to Rouyn-Noranda (City of Rouyn-Noranda, 2012, p. 16)

Despite these governmental concessions, rapidly developing infrastructure, prior investments, and the immoveable mineral deposits, the liberal majority in the Quebec parliament were eager to further facilitate Noranda and other mining companies' development. While the provincial government continued to promote agriculture, forestry, and colonization for those purposes in the Abitibi region, its budget displayed an increased prioritization of mining (Charron, 2009). As the legislative debates show, the stated justifications for these concessions included a desire to rapidly colonize the "empty" northward regions of Quebec and competition with Ontario's existing concessions to attract mining companies. Bill 81 was framed as supporting Noranda's provision of physical and administrative municipal infrastructure for the workforce rushing to the mining boom by granting it a city charter, dominant legal rights, and tax breaks. The modification to the Loi des Mines further protected Noranda by removing legal rights of that workforce, who are framed as a potential burden to Noranda in both cases despite being integral to the government's colonization goals and Noranda's operations. This began establishing the dynamics between the smelter, "its" city, and residents that are still at work today.

The preamble to Bill 81 includes:

> That, since several years, a large number of people have obtained mineral concessions in the canton of Rouyn, county of Témiscamingue, and that they exploit and continue to exploit the mines situated in this territory;
>
> That the works in the course of execution in the said canton, and the operation of factories and mills that will be erected there, will instigate a considerable inrush of people in the territory described in section 2 of the present law;

> That a large number of people will be obliged to reside in this territory as owners, tenants, exploiters of mines and quarries;
>
> That a large part of this territory will be subdivided in building lots;
>
> That residential houses, churches, schools and other buildings will be erected there;
>
> That aqueducts, systems of lighting and sewers will be installed, and that other public services indispensable to make of the envisaged municipality a modern city and assure the well-being of its inhabitants will be established there;
>
> That in consequence it is an appropriate time to elevate the said territory into a city municipality…

Bill 81, introduced in February 1926 by Deputy of Abitibi Hector Authier after extensive private debate in committee, incorporated the city of Noranda and established a municipal government of a mayor and four échevins (aldermen or magistrates) by petition of Noranda Mines Limited (Assemblee Nationale du Quebec, February 3). The bill is an act of capitalist enclosure, and the roles of the people who will be "obliged" to live there are all described in relation to work and property. The list of infrastructure and technologies Noranda will grant upon its city does not include salubrious air or the natural environment. The five leaders of this new government would be James Murdoch, a lawyer and future Noranda mayor from Toronto; Samuel Clifton Thompson, a mining engineer from New York; Louis Kenneth Fletcher, a mining engineer from Rouyn; Len Hill, an entrepreneur from Ontario; and Ernest Hibbert, a mining manager from Quebec and future manager and mayor of Noranda (Boileau, 2004, p. 6). Members of the opposition party, led by Deputy Arthur Sauvé of Deux-Montagnes, questioned the liberals' sudden interest in the region and the inclusion of two New-York-residing Americans as official leaders of the new city.

Authier, after trying to claim that all of the men were Canadian or British, assured them that two unnamed replacements for the Americans had been accepted in private committee if needed. Despite Sauvé's complaints centering on non-Canadians extracting resources and profits, Prime Minister Tascherau accused him of a lack of patriotism "by trying to disturb the development of the Rouyn region" and said that the nationality of Noranda's parties was irrelevant to the principle of the bill. On top of the complexities and contradictions of Quebec and French-Canadians' place in a British colonial federation on stolen Indigenous land, this was an early move in the constantly changing qualifications for figurative (and sometimes literal) citizenship in Rouyn-Noranda.

Sauvé argued that Bill 81 was motivated by assembly members' financial self-interest. There was no law against members of government holding interests or positions in mining companies, and several took part in this. Sauvé remarked, "It wasn't so long ago, the government totally neglected the Rouyn region, and low and behold, companies are being formed to exploit the mines. It is undoubtedly because ministers and deputies have interests [in Rouyn-area mines] …. From how much time they spend talking about Rouyn, if one believes the interested members, one might believe that it's in this corner of land that the race would be regenerated." Sauvé remarked that Antonin Galipeault, Minister of Public Works and Labor (who held an interest in a mining company) was smirking at his questions, and the two engaged in a debate over whether and why he was laughing and the appropriateness of laughing in parliament. Once the debate returned to the future of their province, Taschereau heatedly accused Sauvé of insinuating that Ministers had illegitimate interests in the

Rouyn area mines. Taschereau and Galipeault then argued passionately in favor of members of government being involved in private industries. If, nearly 100 years later, one might have thought that these laws sprang from misguided but earnest intentions, the assembly's preoccupations and open hypocrisy in these records should disabuse them.

Galipeault asked, "Are we outlawed from empire? …. We should even congratulate men who have enough courage to risk their money in enterprises regarding the development of our grand natural resources …. For me, I wouldn't blush about being director of 100 companies." Galipeault argued that "The province could only gain by being administered by rich or enriched ministers," as they would be less tempted by corruption. Sauvé's indignation was not entirely based on ethics, however, as he focused more on the hypocrisy of the ministers' betrayal of their liberal doctrine and about-face from prior condemnations of conservatives' mining interests. Finally, Deputy Duranleau of Montreal-Laurier broke in. "I'm scandalized by the avowal that a Crown minister can be party to any and all private companies. Where are we going, then? A minister who is a member of companies cannot do all of his duty as minister of the Crown." Taschereau replied, "The Minister of Public Works and Labor didn't say that." When Duranleau argued with him, Taschereau said, "It's time to say with the honorable deputy of Montreal-Laurier, 'where are we going?' We're discussing the Noranda bill" and ended the discussion of industry influence on this or general governmental priorities.

After voting in favor of incorporation with a different, more Canadian set of leaders, the assembly debated provisions allowing the mayor and échevins to grant themselves a $400 annual salary until 1929, commute the smelter's taxes until 1939, and limit the tax rate on Noranda's land. Once again, the justifications were contradictory. When one deputy challenged the $400 salaries, Authier, the bill's sponsor, responded that the law did not grant them; it granted them the right to grant *themselves* the salaries. Deputy Langlais worried that the city council would take out loans during one of the law's special periods that others would have to pay. Deputy Bouchard replied, "They don't have this power." Langlais persisted, "Municipal councils do that sort of thing." Bouchard replied, "In that case, they break the law." Finally, Taschereau argued that, "Since all of the incorporated land will belong to Noranda mines, that would mean that whatever would need to be paid would have to be paid by the company," a promise that was not incorporated in the law's provision before it was passed in a vote. The minutia of the law was thus used to defend it even as a precedent of altering it was created. Authier's justifications for the tax exemption included, "[Noranda] is led by experienced men who know that, to succeed, we must make the same concession for them that have been made for them elsewhere. The Legislature should, it seems to me, accord to companies and capitalists the same advantages offered to them in Ontario … If we do not protect this company, we will leave it to the mercy of malcontents who could hobble the progress of the region." These malcontents and their motivations are not specified. If the region was truly terra nullius, there was no one yet there to prevent the establishment of these industries. The vaguely described malevolent opponents are a precursor to the anti-communist rhetoric that would soon be used to fearmonger about potential critics of Noranda. It is

unclear whether Authier's strategy was motivated by legitimate threats of competition from Ontario or simply colonizing the region at maximum speed. Authier was deeply involved in the railroad race between Quebec and Ontario and knew that Ontario was currently winning, and Ontario had existing smelter capacity (Boileau, 2004). However, Noranda's implausible threat in 1924 to not mine such a promising deposit if it were forced to build the smelter even a few miles away makes it questionable that they would have paid rail freight costs all the way to Ontario if not given these financial incentives.

Deputy Bouchard argued against tax exemptions for mining companies, "Experience teaches that the exception accorded initially for 10 years is prolonged to 20 years, then 20 years." Quebec's mineral industry and corporate policies may have been in their infancy, but the legal and political history of exceptions was not, of course. He continued, "A mineral business either pays or doesn't pay, and it doesn't take 10 years to know. If the Noranda mine doesn't pay, the city will disappear just as it sees the light." Despite this caution, the tax provisions, and then the slightly amended bill, passed.

A few weeks later, on February 23, 1926, the Legislative Assembly debated the modifications to the Loi des Mines that would shape Rouyn-Noranda's history (Assemblee Nationale du Quebec).

> The said law is modified by inserting, after article 101, the following:
>
> 101a. No person can impede or limit the operation of smelters*, refineries or other mineral factories constructed in the canton of Rouyn and the adjacent cantons, by way of injunction or other legal

> procedures. The only recourse of all persons harmed by such operation, when this recourse exists, is by way of damages.
>
> 101b. No property owner, tenant, occupant of land in the canton of Rouyn and the adjacent cantons, and no holder of timber in these cantons can claim damages caused by deleterious fumes and smoke produced in the course of the operations of a smelter, erected in the canton of Rouyn, on a site chosen or approved by the lieutenant governor in council, provided notwithstanding that the plans and quotes of this smelter were preliminarily approved by the superintendent of mines.
>
> This disposition applies to all lands already occupied, conceded, or patented as mineral lands in these cantons.

This amendment was far more sweeping than Bill 81: it removed businesses and residents' legal avenues for redress, could be interpreted as criminalizing potential avenues of intervention, had no end date, and originally applied to the entire province of Quebec. Yet the official record of the legislative debate is much shorter than for Bill 81, and even the objections to the bill barely mention the rights of private citizens or living conditions of current and future residents. Sauvé's only recorded objection regards the dependability of the deposits and the risks of the government and individual investors being misled into wasted investments. Several deputies raised concerns about equal protections for other businesses, including small businesses, other types of smelters, and forest businesses. The only recorded objections specific to the impacts of the smelter itself were from Deputies Grant and Saint-Jacques. Grant, of Champlain said that the clauses about forest boundaries seemed like an overreach by denying their owners all recourse for damages. Presciently, Saint-Jacques, of Argenteuil, said, "About the smelter. It is proposed to us to take away from people who could suffer damages the recourse of injunction that common law grants to them. I wonder if we shouldn't let the tribunals decide damages and not change the law. I

think that all of this could create a very serious situation." This objection is important because it presents an existing right to intervene against damaging pollution that was removed for residents of Rouyn-Noranda, not the blank slate projected from histories of environmental rights that begin in the 1970s. Champlain also objected to the amendment's application to all of Quebec, a stunning overreach that Perrault readily changed to the more modest Rouyn and adjacent cantons."

Figure 5.1: In the 1970s, a sign next to a stream heavily polluted by Noranda reminds the public of Noranda's private property rights and boundaries: "Noranda private land | entry forbidden | all violation of this rule is at your own risk" (Ruph, 1970-1979, img. 181).

To each of these objections, Perrault volleyed the same oblique justifications: this unnamed company was investing millions of dollars in the project, injunctions were too readily sought and would be financially disastrous for the company, the

smelter would provide needed services to a multitude of businesses, and the area was currently empty. Perrault said the smelter would cost "about $4 million" after "$1.5 million in preliminary work" or, in the same debate, "$4 or 5 million. Would companies make such sacrifices of capital without knowing where they're going?"

He later elaborated:

> It is obvious that the company taking that on will not want to be exposed to constantly paying damages or even see its operations halted by a writ of injunction. We're not touching the recourse of damages, if damages there are. My honorable friend knows that an individual can request an injunction just for the purpose of extortion. All that's required is a bond of $500 and the injunction, halting the works, will cause incalculable damage. For that matter, the region where the smelter will be established is currently uninhabited[13] and it's better to warn people who would want to go install themselves there.

[13] The region had long been inhabited by Indigenous people and remains unceded to this day. It was also actively being settled by prospectors, mining-boom merchants, and foresters, among others, as the debates' logic games mention elsewhere.

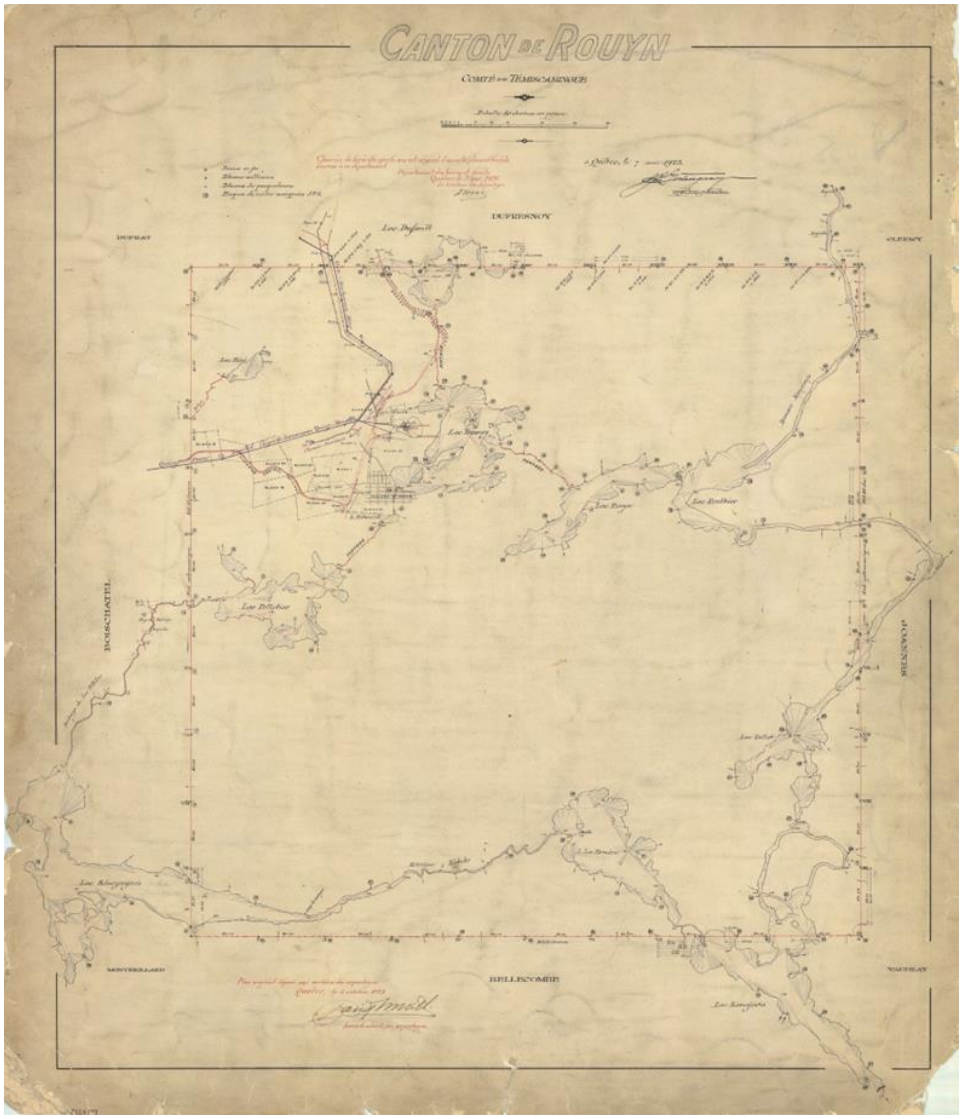

Figure 5.2: Department of Lands and Forests 1923 map of the canton of Rouyn, modified in November 1926. Most visible are the detailed outlines of waterbodies. The developing Rouyn Noranda area is in the upper left, including the Noranda mill and future smelter site. As noted at the top of the map, railway lines were added in fall 1926. The map also shows electricity service lines to Noranda and other mines and forest concessions. This map is notable for the tiny dot in the lower left along the Kekeko River labeled "camp de amerindiens." This acknowledgment of Indigenous presence is rare in maps I examined from that era except those specifically about reservations (Gastonguay).

Rather than a private profit-seeking industry, mineral companies were noble sacrificers of capital (albeit precipitously ready to sacrifice that capital in Ontario if laws were not changed) whose generosity required reciprocity. In contrast, the potential users of injunctions or damage claims–the future residents of Rouyn-Noranda–were framed as malicious and extortionists even as the likelihood of damage was readily admitted and despite the unlikelihood of their planning such an income strategy. Furthermore, there was no corresponding concern for the uncertainties and sacrifices faced by these residents.

Additionally, in Perrault's view, if a tree falls and there is no one to hear it, it does not make a sound, and Indigenous people and mining camp residents outside the body of a mining company were no one. Perrault argued:

> We're talking about a region where there still isn't anything but mining camps. It is better to set up this law right away, as, in this manner, those who will establish themselves there will know in advance what to expect. As for forestry industries, the damages to trees from the fumes and gasses will only happen/be done gradually. The railway won't be completed before next fall, from O'Brien to Rouyn; as for the smelter, it won't be in operation before fall 1927. The damages to trees in the area will then only happen gradually. The lease holders thus have the desired time to remove their wood. By law, they have five years to do it and, consequently, there's no grounds to claim that any material damage can happen to anyone with interests in this project at this time.

Perrault thus set up a rigid system of harm and responsibility for the destructive smelter emissions that implied control over the impacted trees, residents, and timber owners, but not the smelter or its emissions. Timber owners were to rapidly clear trees; trees were to delay dying until the end of the allotted window for timber-clearing, and future residents were to make an educated decision about moving to the area. If this system failed, it would be due to deviance from these parties, not the

smelter or the inherent problems with this plan, such as the inherent limits in humans and ecosystems to absorb toxic pollution and the ability of future residents to provide informed consent. The questions of long-term industries such as agriculture or the fate of future generations–even the descendants of timber owners–and damages other than to revenue streams were entirely absent from the debate.

The absence of people to be harmed was suddenly reversed when Perrault argued about the market demand for the smelter and the need to serve capital. Perrault conflated the entities of human prospectors with mining companies, claiming, "In the Rouyn region, there are about 2,000 prospectors, who are all likely to need a smelter's services." This implausible 2,000 successful prospectors who became 2,000 separate clients of the smelter is another example of the use of fuzzy numbers to give a shallow sense of precision and relative consequence. Under the logic of colonialism, the Indigenous people never counted. Under the logic of capitalism on top of colonialism, the settlers' existence was contingent on their use as a justification for corporate expansion. Rouyn and Noranda already had settler residents at this point (Rouyn had about 600), but their actual numbers and demographics are not mentioned in these debates beyond the claim of 2,000 prospectors (Tourisme Rouyn-Noranda, 2019).

The absurdities and games of quantification of natural systems as financial resources, or Land/Resources, continued in a separate debate from the same legislative session. There was disagreement about the pace and revenues of government forest concessions, the area of forests not yet sold or cleared (a determining factor of the reasonableness of selling vast forestland for timber), and whether forests were an

"inexhaustible" resource or could actually be counted as they were sold for timber. In response to concerns about the size of forest concessions, Minister Mercier fils argued, "When we sell boundaries, let's say 2,000 square miles, that doesn't mean that there's 2,000 miles in forests. To assess the extent of a concession at its real value, you have to deduct the rivers, lakes, streams, burned areas, barren areas devoid of trees, rocky soils, waterways with high rocky banks, rapids, mountain summits, and places where there isn't any wood or the wood is of inferior quality." Suddenly, precision and context reappeared from parties arguing for rapid resource extraction, twisted into a framework in which all ecological elements that could not be extracted as commodities were not merely irrelevant but deductions from value. One answer to why Quebec's extractable resources were not extracted in at least a fiscally sustainable manner is suggested in this debate over forest concessions: they chose to believe that these resources were "inexhaustible," a corollary to the foundational colonialist and capitalist beliefs of endless territorial expansion and limitless growth. The settlers and laborers of Rouyn-Noranda were also to become endlessly replaceable and interchangeable, except, as in timber, where any specificities hindered their role in production. These debates and laws at once enclosed Noranda for capitalist ownership, granted Noranda's owners extractive rights over private property and communal resources outside of its property boundaries, and articulated an impossible vision of unlimited expansion that removed the need to plan for future resource needs. If a resource is unlimited, its net present value is arguably close to zero, and therefore rapidly selling it even for minimal revenue can be portrayed as a windfall.

It remains in question why those members of the legislature who did object do not seem to have done so more forcefully. Potential reasons for the minimal and largely superficial opposition described above include: their objections were not fully reflected in the debate records; objections were raised more from partisanship than ethical concerns; they saw further opposition as a lost cause; and they believed that these laws would not impact their constituents.

Chapter 6

LESSONS LEARNED FROM SUDBURY AND TRAIL

The special Quebec laws for Rouyn-Noranda and the legislative debates around them show that the province was aware that smelter fumes damaged vegetation, that this damage could be cumulative or gradual, that there would be grounds for lawsuits from it, and that other smelters and mining companies had had to pay damage claims. These cases are not named in the debates, and the science and arguments about damage claims are both contorted in the debates, but everything else indicates a fearsome precedent motivating the laws. From its role as a nearby competitor discussed in the previous chapter, scale, and 30-year lead on mining and colonization, copper and nickel smelting at Sudbury, Ontario would have been an obvious inspiration. The dispute between the U.S. and Canada over damages from the Trail smelter's emissions in British Columbia to farmers' crops and federally owned forests in Washington state was beginning to reach international prominence in 1926. The legal and monetary aspects of the conflicts at Sudbury and Trail were about the division of responsibility between smelters and nearby settlers, the science of smelter fume damages to vegetation, financially quantifying legal damages, and mechanisms to end the conflicts without hindering the smelters' continued operations. While governments and smelter owners were surely aware of major U.S. smelter case law such as Madison v. Ducktown Sulphur, Copper & Iron Co. (1904) and Georgia v.

Tennessee Copper Co. (1907),[14] I will focus on Sudbury and Trail because of their shared national origin.

Both Sudbury and Trail have been the subject of excellent environmental and legal histories, but few have examined the parallels between these cases and Rouyn-Noranda. The Trail smelter dispute has overwhelmingly been analyzed in the context of international law and transboundary pollution policy (Kaisjer, 2011, p. 133). Research comparing Sudbury and Rouyn-Noranda's environmental history has predominantly focused on ecological impacts and measuring the deposition of smelter pollution deposition. In addition to the likely direct social and legal precedents these served as for Rouyn-Noranda's planning, these cases are worth examining in depth for the parallels and disjunctures between the political economy, regulatory changes, environmental health impacts, and environmental science progress. In all three cases, settler colonization and mineral processing escalated simultaneously, damages from smelter fumes ensued, and governments and companies responded with strategies of delay and doubt. While I will not focus on technology in this chapter, I will show that technological advances were at least as capable of exacerbating the problems of pollution or building scientific regimes of imperceptibility and delay as resolving them.[15]

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[14] The first western case legally recognizing air pollution as a private nuisance was actually in 1611: William Aldred's Case, 77 Eng. (Barnett, 1974, p. 148).

[15] This analysis is informed by Ursula Franklin and Michelle Murphy's work, including Murphy's "regimes of imperceptibility" (2004).

At Trail, the eventual failures of buffer zones around the smelter, frequently referred to as "smoke leases," and individual damage payouts, and transboundary damage to U.S. federal forests led to an international dispute over the science of SO2's impacts on vegetation. The conflict was brought to a legal end by improved pollution control measures, but the compensation to residents was both late and minimal. Roughly concurrently, at Sudbury, a halt on the use of buffer zones around the smelters encouraged the use of individual settlements, whose increasing volume and collectiveness led to the provincial withdrawal of colonizers' legal rights and the imposition of a legally questionable arbitration system for damage claims. British Columbia copied one of these laws nearly wholesale for its own conflict. The Ontario government spent decades on quiet, repetitive scientific studies on SO2 pollution while delaying action, despite damage to Crown timber. The scientific studies at Trail not only informed studies around Sudbury; they were conducted by some of the same scientists. Processes to capture sulfur gasses from smelting and produce sulfuric acid had been developed before the peak of all three crises.[16] Despite these advances in science and pollution control, they did not lead to major improvements or intervention or a broad public sense of urgency. Similarly, the actual damages suffered by the

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[16] Technology developed by Francis H. Clergue in the mid-1890s (Kuhlberg and Miller, 2018, p. 250). A plant in Coniston, Ontario near Sudbury began producing sulfuric acid from smelter converter gasses in 1925, and Canadian Industries, Limited built a plant capable of producing 150 tons per day of sulfuric acid from its Copper Cliff, Ontario facility in 1929 (Officers of the Ontario Department of Mines, 1932, pp. 35, 38). Sulfur was both a "waste" product and commodity, and handling it and transforming it into commercial products such as fertilizer have their own issues. It is also difficult to track the historical proportions of smelter throughput, sulfur capture capacity, and sulfur emissions. I thus mostly focus on when sulfuric acid plants were or were not implemented in all three cities.

colonists and their agency to avoid them had little influence on their treatment. These cases offer ideas of what the Rouyn-Noranda laws were designed to avoid and what they were designed to protect. The long delay between Rouyn-Noranda's 1920s establishment and 1970s broader acknowledgment of environmental crises is revealed as simply the next development of strategy from previous smelter battles. You might imagine all of these histories as a musical fugue. The melody repeats in overlapping layers, and the composer chooses the spacing and variations.

Trail Smelter: Invisible Damages

> How are the people of Stevens county to be indemnified for loss of forests, retardation of growth, prohibited reforestation and resulting climatic severity and erosion; for crop diminution, impairment of nutritive value of plants, loss of marketability of crops, loss of forage, and loss of benefits of diversification; for need of constant observation, enforced preoccupation with artificial conditions, and consequent diversion from normal conditions; for accelerated deterioration of fences, implements, and other metallic articles; for disadvantages of living in a community on which such a burden has been imposed, with consequent decline of public benefits and suppressed development; for loss of sale, loan and rental value of the land; and for enforced change of abode if they would lead normal lives?
>
> (closing statements of the attorneys for the U.S. government, James Oliver Murdock and Jacob Metzger, pp. 197/5 -198/6, 1930).

The early colonization of the area of Stevens County, Washington near the Canadian border has the usual elements: after 1892, a railroad extension and the encouragement of settlement for agriculture brought settlers to the area. The investigators' report to the International Joint Commission noted that the area included part of the Colville Indian Reservation, and "The North half of this Reservation was thrown open to mining about 1898, and that portion not already allotted to the Indians was opened to settlers in 1903" (Howes and Miller, 1929, p. 10).[17] With colonization, there was rapid clearing of forests for timber, some under the auspices of state and

[17] The report recounts stories that settlers and prospectors had gathered on the edge of the reservation in the days before it opened and literally rushed onto it at a gunshot signal. "Expensive litigation over disputed claims is said to have followed" (Howes and Miller, 1929, p. 10. Native Americans are otherwise not included in the arbitration. In this millenium, the Colville tribes have sued the smelter's current owner, Teck, for the tens of millions of pounds of slag and toxic pollution dumped in the Columbia River by the Trail smelter, triggering a new transboundary legal conflict (Bishop, 2009).

federal forest management (Hostie, et al., 1941, p. 1915-1916). Two smelters began operations nearby in 1896: the Trail lead and zinc smelter, in British Columbia, and a smaller copper and lead smelter in Northport, Washington, about 19 miles down the Columbia River from Trail. The Northport smelter only operated until 1921, broken into two periods: 1906 to 1908 and 1915 to 1921. Though much smaller than Trail (emitting 30 - 70 tons per day of sulfur compared to Trail's up to 350 tons per day), the Northport smelter caused enough damage to lead to litigation and smoke easements. Before 1908, the Northport smelter's owners bought smoke easements covering 2,330 acres from 16 landowners, and from 1916 to 1921, smoke easements from 34 owners covering 5,557 acres. The easements extended north to the Canadian border. In assessing the Trail smelter's responsibility later on, the arbitration tribunal stated that "it does appear that there was considerable litigation in Stevens County courts based on such [fumigation damage] claims" demonstrating damage between 1896 and 1908 (Hostie et all, 1941, p. 1915).

In 1906, the Trail smelter's ownership changed from an American company to Cominco (Consolidated Mining and Smelting Company of Canada),[18] a Canadian company whose parent company was Canadian Pacific Railroad. This change ended the practice of smoke easements on the U.S. side because the Washington state constitution prohibited foreigners from owning property (Wirth, 1996, p. 35). In the words of the tribunal, Cominco "from time to time has greatly added to the plant until

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[18] The smelter still operates and is owned by Teck Resources Limited. Teck and Cominco finalized a merger in 2001, and the company was known as Teck-Cominco until 2008 (Wikipedia, 2023).

it has become one of the best and largest equipped smelting plants on this continent," including a large increase in production in the 1920s (Hostie, et al., 1941, p. 1917). Sulfur emissions climbed from about 5,000 tons per month of sulfur emissions in 1916 to 10,000 tons per month in 1930, or about 300-350 tons per day. Resident complaints and damage claims grew as the Northport-area population plummeted. To what extent these were due to natural resource exhaustion, climate, poor farming, or smelter fumes became a question for the IJC as it adjudicated damages to residents who had increasingly given up and left (Hostie, et al., 1941, p. 1914).

Cominco used a series of now-familiar claims and strategies against the claimants. First, Cominco claimed that the area would not have an agricultural industry "were it not for the markets that the plant created" and that farmers stood to gain more from lawsuits than their alleged farming (Wirth, 1996, p. 35). Cominco then raised the two smelter stacks to 400 feet tall in 1925 and 1927 to better disperse the pollution, but this made the problem worse due to diurnal downdrafts. The first formal complaint on the U.S. side was made by farmer J. H. Stroh in 1926, the year of Rouyn-Noranda's special legislation. In the arbitrators' account, "He was followed by others, and the Smelter Company took the matter up seriously and made a more or less thorough and complete investigation. This investigation convinced the Trail Smelter that damage had been and was being done, and it proceeded to negotiate with the property owners who had made complaints or claims with a view to settlement" (Hostie, et al., 1941, p. 1917).[19] Roughly around the same time, the Quebec

[19] Despite Stroh's complaints, the relative success of his crops was cited by investigators to dismiss the smelter as a reason to dismiss the smelter as the cause of a

government and mining industry were promoting the synergy of mining town consumer markets and area agricultural producers, while Ontario was fighting damage claims from residents lured to Sudbury by promises of excellent farmlands. Notably, residents and local government took collective action against the smelter fumes in this case: in June 1928, the Stevens County Commissioners adopted a resolution about the fumigations and residents formed a "Citizens' Protective Association." Bylaws prohibited members from making settlements without majority support of the board, halting the practice and steering them toward a larger confrontation (Hostie, et al., 1941, p. 1917; Wirth, 1996).

What followed was a political battle of scientific research amongst and between U.S. federal agencies, the Canadian government, and the smelter industry. Canada's governmental bodies and smelter companies worked in full cooperation, and U.S. smelter companies supported Canada's case. Meanwhile, the U.S. case was undermined by contradicting interests between different agencies and levels of government, industry support for Canada's case, and the national interests of polluting U.S. industries along the Canadian and Mexican borders (Wirth, 1996). In 1927, U.S. federal agencies formed an interagency research group called the Smelter Fumes Committee, which lasted until 1938. The U.S. government-led studies on the ecological impacts of SO2 pollution alarmed other smelter companies, which feared the research could lead to increased regulations. They pressured Trail to halt the research by coming to an agreement with the U.S. government. The U.S. government's

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nearby orchard's failure to produce, rightly or wrongly (Howes and Miller, 1929, p. 19).

commitment was short-lived: in 1928, the U.S. federal government proposed cutting funding for USDA SO2 research from $35,000 to $15,000, to which USDA staff replied, "The opposing parties, the smelters, in the past 15 years have spent over a million dollars and have employed experts and concealed all their results …. We ought to have $50,000 a year for 20 years–that would be the ideal thing–and would amount to about what the smelters have spent" (quoted in Wirth, 1996, p. 43).

As the conflict grew, the U.S. and Canadian governments agreed to refer it to the International Joint Commission (IJC) between the U.S. and Canada in 1928 (Wirth, 1996).[20] During the first round of litigation, Cominco's experts made the absurd claim that SO2 damage to tree foliage benefitted trees in the same way as pruning (U.S. Department of State, 1930, Sec. 1 p. 9). Cominco's attorney even argued that the British Columbia smelter arbitration laws, which had duplicated from expropriative smelter laws in Sudbury, should have been applicable in Washington so as not to limit Canadian operations (U.S. Department of State, 1930, Sec. 3 pp. 17-18). In its 1930 closing arguments, the attorneys for the U.S. asked, "What was the purpose of inquiring into the possibility and methods of controlling fumes, if it was not permissible to recommend that the Consolidated be required to control them?" (U.S. Department of State, 1930, Sec. 3 p. 3). Trail said it had built a pilot and operating sulfuric acid plant and would build two more for a total reduction of daily sulfur

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[20] The International Joint Commission was created under the Boundary Waters Treaty of 1909 between the U.S. and Great Britain. The Boundary Waters Treaty's primary purpose was to create a permanent arbitral commission for boundary water negotiations, but it had a mandate for other conflicts as well, including air pollution (Barnett, 1974, p. 163).

emissions by 49 tons and cost of over $10 million, measures the IJC found in good faith (International Joint Commission, 1931, p. 3; Hostie, et al., 1941, p. 1919). The U.S. pointed out that Trail refused to clarify its plans to simultaneously increase production and that the second new plant was dependent on future fertilizer markets (U.S. Department of State, 1930, Sec 2 p. 64). Among the farmers, "it was plain that there was a feeling of distrust," about this solution, especially its effectiveness relative to smelter expansions (Howes and Miller, 1929, p. 37).[21] In 1931, the IJC released its first report and recommendation on the case. It awarded $350,000 in damages to farmers for claims through the end of 1931, much less than sought, and did not grant the U.S. request that Trail be required to reduce emissions (Wirth, 1996; Barnett, 1974, p. 164).[22] Their decision relied heavily on Trail's voluntary pollution reductions despite the contradictory information on their future efficacy. The U.S. State Department rejected the settlement and escalated the fight.

However, the awarding of damages gave USDA scientists hope that their research was promising and would be published (Wirth, 1996, p. 43. They felt that they were on the verge of proving the invisible injury theory. Two USDA scientists published "Small Amounts of Sulfur Dioxide in the Atmosphere; An Improved

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[21] Sure enough, a later report from the tribunal shows a drop in sulfur emissions from 1930 to 1932, a rise from 1932 to 1935, and then an inconclusive trend until 1937 (Hostie, et al., 1941, p. 1919).

[22] Barnett noted that the post-1935 tribunal used common law standards for private nuisance to farmers in the settlement and rejected U.S. claims of violation of sovereignty, which he argued limited its applicability to future transboundary air pollution disputes (1974, p. 164).

Method for the Determination of Sulfur Dioxide when Present in Very Low Concentration in the Air" in 1932, which they planned as the first in a series. The attorney for the U.S. asked them to strategically wait to publish more. Subsequent research budget cuts and threats to scientific journals from smelter companies prevented additional publications.

The U.S. rejection of the settlement led to the formation of a three-person arbitral tribunal in 1935 (Wirth, 1996). The U.S. claims included damage to trees, agriculture, soil, livestock, property, and business interests, but not human health (Hostie, et al., 1941, p. 1920). The omission of human health impacts from the claims does not indicate the ignorance or absence of them in this era, as they were included in Madison v. Duckworth Sulfur and other litigation over 20 years earlier but dismissed as a basis for damage. The tribunal's investigators later wrote, "[I]f only for the psychological effect, it would have been well to have shown more interest in this phase. Some have told us of local and remote doctors telling patients that there could be no cure without removal from the valley" (Howes and Miller, 1929, p. 10).

"To whom it may Concern:

This is to certify that I have been treating....., of Stevens County, Washington, near Northport, Washington, for lead poisoning for the past two weeks.

He claims that he has not been working in any mine lately and that the same must be due to the breathing of the poison fumes or eating of vegetables grown on his ranch that are exposed to smelter fumes.

.....M.D.
(Local Doctor)

Figure 6.1: A copy of a letter from a local patient to a local doctor enclosed in the investigators' report (Howes and Miller, 1929, p. 26).

In compiling the U.S. case, the Department of Agriculture and the Forest Service wanted to research the impacts of pollution, while the Bureau of Mines wanted to support industry and technological solutions (Wirth, 1996). In 1937, one of the government scientists briefed the attorney for the U.S. about their belief and progress in researching invisible injury to vegetation:

> [P]lants subjected to intermittent and continuous fumigation with sulfur dioxide acquire a supersensitiveness to the toxic effects of this compound …. The crux of this case is not demonstrating the exact measureable damage of any particular fumigation at any particular time, at any particular conditions of moisture or temperature, but that continued intermittent fumigation does result in chronic damage, which in some cases results in destruction (as quoted in Wirth, 1996, p. 44).

The Bureau of Mines, worried about the implications for U.S. industries' pollution of Mexico, wrote in an internal report:

> If the theory of invisible injury is true in the Northport valley, it is also true in Mexico. A precedent will have been established and charges will be even more difficult to defend than they now are. Also, it may be possible to find too much SO2 is going from some of our industrial cities into Canada (Ambrose, 1936, as quoted in Wirth, 1996, p. 39).

More baldly, a senior official at the Bureau of Mines wrote, "In the first place it will be necessary to discredit our Department of Agriculture very badly!" (Feldner, 1937, as quoted in Wirth, 1996, p. 42).

After inadequately funding its research from the start, the U.S. further decreased research funding to the point that USDA scientists had to use outdated 1930s data–collected before Cominco made pollution reductions–in the 1937 tribunal hearings (Wirth, 1996). The commitment of the U.S. side to the fight was not entirely

determined by structural forces: the driven and experienced State Department attorney leading the U.S. case, Jacob Metzger, died in 1937 and was replaced with an attorney who was ill-prepared and less motivated against Canada's lawyers.

In contrast, Canada worked closely with industry and sponsored a first round of research by NRC scientists to bolster Trail's case, followed by Cominco-funded NRC research (Wirth, 1996). American Smelting and Refining Company (ASARCO) sponsored research at its own research center in Utah and at Stanford University to disprove the invisible damage theory. Trail's lawyer interacted with ASARCO, Phelps Dodge, and American Sulfur, and the coordination between U.S. corporations and Canadian entities that the U.S. State Department thought of invoking "a 1790s statute against sedition." The NRC aggressively monitored for SO2 emissions coming from the U.S. in Windsor, Ontario by the border. After finding some in 1934, the Canadian government claimed that the U.S. was sending much more SO2 to Canada than vice versa. Neither country sought a continent- or industry-wide reduction in SO2 emissions. Wirth argues that because some of the U.S. government was relatively supportive of impacted farmers and defensive of its national forests, "the difference was that the Canadian government and the smelter industry desired this outcome; the U.S. government merely accepted it" (1996, p. 40). Wirth's attempt at a consistent explanation for the governments' actions is weakened by the Canadian government's inaction over damage to Crown timber in the same period.

In their recommendations to the tribunal, the IJC's investigators wrote that the residents of Stevens County were not "on the whole, desirous of acting the part of

'smelter farmers,'" but were honest and kindly people whose residency predated the problem (Howes and Miller, 1929, p. 28). However, the investigators also believed that farmers were sabotaging themselves through hysterical blaming of SO2: "As in the case of plant abnormality, where the tendency is to blame everything upon SO2, so it is in the case of live stock troubles" (Howes and Miller, 1929, p. 23). In a conclusion that was both advanced in its understanding of the psychological damage in these contexts and patronizingly dismissive of it, they wrote:

> We repeat that actual damage recompense is not enough. There is a feeling of trespass, a definite mental hazard, that is a feature of the undesirable occupancy just as much as the physical damage caused, although less tangible when an attempt is made to estimate or measure …. [T]he position of the farmers of the Zone would have been stronger if they had taken a dignified stand upon this ground, rather than in over-emphasizing, ridiculously so at times, the presence of actual physical damage (Howes and Miller, 1929, p. 28).

The arbitration tribunal issued a preliminary ruling and award in 1938, then issued a final ruling and settlement in 1941, having decided that Trail's pollution was sufficiently under control (Wirth, 1996, pp. 34-35; Barnett, 1974, p. 164). Largely due to the undermining of the U.S.'s case, the arbitrators rejected the invisible injury theory and only ruled on visible damages (Wirth, 1996). Farmers were granted another $78,000 for two fumigation incidents, and the Trail smelter's emission were to be reduced through a combination of meteorologically informed operations, stack fume abatement, and acid recovery, some of which were already underway by then (Wirth, 1996).[23] This limited justice came far too late: the tribunal wrote in 1941 that "As

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[23] The intentionally misleading information about the progress of sulfuric acid plants is still repeated in contemporary histories of the Trail case, so I will clarify. Even

regards the problems arising out of abandonment of properties by their owners, it is to be noted that practically all of such properties, listed in the questionnaire sent out by the former Agent for the United States, Mr. Metzger, appear to have been abandoned prior to the year 1932" (Hostie, et al., 1941, p. 1921). At a 1949 international symposium on air pollution, NRC's lead chemist from the Trail case claimed, "It is hoped that the 'invisible injury' theory has now been disposed of, once and for all time, and will not be resurrected again in problems involving sulfur dioxide damage to plant life" (Wirth, 1996, p. 47).[24]

The settlement of the Trail smelter conflict and the burial of unbiased scientific research into air pollution from non-ferrous smelters reduced scientific interest in the issue. However, it would be resurrected: in the form of the international acid rain confrontation and a local children's blood lead level crisis in the 1970s (Wirth, 1996; Weidenhammer, 2017, p. 41). And if the U.S. State Department could not prevail against the smelter industry, what hope would Rouyn-Noranda's residents have? The seeming paradox of proving "invisible damage" is one way in which the Trail smelter

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Canada's claims during the proceedings were internally contradictory. It seems that a pilot sulfuric acid plant capable of removing 3% of SO2 emissions was built in 1929 (U.S. Department of State, 1930, Sec. 2 p. 64). One to three additional sulfuric acid and fertilizer plants were operational in early 1932 (Government of Canada, 1936, p. 15). A pilot elemental sulfur and ammonium sulphate by-product plant was operational in 1934 and produced 231 tons of sulfur in 1934 and 312 tons of sulfur in 1935. As of 1935, "a large plant is now under construction, involving an expenditure of two and a half millions of dollars" (Government of Canada, 1936, p. 16). While still otherwise confusing, it is clear that Cominco only had a pilot plant as of 1930 and did not have multiple full-scale sulfuric acid plants before 1932.

[24] Metzger was the "former Agent" because he had died (Wirth, 1996, p. 37).

dispute also demonstrates how complex the interactions of presence and absence, addition and subtraction are in proving damage. Because of the rapid consumption of the area forest under settler colonialism, US national development, and early capitalist globalization, much of the dispute revolved around smelter fumes' alleged or potential damage to forests that barely existed or their regeneration. However, in their pre-contact wholeness, the forests and the Indigenous homelands around them existed outside the realm of revenues and compensation. Dispossession was a prerequisite for value and ensuing financial losses. In soils and elsewhere, it was the presence, preexisting and recent, of lead and other depositions that was measured and debated, and their impact on the productivity of soil. The absence of settlers impeded the tribunal's research, but the investigators also judged the holdouts' persistence on doomed farms as evidence of their irrationality and unreliability. The Canadian side's voluminous scientific research and sharing of data between corporations and government supported its victory, but the U.S. side suppressed the scientific process in order to avoid an accumulation of dangerous evidence.

Figure 6.2: One of many extremely rusted pieces of exterior metalwork in Rouyn-Noranda, fall 2022. Photograph by the author.

> It is true we have little scientific or accurate data upon the subject, but it is recognized that the place is full of rotten wire screens .... In the cases of the railroad rails, fences, and screens, always exposed, there really seems to be an injury that is peculiar to this valley (Howes and Miller, 1929, p. 23).

> There is a contention, however, that special damage has been sustained by some owners of improvements on cleared land, in the way of rust and destruction of metal work. There was some slight evidence of such damage, and the Tribunal has included indemnity therefor [sic] in its final award; but since there is an entire absence of any evidence as to the extent or monetary amount of such injury, the indemnity cannot be considered as more than a nominal amount for each of such owners (Hostie, et al., 1941, p. 1922).

Sudbury: Smoke Farmers' Imaginary Grievances

> "The inhabitants are obliged to inhale these deadly fumes, not one day in the week but every day in the week, and not one hour a day, but every hour of every day and night throughout the year, and the Ontario Government resolutely refuses to take the first step toward forcing an abatement of the nuisance. Petition after petition has been presented, appeal after appeal has been made, letter after letter has been forwarded to one department after another–all in vain." ("Ontario's Glass House," 1927, as quoted in Kuhlberg and Miller, 2018, p. 249)

While the Trail smelter conflict between agricultural settlement and the mineral industry was partly a matter of two adjacent countries' competing priorities, Ontario's government willingly constructed the land use conflict and beckoned settlers to the fumes. The provincial government recruited settlers northward for agricultural homesteading from the late 1800s until the mid 1930s through cheap land and marketing that knowingly misrepresented the inherently poor agricultural conditions and destructive air pollution in the Sudbury area (Kuhlberg and Miller, 2018). These campaigns were concurrent with their reports of widespread damage to vegetation. Their case study provides a counterfactual to the still-common argument that residents of industrial areas lose their right to grievances because they have less seniority of existence than the industry or have made an intentional compromise of environmental quality for economic opportunity. The case of Sudbury demonstrates that residents who have no liability for their victimization, having been intentionally misled into danger by the government responsible for preventing it, will not be deemed to merit justice or protection.

As with Rouyn-Noranda, the beginning of mining and smelting in the area was simultaneous with the foundation of the city and first major waves of colonization.

The Report of the Royal Ontario Nickel Commission from 1917 recounts that mineral deposits had been noted by Provincial surveyors in the 1850s, but "passed out of mind, and were only recalled when the Creighton mine was rediscovered; and this did not take place until the construction of the Canadian Pacific railway in the early [1880s] had brought to bear on the latent resources of the Sudbury region the vivifying influences of transportation and population" (30). Sudbury was established as a Canadian Pacific Railroad base camp in 1883 (the eventual owners of Trail), and railroad workers discovered copper in the area (Kuhlberg and Miller, 2018, p. 230). In 1888, copper smelting began (Weidenhammer, 2017, p. 20). Initially, the ore was processed in "roast heaps," massive piles of lumber and ore from which sulfur and other contaminants were burned off in an uncontrolled, highly polluting process.

Ontario's 1902 Report of the Bureau of the Mines noted that "the sulfur dioxide rising from the roast heaps has destroyed most of the vegetation for a mile or two around [Copper Cliff] and has injuriously affected the more sensitive plants as far as Sudbury, three miles to the east," while telegraph and fence wires corrode rapidly (quoted in Kuhlberg Miller, 2018, p. 234). New residents' awareness that the mineral industry's pollution was abnormal and harmful was almost immediate: protests and calls for abatement began in the 1890s or earlier, and *Sudbury Journal* articles from 1899 and 1902 described its impacts on residents' health and infant and child mortality.

> In the stillness of the night and the morning these sulphur fumes settle close to the ground and make human life almost intolerable …. Constant coughing, women and children bleeding at the nose and lungs, throats half burned out from the choking and suffocating influence of the poisonous atmosphere in which they are compelled to live, eat and

> sleep, day and night. The mortality among children at Copper Cliff, owing to this cause, is unusually large, and said to be greater than in any other place in Ontario ("Consistency, Etc", 1899, as quoted in Kuhlberg Miller 246-247).

These early news reports are important to the case of Rouyn-Noranda because they both establish public reports of environmental health impacts from smelter fumes and contrast with gaps in Rouyn-Noranda's local media coverage that will be discussed later in this thesis.

Sudbury-area farmers began seeking damage compensation by the early 1900s. As of 1909, the local sheriff arbitrated settlements between mineral companies and landowners, but by 1914, increases in population, production, pollution, and claims grew beyond his capacity (Kuhlberg and Miller, 2018, p. 237). Mineral companies preferred to settle out of court to avoid legal precedents and the possibility of pollution controls. However, they portrayed themselves as the victims of this arrangement in communication with the provincial government. James A. Mulligan, lawyer for the Mond nickel company, wrote that "some of the claimants have had only imaginary grievances" that Mond nevertheless had to reward, and claimed that some had intentionally moved to the area to later make exaggerated damage claims (Mulligan, 1914, as quoted in Kuhlberg and Miller, 2018, p. 237). Industry representatives described these people as "smoke farmers," an epithet shared between mining and smelting companies' similar battles in Montana and British Columbia.

Another initial solution was an enormous version of Rouyn-Noranda's current zone tampon plan. The mineral companies proposed withdrawing a buffer area around their operations from settlement, and the province complied despite the digression from its colonialist goals (Kuhlberg and Miller, 2018). Companies also privately

purchased land to use as a buffer and even the timber license from the sulfur-damaged Whitefish Lake Indian Reserve of the Atikameksheng Anishnawbek. However, there were still settlers whose pollution exposure posed a threat to the mineral companies, and the province faced pressure to release some of the withdrawn land for settlement. The Ontario government's solution was the 1918 Act Respecting the Settlement of Claims Arising out of the Use of Land for Industrial and Mining Purposes, which allowed any industry to form a private settlement with a landowner that indemnified the industry and any of its future operations from future lawsuits in perpetuity through a modification of the property deed.

> 3. Such an agreement shall, if so expressed therein, bind and enure to the benefit of the heirs, executors, administrators and assigns, or the successors and assigns of the parties thereto, and may relate not only to a mine, industry, factory or works in connection therewith then in operation, but may also related to any mine, industry, factory or works in connection therewith which may thereafter be established by the party paying the compensation, within a specified area, even though the land upon which the mine, industry, factory or works in connection therewith is thereafter operated is not at the time owned or leased by the compensation" (Province of Ontario, p. 58)
>
> ….
>
> 5. The payment of compensation under such agreement shall afford a complete answer to any action which may be brought for damages or for an injunction in respect of any matter for which compensation has been made" (Province of Ontario, p. 59).

From 1915 on, before and after this law, multiple Ontario courts ruled against farmers and other residents who pursued the companies in court, largely because of their metal output's importance to WWI (Kuhlberg and Miller, 2018, p. 241). British Columbia passed a nearly identical law in 1919 to resolve similar industrial conflicts, An Act Respecting Damage to Lands Arising from the Carrying-on of Industrial Operations.

However, in 1919, the judicial tide began to turn. Kuhlberg and Miller quote a judge who similarly ruled out punitive damages but otherwise took a more sympathetic tone toward the plaintiffs than Judge Coutu would nearly 50 years later: "the defendants are not entitled to cause damage to plaintiffs or other farmers [sic] crops" (Andrew Ostroski & Justine Ostroski vs. The Mond Nickel Company Ltd., 1919, cited in Kuhlberg and Miller, 2018, p. 241). In 1920, the Chief Justice of the Supreme Court of Ontario suggested a government commission to "investigate and to report as to the effect upon the soil and upon growing crops of smoke and fumes from the works of the respondent companies passing over them, and to make such recommendations as may be deemed best to prevent injury from that cause" (Hodgins, 1920, quoted in Kuhlberg & Miller, p. 243). In 1920, John H. Clary, a former Crown attorney who owned a farm near Sudbury, filed lawsuits against the companies on behalf of eleven clients and lobbied for government legal and regulatory action. Clary referenced U.S. case law that successfully used an "indictment as a public nuisance" strategy (Kuhlberg and Miller, 2018, p. 245). During this time, University of Toronto researcher J.H. Faull concluded 1918-1920 studies that found SO2 damage to white pines around Lake Temagami in Ontario, although it is unclear how widely known they were (Munton, 2002, p. 134). For the context of Rouyn-Noranda, it is worth emphasizing that Clary's campaign for pollution abatement on the basis of regulatory and legal precedents took place in 1920.

The mineral industry and Ontario's government halted this scientific and legal momentum (Kuhlberg and Miller, 2018, p. 245). Clary did not even get to test his

legal strategy in court. The mineral industry and the Ontario government co-wrote An Act to Provide Compensation for Damage caused by Sulphur Fumes, passed in 1921. The Act diverted damage cases to a binding government-appointed arbitration system, including Clary's pending lawsuits.

> 3.-(1) Where damage is occasioned by sulphur fumes to crops, trees, or other vegetation directly or indirectly, such damage may be determined by the arbitrator so appointed, who shall have exclusive jurisdiction to determine the amount of such damage and to make an award.
>
> (2) The remedies hereunder provided shall be in lieu of all remedies whether in law or in equity to which the person would be entitled but for the passing of this act, and no action shall be taken by way of injunction or otherwise (Province of Ontario, 1921, p. 284)

The law also required injured parties to notify "the person offending" within seven days of the damage, "and in the absence of such notice the arbitrator may disallow any claim for compensation" (p. 284). This would require a rapid response to an acute event, and imposes an impossible rigidity on damage whose date could not be pinpointed, let alone the (disputed) reality of gradual, cumulative damage to vegetation. If the responsible party did not offer "satisfactory compensation," plaintiffs had the right to appeal to the arbitrator before "November first of the year in which the damage is alleged to have occurred" (p. 285). However, the arbitrator's decision was final. As with the 1918 law, financial compensation and injunctions were the main remedies considered and contested, while pollution control of continued operations was not explicitly mentioned.

As in Trail, time and the financial desperation of individuals weakened their ability to resist: while Clary fought to continue his cases, many of his clients settled for small payouts out of urgency (Kuhlberg and Miller, 2018). A few years later, the

Ontario government set a $5,000 cap on the collective cost to the mineral industry for the arbitration process. The appointed arbitrator, R.H. "Bob" Murray, who served from 1924 to 1957, granted no payout to a significant portion of plaintiffs.

In 1926, an exchange between a sulfur fumes arbitrator and a Sudbury-area resident mirrored the contestations over "invisible injuries" soon to escalate in Trail and foreshadowed those fifty years later in Rouyn-Noranda. As described by Munton, the resident, Mr. Gravelle, complained that the onset of Copper Cliff smelter fumes had damaged trees on his property. The arbitrator told Gravelle that "one smoke will not kill [the trees]," to which Gravelle replied, "But year after year …." (cited by Munton, 2002, p. 160). Munton writes, "The experts judging vegetation damage at the time, especially those in the employ of the smelters, often looked for damage within one growing year. Many disputed what they termed the 'invisible injury' theory. The farmers and woodlot owners intuitively knew better" (p. 160). More visibly, the same year, the Ontario government found that the Sudbury district's death rate from leading lung diseases and child mortality rate were triple the provincial average and that infant mortality from pneumonia was very elevated (Kuhlberg and Miller, 2018).[25] In a 1927 letter to the press, a resident suggested that the Minister of Mines had dissolved the Provincial Board of Health to silence Sudbury residents' concerns about air pollution (cited in Kuhlberg and Miller, 2018, p. 249).

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[25] M. Perrault during the February 1926 debates: "To confront new circumstances, the government judged it good, two years ago, to change the Loi des Mines in such a way that it wouldn't differ too much from the Ontario law" (Assemblee Nationale du Quebec, February 23, 1926).

In the 1930s, the International Nickel Company of Canada (Inco) built even taller stacks than at Trail to attempt to better disperse its fumes, and like at Trail, this likely just increased the geographic extent of the SO2 damage (Munton, 2002).[26] In 1938, an official with the Ontario Department of Lands and Forests reported browning trees around Temagami and Sudbury to two historically denialist parties: the NRC and Sulfur Fumes Arbitrator Murray. The NRC offered methods from the Trail smelter dispute to conduct further studies, including airborne SO2 monitoring with portable sampling devices and analysis of conifer needles and tree rings. In 1939, Murray witnessed the widespread damage himself and asked for aerial and ground surveys of forest land. The dominant assumption at this time was that sulfur fume damage was limited to a roughly 30 kilometer radius, but the Lands and Forests official pointed out that Murray was awarding claims up to 50 km from Sudbury-area smelters. The surveys found widespread damage to trees around Temagami, which contained important Crown timber and had been the home of the Teme- Augama Anishnabai people for thousands of years (Munton, 2002, pp. 132-134; Temagami First Nation, 2023).[27] Ontario provincial officials began privately questioning the arbitration system they had forced residents into (Kuhlberg and Miller, 2018).

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[26] Inco literally escalated this strategy in 1972 with Sudbury's famous 1250-foot-tall Superstack, which was briefly the tallest freestanding structure in Canada. Now owned by Vale, the stack was last used in 2020 and has been awaiting demolition for several years (Migneault, 2023).

[27]The Teme-Augama Anishnabai (Temagami First Nation) still live and have their reserve in the area and have been repeatedly displaced and invaded by the timber industry as well as colonial governments (Temagami First Nation, 2023).

Ontario's Department of Lands and Forests staff took daily reports of smelter smoke (based on visibility, smell, and taste) presence and duration at all fire lookout towers within 100 miles of the Sudbury-area smelters from 1939 to 1944 (Munton, 2002). In 1944, almost all fire lookout towers within 50 miles and several in the 85- to 11- mile echelon reported fumes. Plumes were even detected past Temagami to the Quebec border around Lake Temiskaming. In response, the Department of Mines, Department of Lands and Forests, Murray (as an employee of the Department of Mines), and smelter owners held a contentious meeting that resulted in a plan for further studies. The goals of these studies would be to determine whether SO2 or other smelter fumes were damaging forests, delineate the area if so, and recommend potential interventions.

Murray expressed confidence that the smelter companies would cooperate with investigations and proposed interventions (Munton, 2002). Instead, Inco immediately blocked any investigation into interventions, successfully using arguments that ignored the existence of successful pollution control technologies from Trail. The advances from Trail did contribute to the pursuit of yet more detailed research into the potential harms to trees from smelter fumes, as the Committee's researchers brought in three researchers from the Trail case. The Committee also involved researchers from the University of Toronto, the Meteorological Service of Canada, and the Forest Pathology Laboratory in Ontario. A researcher from Dominion Forest and the Trail case inspected Ontario forests on foot in 1944 and 1945, and from a solely visual

investigation, claimed that the widespread damage to white pines was due to needle damage, not SO2.

The answer to the findings and lack of will for intervention was even more detailed monitoring. In 1945, government scientists conducted automatic stationary monitoring, portable ground sampling, and airplane-based air monitoring around the smelters, some of which had been developed for the Trail smelter dispute by an expert witness for Cominco (Wirth, 1996, p. 39). They became concerned that their devices would break from the high exposure to corrosive SO2 (Munton, 2002). Fire lookout employees in the Sudbury region performed daily monitoring and analysis as opposed to the more binary impressions before. When the readings from the fire lookout towers showed a larger affected area than expected, their reliability was questioned. While Cominco had shared its data with the government during the Trail case, the Sudbury-area smelters refused. The primary conclusion of these studies was that more than 0.25-0.3 ppm SO2 could damage trees, even in one acute incident, but the data indicated potential greater conclusions. Some maximum readings were 1.0 ppm. Foliage samples from 1944 to 1947 found high sulfur levels in some species 20 to 40 miles from Sudbury, a radius higher than the previously accepted 30 miles but now seemingly normalized. When some white pines at much greater distances were also found to have high sulfur exposure readings, some scientists concluded that white pines were a poor indicator of air SO2 levels. "The sulphur fumes committee's annual reports for 1945 and 1946 were long on procedures and arrangements and short on results. They offered no remedies," Munton writes (2002, p. 140).

For better or worse, the committee did recognize the growing implications of their findings, and in 1948, the Committee asked for more federal support to increase the geographic scope of their research (Munton, 2002). The federal government responded that the program would need to be formalized to enable this. The smelter representatives objected, and this did not happen. Over ten years after the Trail smelter arbitration, the committee found SO2 concentrations about three to eight times the cap that had been placed on Trail. However, even the scientists on the committee decided that the most reasonable and promising strategy would be to continue studying the problem with whatever data and funding they could beg from the companies and government. "It went on working in a slightly modified form for decades [into the 1970s], and would never produce what a succession of provincial governments at least found to be sufficiently conclusive results on which to take action" (Munton, p. 144). When the acid rain crisis emerged in the late 1970s, the Ontario government first turned not to its 30 years of accumulated knowledge but to a call for further studies. In 1974, a secret federal report wrote, "Government has been extremely lenient …. Historically there have been no prosecutions under applicable environmental legislation, and from 1924-1970, there was a curtailment of a citizen's right to sue for environmental damages, and there has been a lack of government sponsored research on the damage caused by the copper-nickel smelters" (as cited by Munton, 2002; Bradley, 2008).

In both Sudbury and Trail, late-19th-century railroad expansion was a major driver of colonial agricultural settlement and mineral prospecting in the area. In both locations, public complaints about damage from smelter fumes were recorded within

twenty years of smelting beginning. Companies worked out private compensation and buffer zone schemes, sometimes with government support, until the conflicts grew beyond what companies were able or willing to handle. Governments and companies then collaborated on new legal instruments to address individual claims on a mass scale, often by limiting the potential financial damage to companies and curtailing settlers' rights. Governments and companies agreed on solutions that permanently removed land from colonization and cultivation, thereby implicitly trusting that industry and its technologies would match its lost potential use value. In both cases, impacts to government timber were a trigger of scientific investigation. Investigations of damage that had already occurred then stretched well beyond the useful timeframe for injured parties, even as it did little to address or prevent harms on much longer timescales, such as the massive quantities of toxic waste Cominco dumped in the Columbia River. Technology was not straightforward in its implementation or impacts, as taller smelter stacks in both locations spread pollution farther and sulfuric acid pilot plants at Trail both reduced SO2 emissions and distracted regulators from the immediate scope of the problem. The power and potential of the air monitoring equipment and plant science advances in both locations is difficult to measure because it was so heavily politicized, but it is telling that the abbreviated studies at Trail and the intentionally exhaustive studies at Sudbury led to essentially the same result: minimal change until the acid rain crisis and a manufactured history of ignorance. In both locations, problems that would later be proven–such as damage to livestock, human health problems, metal corrosion, reduced soil productivity–were evident to the ordinary people experiencing them. This knowledge contributed to their psychological

distress. The lessons here may be less about the mis(use) of science than the suppression of witnesses.

Chapter 7

ROUYN AND NORANDA AFTER THE 1926 LAWS

The history of labor, political control, and public records of the impacts of the smelter in Rouyn-Noranda between the 1926 laws and so-called environmental awakening of the 1970s are closely linked.[28] I will begin with Rouyn-Noranda's early growth after the 1926 laws. As promised in the legislative debates, the laws enabled government-backed corporate control over Noranda, and thousands of mineral industry workers soon moved to the cities. I will discuss the growth of Rouyn-Noranda and its labor movement, the forces that limited dissent and historical records of it, and the evidence we do have available from labor histories and news archives. I find that "red scare" anti-communism was frequently used to suppress labor organizing, to the point of freely jailing and deporting striking miners and union organizers. Laws and media rhetoric against political dissent, usually framed as fighting communism, likely prevented a strong historical record of sentiments or actions that countered the status quo. In their study of Abitibi-Témiscamingue mineral industry labor conflicts from 1910 to 1950, Rouillard and Gourd write that regional newspapers "teach us little about the daily life of mine workers in Abitibi-Témiscamingue. The life of the working class is practically absent from the regional press …. The regional newspapers only interest themselves in the workers when they assert their unity and power and make the mining region's existing class relations apparent. During these periods of conflict between the mines and workers, the

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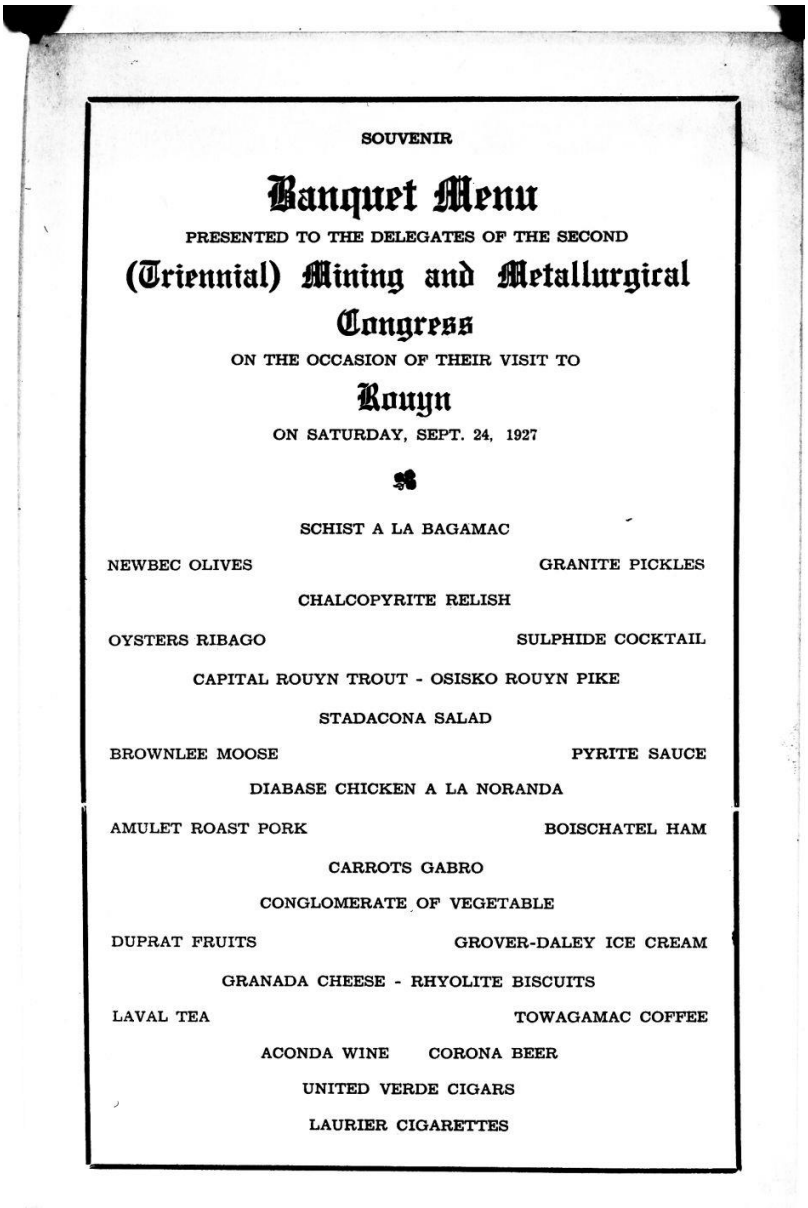
[28] Although Rouyn and Noranda were separate cities until 1986, I will refer to the place as Rouyn-Noranda throughout for simplicity's sake except when specifically talking about one or the other.

newspapers focus on surveilling the union activities and combating labor organizations" (Rouillard and Gourd, 1984, p. 122). In contrast, Kuhlberg and Miller were able to find more detailed coverage of Sudbury-area residents' experiences with smelter pollution in the early 20th century despite similar dynamics in Ontario. This may be due to Sudbury's much closer proximity to major cities and government centers, more consistent population of English speakers, or less oppressive provincial laws. However, digital archives grant access to a wider range of papers and images than what Rouillard and Gourd had readily available, and 20th-century newspapers still offer some important hints of life and conflicts in Rouyn-Noranda. Even the frequent and virulent anti-communism is edifying for its details about immigrants, policing, and depicted accomplishments in development that the communists allegedly seek to destroy.

The following history and analysis centers labor struggles. As mentioned above, labor disputes were more able to pierce the media silence than other industrial impacts in this period. As the first- and most-exposed population, environmental health issues among mining and smelter workers are a bellwether for broader environmental health impacts. The role of labor in Rouyn-Noranda and other environmental-industrial histories is often reduced stereotypes (if included at all), with labor depicted as a mass of brave workers who created a place's history, the economic foundation for a community, dependent on job security to the exception of all other considerations even when, as in Rouyn-Noranda, there is a strong historical record of labor uprisings and occupational health conflicts. Contrary to this stereotype, Noranda's attitude and strategy toward perceived threats are easiest to discern in labor

relations. Lastly, the dynamics and loyalties of industry, labor, and community are a major but unclear factor in the current Rouyn-Noranda conflicts. As in Trail and Sudbury, a conclusion to a conflict can lead to a perception that it was resolved at the time and in historical summaries. By reexamining the specific points of each visible conflict and the terms of their resolutions, we can get a more accurate tempo of progress and make inferences about the silences.



SOUVENIR

Banquet Menu

PRESENTED TO THE DELEGATES OF THE SECOND

(Triennial) Mining and Metallurgical Congress

ON THE OCCASION OF THEIR VISIT TO

Rouyn

ON SATURDAY, SEPT. 24, 1927

SCHIST A LA BAGAMAC

NEWBEC OLIVES — GRANITE PICKLES

CHALCOPYRITE RELISH

OYSTERS RIBAGO — SULPHIDE COCKTAIL

CAPITAL ROUYN TROUT - OSISKO ROUYN PIKE

STADACONA SALAD

BROWNLEE MOOSE — PYRITE SAUCE

DIABASE CHICKEN A LA NORANDA

AMULET ROAST PORK — BOISCHATEL HAM

CARROTS GABRO

CONGLOMERATE OF VEGETABLE

DUPRAT FRUITS — GROVER-DALEY ICE CREAM

GRANADA CHEESE - RHYOLITE BISCUITS

LAVAL TEA — TOWAGAMAC COFFEE

ACONDA WINE CORONA BEER

UNITED VERDE CIGARS

LAURIER CIGARETTES

Figure 7.1: Rouyn-Noranda locals have a phrase "ça goût la mine," (it tastes like the mine) for when the air pollution is strong or sulfurous enough to taste. This menu from a 1927 mining and metallurgy dinner in Rouyn took it literally, with dishes named for minerals, local mines, and local towns (Bolduc, 1927).

Strict political control was the norm not only in Noranda but in Quebec and North America due to red scare rhetoric and laws. Section 98 of the Criminal Code of Quebec, passed in 1919, declared communism illegal and allowed prosecution, deportation of non-citizens, confiscation, and fines for threatening the social order or harboring such activities (Clément, n.d.). Section 98 was revoked in 1936 and replaced in 1937 by the Law Protecting the Province Against Communist Propaganda, commonly known as the Loi du Cadenas (Padlock Law). The Loi du Cadenas was a contentious and similar law that banned using or allowing the use of a "house" to "propagate communism or bolshevism by any means whatsoever" under the penalty of barred entry to the property, prison, fines, and confiscation of written materials (Province of Quebec, 1937).

Major early- to mid-century Rouyn-Noranda newspapers set the limits of public discourse (Tessier, 2016b). After the brief lives of a few local newspapers from 1926 to 1933, in 1933, the *Rouyn-Noranda Press* appeared and ran until 1990. BAnQ archivist Tessier wrote, "From the start, the *Rouyn-Noranda Press* focused above all on the promotion of the mining industry with the objective of attracting American and English-Canadian investors …. However, what happened in the daily life of people in the city was quasi-absent from the newspaper" (2016b). A new director entered in July 1933 who improved the paper's content, but without changing the editorial slant of the paper. Its coverage was particularly aggressive and anti-communist during the 1934 Grève des Fros. Its importance declined with the area's anglophone population after WWII. In 1937, the francophone newspaper *La Frontière* began publication under a strongly French-Canadian nationalist, Catholic, and anti-communist editorial

direction. Rouyn-Noranda's French-Canadian population had grown with the local influx of French-Canadian workers to replace striking foreign miners during the Grève des Fros, as well as other Catholic and governmental programs to encourage colonization. The editors-in-chief of the Rouyn-Noranda Press and La Frontiere clashed frequently, but their "sole common alignment was hatred for communists" (Tessier, 2016b). In 1964, *La Frontiere* was sold to a new owner, who gave the paper a polemic tone.

The first radio station in Rouyn-Noranda launched in 1939, and its administrative council at its debut gives a good sense of the media control of the period. The president of the station (CKRN) was a lawyer; the vice president and secretary-treasurer were future mayors of Rouyn; and the second-vice president was Noranda secretary Frédéric Hébert (Tessier, 2016a). Hébert later served as Noranda's mayor from 1950-1967 (Bernier, 2012). The council also included the editor of the Rouyn-Noranda Press and two prominent businessmen.

In keeping with the 1926 laws, Noranda's president, James Murdoch, became Noranda's first mayor in 1926. He held the position from Toronto while the Noranda mine's manager, Ernest Hibbert, also managed the city. In 1929, Ernest Hibbert was "elected" mayor and served till 1931, when he was replaced by James A. Carter, a land broker for Noranda who served until 1949 (Rouillard and Gourd, 1984). While Noranda was a company town, Rouyn was a mining boom town. Noranda sold building lots in Noranda's limits at auction beginning in 1927, but reserved many for public infrastructure and worker housing. In contrast, Rouyn, which was officially and

typically incorporated in 1926, developed in a faster and less regulated manner. Rouyn had active local politics and its own mayors until the two cities were merged in 1986 (Tessier, 2016). Rouyn also had a majority francophone population in its first decades, although anglophones dominated the commerce and housing industries (Rouillard and Gourd, 1984). Rouyn skyrocketed from 602 residents to 3,225 in 1931, 8,088 in 1941, and 14,633 in 1951, while Noranda went from 2,246 residents in 1931 to 9,672 in 1951. "Mineral companies, who reign over closed cities, also profoundly influence the lives of neighboring cities. In sum, one mining agglomeration, but two administrations, two modes of development, and two styles of social and cultural life" (Rouillard and Gourd, p. 58). The spatial politics of the two cities and their surroundings are an example of the distinctions between colonialism and capitalism even where both of those exist. Rouyn's early development was essentially settler colonialism, while in Noranda, the state transferred colonial sovereignty (note Rouillard and Gourd's use of the word "reign") to a corporation for capitalist maximization. While these systems are similar enough that the two cities converged in culture and then in law, this transfer of Noranda to capitalist control in 1926 has enduringly diminished the government's ability to repossess power over it despite nominal changes. Many of the thousands who rushed to the Rouyn-Noranda area at the start of the boom found little unclaimed land. "The only possibility that remained then, much less attractive at that, was salaried work in the mines" (Rouillard and Gourd p. 63).

Figure 7.2: The orderly construction of Noranda, around 1926 (Vavasour & Dick)

Figure 7.3: The less orderly construction of Rouyn, 1927 (Vavasour & Dick).

The first mine workers to arrive came from mining areas of northern Ontario and were primarily anglophone, as were Noranda's management. In the late 1920s, after the area mines began production, the "fros" (foreigners) became a major part of the mining workforce. Rouillard and Gourd write that anglophones and immigrants (primarily from various European countries) were much more numerous than French-Canadians in Rouyn-Noranda and other mining towns compared to elsewhere in Abitibi-Témiscamingue, to the point of being the majority of the population of Noranda in 1931 and 1941 figures (1984, p. 30). Anglophones tended to have specialist and management positions in the industry. French-Canadians more commonly worked in agriculture. Mining companies found it beneficial to have a labor force with internal language barriers that could be deported in the case of trouble.

1927: The Starting Year of the Smelter—and Strikes

The first strike at Noranda Mines happened in 1927, the same year the smelter began production (Solski and Smaller, 1984, p. 76). The strike was led by shaft men protesting working conditions. Until 1943, Quebec workers had no codified right to organize or join a union.

1932 issues of *La Gazette du Nord*, *L'Illustration*, and *Le Nouvelliste*, published during Canada's Great Depression, report on police violence and state censorship toward foreigners, labor activists, and suspected communists, though these events are described as incitements of bolshevism against a prospering city. The lede of the *Gazette du Nord* summarizes, "The communists want to have a demonstration - gunshots." According to their unnamed "correspondant in Rouyn," on May 1st, 400 communists gathered in the Ukrainian hall to organize a march in the city. The chiefs of police of Rouyn and Noranda, the constable, the mounted gendarmes, and various residents ordered them to disperse. Instead of dispersing, the communists allegedly shot at them and threw projectiles. One chief of police was shot in the arm, and many on both sides were injured before firemen dispersed the crowd with "numerous jets of water." The correspondent assures the paper that the chief of police is not badly injured. "One wonders, however, if the bullet that injured him was not misfired by a police officer" ("Une émeute se produit à Rouyn," p. 1). A week later, the Workers Page of *L'Illustration* declared that "The Hideous Rabble of Bolshevism Must be Swept" and claimed that after forces of law and order had minimized the communist threat to the cities, the communists were moving into the areas newly opened by colonization. The incident in Rouyn was an example of this, "where a peaceful

population had to suffer contact with a handful of undesirables which the provincial authorities are taking care of at this moment and who will be deported" as soon as the investigation was complete (1932, p. 7).

Le Nouvelliste's "A Visit to Rouyn and Noranda, where the future market of our colons is found," published in December 1932 after a visit sponsored by regional leaders, gives more hints of life in Rouyn-Noranda as it establishes the society the communist menace seeks to disrupt. "On a road slippery as glass, we dash to two sister cities, Rouyn and Noranda, who have also emerged from the solitude, as if by enchantment, after the discovery of troves of precious minerals" (Plouffe, p. 1). The paper's representatives met Dr. J. L. Bouille, chief doctor at the hospital, who previously represented the federal government in interactions with "the savages." Quebec then assigned him to the mining boom because they "feared the epidemics that too often mark these frenzied rushes to mining centers."

As the narrator continued their nighttime walk:

> "I arrive in front of a sort of illuminated temple. It is the meeting place of slavic races, active hotbed of communist propaganda. The Chief of Police D. D. Lapointe, who I find in his office despite the late hour, explains that it's these foreigners who give him the most woes. They are, too often, radicals or rather idlers who want to be paid and not work; perfect communists. They protest about everything, and progressively gain audacity. But the Chief has recourse to major remedies: broken noses, swollen eyes, busted lips were stronger arguments than those employed up to now. Also, 20 of these foreigners have been deported since May" (Plouffe, 1932, p. 1).

Noranda remained undefeated, "employing more workers than ever and its enormous chimneys spit uninterrupted jets of smoke." In this "new country," only the "valiant,

the strong, the men!" survive, and to them, "possibilities are limitless" (Plouffe, 1932, p. 1).

As in the *Le Nouvelliste* piece, the synecdoche of the smelter chimneys for Rouyn-Noranda emerges in these early stories, a symbolic trope and fusion of identities that persists today.[29]

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[29] Le Gazette du Nord April 27, 1928: "The chimney of the Noranda blast furnaces smoke night and day, mingling sometimes with the clouds or creating a light curtain over the joyful stars, up above on the coat of the night" ("Bonjour, Lecteur," p. 12).

Le Droit September 24, 1936: "The sun was setting over Noranda, which the white and luminous smoke from the factory signaled some forty miles ahead of us. At the foot of the city, Lake Tremoy, motionless, glimmered like a large splash of mercury" (L'Heureux, p. 4). The article also notes that Noranda's chimney was 437 feet tall, another import from Trail and Sudbury (p. 1).

The Grève des Fros (Strike of the Foreigners), 1934

Archivist Sébastien Tessier described the strike as justified but unluckily timed: Canada was in the depths of the Great Depression, and there were plenty of desperate French-Canadian replacements waiting at Noranda's gates (Personal communication, September 2022). Canada was rejecting and expelling immigrants to reduce its burden of impoverished residents, especially those who factually or pretextually had communist sympathies. Some mines had entirely halted operations, and layoffs in the forest and paper sectors drove unemployed Abitibi-Témiscamingue residents to mining towns in search of work. In late 1933, two issues of *L'Action Catholique: Organe de l'Action Sociale Catholique*, hinted at growing labor unrest. The Minister of Colonization reported upon return from a trip to Abitibi that while the Depression had affected the region, because the government was not distributing direct aid, there was no unemployment as officially defined ("MM. LaFerté a foi dans l'avenir de l'Abitibi," p. 3). In December, in addition to declaring that laws will not be changed to allow nightclubs to remain open until midnight, Prime Minister Taschereau "declared that the provincial police will help suppress the disorders in Noranda, where the communists are too active" ("Déclaration de M. Taschereau," p. 1).

Yet Noranda's workers, over 50% "fros," had reached a breaking point. They were paid for eight hours of work but often remained underground for 10 to 12 hours. Working conditions were terrible, and ventilation systems had not been completed (Rouillard and Gourd, 1984, p. 76). Noranda was willing and able to invest in other parts of its operations: after installing a new furnace and increasing its concentrator to capacity in early 1933, Noranda planned to spend $500,000 to increase the smelter

concentrator's capacity from 2,000 tonnes per day to 3,000 in fall 1933 ("Noranda Mines," 1933, p. 11; "M. LaFerté a foi dans l'avenir de l'Abitibi," 1933, p. 18). By 1934, the MWU's clandestine organizing had gained 500 of the 1,400-1,500 Noranda workers. In June, they presented a list of demands that included an 8-hour workday, a 10% raise, paid overtime, recognition of a mine workers' committee and the right to join a union, ventilation improvements, and the restoration of workers fired for organizing (Rouillard and Gourd, 1984). Noranda had taken no cues from Ontario here: Ontario had had a law for an 8-hour workday for about 20 years (Solski and Smaller, 1984). Noranda refused to recognize or negotiate with the union. The next day, the organized workers formed a picket line, halting mine work and slowing the smelter. "The reaction of Noranda was immediate and implacable: hiring strikebreakers from among Rouyn-Noranda's unemployed people, arrests of union militants and organizers, police brutality, mass firings of foreign workers. The entire repressive arsenal was utilized at the same time" (Rouillard and Gourd, 1984, p. 77). Noranda broke the strike in 10 days with no concessions. MWU's work across the region was set back by the failure, as well as the expulsion and prosecution of union representatives. Many foreign strikers were deported.

Noranda, the conservative press, and anti-labor political figures had to walk a fine line in their pejoratives about the striking and expelled workers. They were condemned as foreigners–hence the "Grève des Fros" name–but so were most mine and smelter workers. The Canadian-born participants in the strike could be condemned as disloyal communists–but between them and foreigners, that left very few patriotic French-Canadians to be involved in either side of the situation. On June 21, the

Rouyn-Noranda Press announced the end of the strike, which it claimed was 90% communist foreigners.[30] "Many of them, of course, were married men with families," the *Press* equivocated, "and a large number have homes in Noranda or Rouyn, not a few only partly paid for, and on them particularly the result of the strike falls heavily" (1934, p. 1, 4).

Prime Minister Taschereau did not offer these limited sympathies to the defeated strikers. A front-page headline in *Le Soleil* in July 1934 reads, "The Honorable M. Taschereau receives, smiling, a letter from unhappy communists" (p. 1). The anonymous letter from the Tim Buck Branch of the Canadian Labor Defence League, read out loud to reporters by Taschereau and described in the paper as a veiled threat, began, "Even though you have kept news about the Noranda strike away from the awareness of newspapers, we have heard talk of the gang of stranglers who were sent there to crush the workers and arrest the heads of the strike." It closed, "we want to protest the tactics from the Middle Ages used by police. It is time for you to realize that workers are humans." *Le Soleil* reminded the reader that "except three or four," all of the leaders arrested in Noranda were foreigners, attempting to demonstrate that these threatening sentiments did not come from the local population and needed to be expelled.

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[30] Rouillard and Gourd also rely on the Rouyn Noranda Press for numbers of communist party sympathizers in the 1930s, which shows the paucity of reliable information (1984, p. 74).

After the Grève des Fros To World War II: Communism Stayed the Priority Threat

Conditions of labor, pollution, and politics remained largely unchanged in Rouyn-Noranda between the successful breaking of the Grève des Fros and World War II. Although many striking workers and alleged communists had been deported and replaced by French-Canadians, communism was still framed as a primary local threat in media coverage, while the new predominance of French-Canadians in mineral industry jobs was normalized. The first media hints of the impacts of smelter fumes emerge in this period.

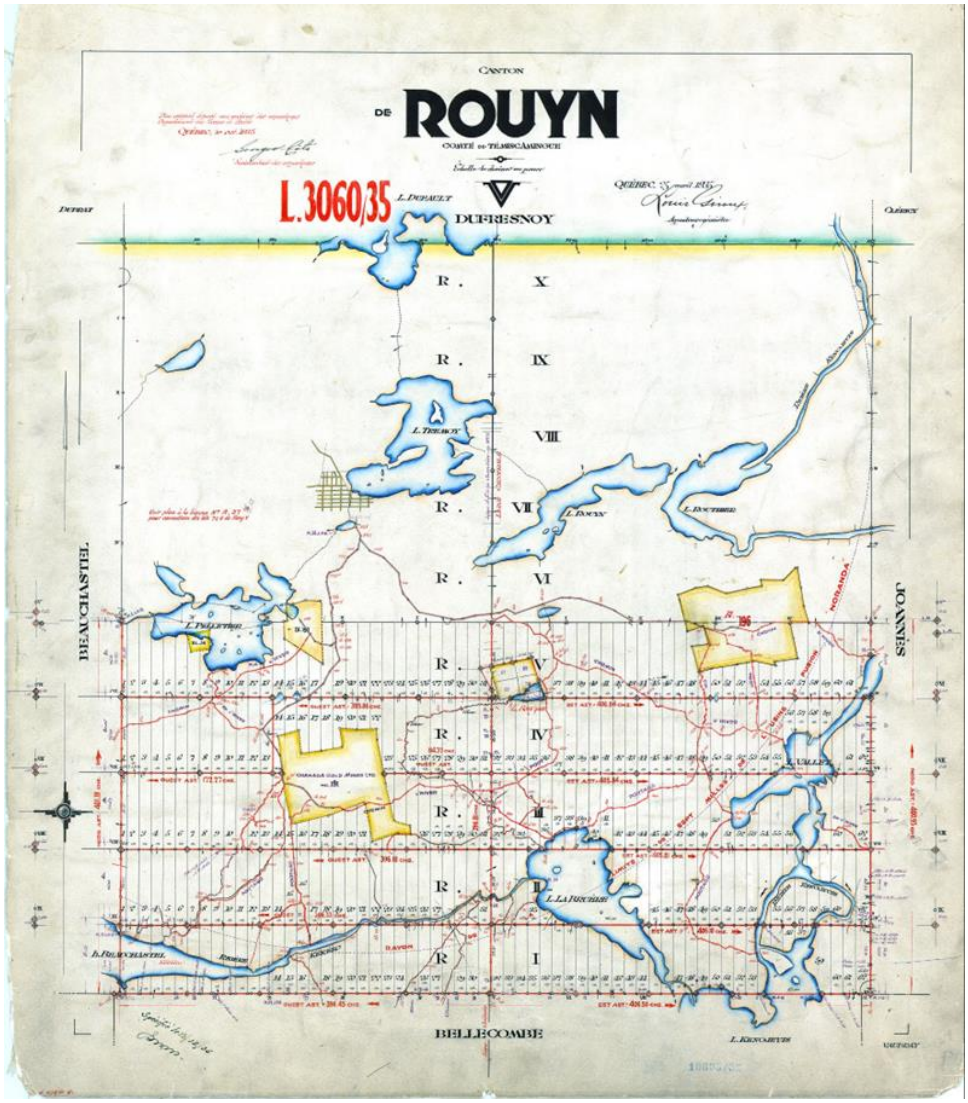

Figure 7.4: This 1935 map of the Témiscamingue section of the Rouyn canton shows little detail of Rouyn-Noranda (in the upper left quadrant), but it is intriguing for the radius line labeled "Limite de sept milles de l'usine de fusion Noranda/Boundary of seven miles from the Noranda smelter" (Giroux). Presumably this has something to do with the impact from the fumes.

The replacement of many striking workers and alleged communists with French-Canadians did not change the Noranda workers' enjoyment of their working conditions. There were small attempts to organize at Noranda in 1935 and 1936, but they were immediately crushed (Rouillard and Gourd, 1984, p. 79, 87). An independent union with Catholic social doctrine roots, the Syndicat des Mineurs de l'Abitibi, managed to gain 1,600 members at nearby mines and win minor labor improvements during its 1938 to 1943 lifespan, but its success and life were limited by both the active suppression of labor organizing and Catholic social enterprises' preoccupation with moderation.

> "The men who were instrumental through their 'scab' activities in crushing the miners' strike of 1934 are protesting today about the speed-up system in force. Because Noranda Mines employs a large number of 'stool-pigeons' [or informants] most of these protests are not voiced openly, yet the discontent is there, and small groups of miners often discuss the question of a union.
>
> "In its campaign to organize the mining centres of the north, the International Union of Mine, Mill and Smelter Workers should not overlook the workers in the Rouyn and Noranda areas. The smelter workers at Noranda work continually in a haze of dust, heat and gas and are forced to wear gas bags at all times. These bags are soaked in sodium chloride and worn like a horse's feed bag. The men are expected to work like horses, too. As Ben Anderson, a former boss at Noranda, once said to me, 'I've worked in 23 smelters in my time, but this Noranda smelter is the dirtiest, stinkingest hole I've ever come across'" (Union News, 1936, quoted in Solski and Smaller, 1984, pp. 74-75).

Figure 7.5: 1937 photograph of the Noranda golf club with the Noranda mine in the background (Canadien National).

Even after the Grève des Fros was brutally suppressed, it was used as fodder for red scare propaganda and xenophobia. In 1938, *Le Gazette du Nord* celebrated the nomination of Kenneth Turnbull to Noranda Chief of Police: Turnbull "knows the mining region especially well. It is there that, a few years ago, he accomplished major arrests that averted a strike formented by communist agents. Noranda is now a city as progressive as it is orderly. But it needs special surveillance due to its cosmopolitan population" ("Kenneth Turnbull chef à Noranda," p. 8). Leo Bureau, a prominent Rouyn lawyer with mining interests, wrote in *Le Peuple* in December 1936 that his earlier columns about communist movements in the area had garnered him hate mail

saying "Watch your dirty scab work" (p. 5). Fired up, Bureau dramatically recounted recent and current local conflicts with communism. Bureau claimed that the 1932 Ukrainian hall gathering had been in violation of "a new legislation that had just been passed, prohibiting all parades or outdoor assemblies, for organizations of this type." The threat had been continuous since then: the "Russians, Croatians, Yugoslavians, Fins, Poles, etc." who had avoided arrest and deportation had fled to Ontario or the west but tried to sneak back to Rouyn-Noranda in 1933. The city was full of anxiety over their return, and "fortunately the federal and provincial government had taken the precautions of sending us a large contingent of police, to prevent and control any problems." The malefactors were arrested and deported, but their forces somehow remained to support the Grève des Fros, which the city and its residents were only protected from by "the major constabulary force of the two cities, and the numerous reinforcements, sent from Quebec and Ottawa." And yet, "There still remains a good number of these guilty people, in the north of Ontario and here even in Rouyn and Noranda." Even Catholics were suspect: "I will say more, some of these people will even boast of being good catholics, and yet, never miss a communist meeting." Bureau claimed to have snuck into a communist gathering in April 1934 (a few weeks before the Grève des Fros), where he distressingly heard French-Canadians disparaging capitalism and fascism. The banners that he claims were displayed offer an example of what was and wasn't seen as a political threat in the few years preceding WWII: "Down with Facism [sic]," "Down with butcher Hitler," "Fight for repeal section 98," and "Fight for liberty of word and parade demonstration."

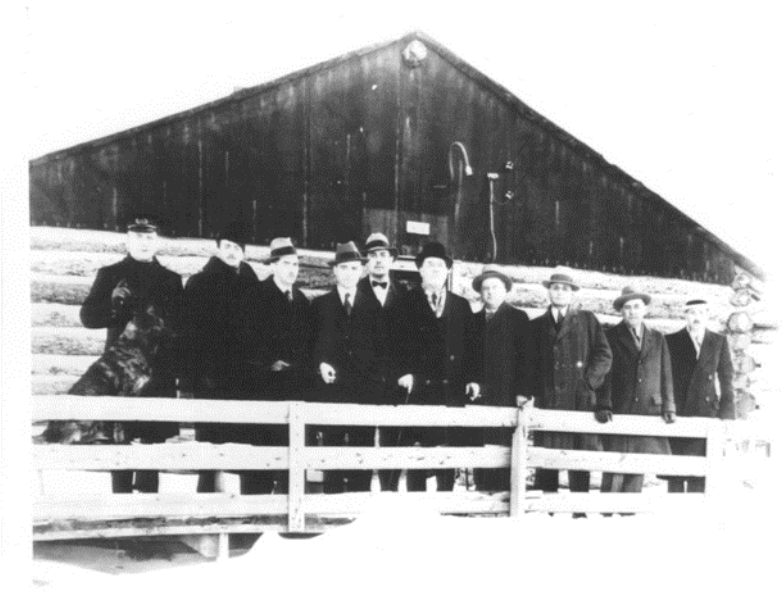

Figure 7.6: I thought Leo Bureau, which rhymingly means Leo Office or Leo Desk, had to be a penname, but he was a real person. At one point, he was treasurer of the Rouyn Chamber of Commerce. Here is a 1927 photograph of him in front of the Rouyn City hall with the same Chief of Police shot in the 1932 clash, the future Noranda Chief of Police Kenneth Turnbull, and various lawyers and prominent men. Bureau is on the far right (Vavasour & Dick).

A more legitimate threat emerges in news coverage from the interwar and inter-strike period: the smelter's effects on vegetation.

Thomas Whiteside wrote a breathless description of his visit to Rouyn-Noranda in an April 1938 issue of *Le Soleil* (p. 3). "The Flag of the New North," his title for the piece, is the smoke from the smelter's tall chimney. "An immense cloud, greyish, with a stunning radiance, stands out from the blue sky for 20 miles into the distance, and resembles a gigantic flag." Whitesite said many of the mining workers

came out of dissatisfaction with life in the big cities. As he spoke with a young couple from Toronto in their log cabin about the joys of their new life,

> I noticed a vase of large flowers near a window.
>
> –Oh! I cried with admiration, Easter lilies?
>
> I wanted to breathe in their perfume. They had none.
>
> –But, I said, surprised, they're fake.
>
> –Indeed, replied the young woman, and they're all like that for 10 miles around. With the fumes from the mines, it's impossible to have real flowers. It kills them.
>
> –That's too bad, I said, but it's not as bad as going without electricity (p. 3).

Whiteside described the "pit diggers," whom he described as mostly French-Canadians, as "very proud of their profession, which is one of the most dangerous in the mining industry. They know that when they dig at the bottom of the pits they risk being crushed to death by the slightest error made by the elevator-driver. However, they don't want to do anything else. After they finish digging the pits of one mine, they go dig another somewhere else, otherwise, they do nothing." In his telling, the miners' pay was about $30 a week, but so was their cost of living, more than in the large cities. Because of the high cost of living and because their pay was based on both hours and production, "they sometimes work a month without taking a single day of rest. But as hard as they work, they seem happy with their fate" (1938, p. 3).

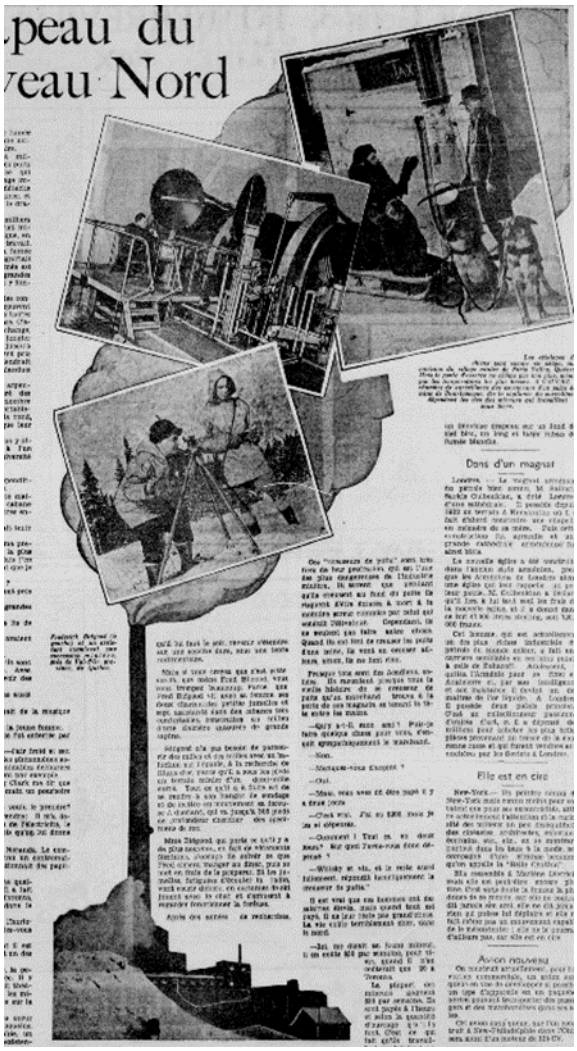

Figure 7.7: The illustration for "Le drapeau du Noveau Nord"

A brief piece in *Le Droit* about the Union of Farmers' 1939 annual congress offers another peek through the smog. The farmers passed Resolution 170, "That the government study methods to warn colons of the Noranda area about the damages caused by the fumes from the Noranda mine" ("Congrès annuel de l'U.C.C."). There are tantalizingly few details about this event, but it shows that even in Rouyn-Noranda, there was public awareness of environmental and economic impacts of

pollution that reached the point of collective action and lobbying province-level politicians.

World War II and the 1946-1947 Strike

Figure 7.8: Residents raise the flag of the United Kingdom during a WWII rally in Rouyn-Noranda. The smelter stacks are in the background (Bolduc, 1944, cited in Tessier, 2017).

World War II permanently changed labor relations in the Canadian mineral industry. The Canadian government was dependent on consistent mineral and metals production for war, a factor that worked both for and against workers, and labor shortages gave workers more collective power. To adapt to growing labor power, Noranda Mines Limited formed a worker-elected company union in March 1942 (Rouillard and Gourd, 1984, p. 83). To represent the different sections and demographics of the mine and smelter, the committee's 15 members included five miners, three smelter workers, three mechanical and electrical workers, two concentrator workers, and two office workers, six of whom were English-Canadian, six French-Canadian, and three immigrants. At this time, English-Canadians and French-Canadians each made up 41% of Noranda workers, while only 18% were foreigners. The committee had the right to negotiate labor and operation issues in the mine, but not to act independently of management. Noranda's worries were reinforced when workers at its Waite-Amulet Mine subsidiary eight miles from Rouyn-Noranda spontaneously began a strike over transportation costs–with no union involvement. To harmonize labor relations during the war, in 1943, the federal government passed legislation that supported union organizing nationwide, with the major caveat that pay increases had been prohibited beginning in 1939 (Rouillard and Gourd; Solski and Smaller, 1984). In contrast, U.S. workers' right to organize had been codified ten years earlier (Solski and Smaller).

The regional mining workforce was in flux throughout the 1940s (Rouillard and Gourd, 1984, p. 65). After a peak of 10,000 men employed in Abitibi-Témiscamingue mines in 1942, the number plummeted to 7,900 in 1944 due to WWII

labor shortages, then climbed back to 9,156 in 1947, replenished by post-WWII immigrants displaced by the war. The regional mining labor force also had more geographic mobility in the 1940s, complicating organizing. In tallying regional mining deaths through press coverage, Rouillard and Gourd note that "the years with an increase in mortal accidents usually corresponds with years where a new workforce, almost always inexperienced, arrives in the mines. Non-mortal accidents, which often mutilate workers, are moreover innumerable and a wall of silence surrounds the entire domain of industrial maladies in this era" (p. 72). Noranda Mines Limited was the only area mine with over 1,000 workers throughout the 1940s.

This change in federal law and labor dynamics opened the door for the International Union of Mine, Mill and Smelter Workers (IUMMSW) to begin a new intensive effort to organize Abitibi-Témiscamingue mining workers in 1944 (Rouillard and Gourd, 1984, pp. 89-91). Soon, Rouyn, Val-d'Or, and Malartic had local charters. An accreditation vote for Rouyn's Local 688 was held at the Noranda Mine under the National Wartime Labour Relations Board, which deemed 1,333 of 1,906 employees eligible. Of those, 1,068 or 91% voted to unionize, and a miner's union was legally recognized for the first time in Abitibi-Témiscamingue. Local 688 then won elections at several area mines, including Waite-Amulet, demolishing company unions in direct elections. The desire for fair and safe labor conditions wasn't a foreigners' communist plot after all.

At the same time, colons from Abitibi-Témiscamingue complained about the smelter's damage to agriculture, in vain. *Le Soleil*, *Le Devoir*, and *La Patrie* ran stories

in April 1944 about a delegation from Témiscamingue's meeting with ministers of the Quebec parliament.[31] By 1944, none of the Ministers who had so ardently supported the 1926 legislation were still in office to receive them. The delegation included the president of the Chamber of Commerce of Rouyn-Noranda. They asked the government to create an agreement with Noranda so that "the fumes from its chimneys would no longer harm the plantings and harvests of colons in the surrounding areas," as well as electricity service to agricultural and colonization areas and a final survey to determine the territory left to colonize in Abitibi-Témiscamingue ("Délégation du Témiscamingue," p. 3; "Demandes du Témiscamingue", p. 2). The same issue of *La Patrie* included a headline on "Record Profits at Noranda Mines" despite a reported shortage of manpower that limited underground exploration (p. 16). In the same issue of *Le Devoir*, a front-page story encouraged the development of mining in northwest Quebec after the war, given its proven transformative power for colonization efforts in Quebec. "Agricultural colonization and the mining industry should go hand in hand, be the complement of one another. This is what already exists to a large degree …. Mines can make the first fortune of colonization, followed by the agriculture of Abitibiens and Temiscamingians" ("Une politique d'encouragement à l'industrie minière," p. 1). One wonders if the authors of the piece read below the fold or were otherwise aware of the complaints of the agricultural handmaids of Abitibi-Témiscamingue's mining industry. A report of research on the damage to trees in Noranda and elsewhere in Abitibi from "industrial fumes" in the 1945 *Annales de*

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[31] In addition to the articles cited in this paragraph, Le Devoir's story was "Les demandes du Témiscamingue" p. 10.

l'ACFAS (French-Canadian Association for the Advancement of Science) suggests that the cycle of complaints and research had spread to Quebec (Pomerleau, 1945).

The 1946-1947 Strike

Figure 7.9: Striking miners in front of the smelter (Bolduc, 1946 or 1947). Another image from this collection includes a sign saying "Sudbury miners get 16 cents more an hour than you do!" (Bolduc, 1946 or 1947)

> "For 20 years Noranda's word has been law in Northwestern Quebec and Northern Ontario. Today, its domination of the lives and destinies of Northern miners is being challenged by these ones. Noranda workers know the fight won't be easy. They are preparing for a long strike, for they won't be satisfied until Noranda is once and for all forced to recognize the rights and dignity of its workers." (Lafrance, 1946, quoted by Rouillard and Gourd, 1984, p. 99).

Noranda and the IUMMSW signed their first contract in 1945 without pay increases or many other demands. The primary gains were recognition of the union and a grievance arbitration process (Rouillard and Gourd, 1984). After WWII,

jurisdiction over labor returned to the provinces (Solski and Smaller, 1984). IUMMSW had formed a national post-war strategy for 40,000 mining workers and developed a platform that included pay increases, 40-hour weeks, guaranteed minimum hours per year, two weeks of vacation and paid days off, overtime pay, mandatory membership for eligible workers, and paycheck deductions of union dues (Rouillard and Gourd; Williams, 1952). They planned to negotiate directly with companies instead of just through the NWLRB (Rouillard and Gourd). However, the workers' leverage and cohesion was weakened by post-war immigration, and the post-war return of labor jurisdiction to Quebec was both confusing and tilted in favor of industry. When the union brought this platform to Noranda to update the minimal 1945 contract, Noranda used Quebec's stances to stonewall a new agreement that would increase wages and other working conditions and compensation (Solski and Smaller, 1984, p. 78). Noranda insisted that the union's demands were too costly, especially given the bar they would set for more financially unstable gold mines in the area. Noranda also attempted to undermine the IUMMSW by directly offering small salary improvements to workers (Rouillard and Gourd, pp. 97-98). After months of negotiations, Noranda's only concession was a small salary increase that the union and workers had repeatedly rejected.

As a typically frigid winter in Rouyn-Noranda began in November 1946, the workers went on strike. Noranda had intentionally timed the final battle for a winter strike in the bitter cold. *Le Soleil* reported that after five days of strike, "thin trickles of smoke left the blast furnaces instead of the masses they ordinarily covered the city of Noranda with" ("Le Conseil du Travail de Toronto appuie les grévistes de Noranda,"

1946, p. 14). After only six days, merchants in Rouyn expressed hope that a resolution could be bargained by Christmastime ("Les marchands de Rouyn interviennent à Noranda," 1946, p. 1). The Noranda workers' strike was strategic and symbolic for mineral industry workers in Ontario and Abitibi-Témiscamingue as well, who knew that Noranda had long been a barrier to labor progress and that a labor loss at Noranda would compromise hard-won labor gains across the industry (Rouillard and Gourd, 1984). Joe Rankin, international representative of the IUMMSW, declared that they were ready to hold out for six months if necessary ("Le Conseil du Travail de Toronto appuie les grévistes de Noranda"). IUMMSW's regional leadership was distracted by internal battles over communism and strategy but quickly voted for a motion promising moral and financial support ("Le Conseil du Travail de Toronto appuie les grévistes de Noranda"; Solski and Smaller, 1984).

The provincial government sent in police, who beat and teargassed strikers and enforced a curfew (Solski and Smaller, 1984, pp. 77-79). Noranda used newspapers and the local radio to try to sway area residents and to broadcast their position farther as the strike continued. IUMMSW wanted to win union dues, and Noranda wanted to break the union, by turning the strike into a siege if necessary (Rouillard and Gourd, 1984, pp. 100-105). Noranda refused even the compromises proposed by the federal and municipal governments and agreed to by the union. The strike was supported by trade unions across Canada, especially the IUMMSW Sudbury Local 598, which provided vital financial and logistical support while the national union was diverted by internal battles. Women's auxiliaries of the Noranda local and elsewhere played a key support role in this strike and in union battles generally through work such as

supplying the picket line, fundraising, and inter-union communications (Garneau, 2019; Solski and Smaller).[32] It ended in early February 1947 with a small wage increase and a few other small concessions (Solski and Smaller).

Figure 7.10: Based on the timing and surrounding photos in the archive collection, this photo of Rouyn-Noranda women cooking together likely was taken of support activities for the 1946-1947 strike (Bolduc, 1946 or 1947).

[32] The role of women's auxiliaries is underappreciated and understudied, in part because so few records remain and the living memory of the early 20th century is dying out. The blacklisted movie Salt of the Earth, based on an actual strike and featuring a Canadian IUMMSW organizer in a supporting role, is all the more notable for its highlighting of gender issues and women's integral place in mining labor dynamics.

Any organizing momentum was short-lived, for in 1948, the United Steel Workers (USW) started a successful campaign to take over the Noranda union and other locals as part of its broad and sometimes violent bid for Mine Mill territory. The 1947 contract expired on November 1, 1948 and needed to be renegotiated, but Noranda used the conflict to refuse to recognize either union (Solski and Smaller, 1984, p. 78). USW relied heavily on anti-communism in Canada and the U.S. for its takeover. The U.S. had passed the Taft-Hartley Act in 1947, which required union officers to sign a pledge of non-communism to be allowed to use the National Labor Relations Board, such as to hold union elections (Barbash, para. 4). When Reid Robinson, the longtime, communist President of IUMMSW, and other more "radical" union leaders went to Rouyn-Noranda in a bid to shore up the union's organizing, Taft-Hartley cosponsor Senator Robert Taft announced that Robinson was fleeing the U.S. because he was a communist. The Canadian press repeated this claim, and Canadian Prime Minister W. L. Mackenzie King had the organizers deported (Solski and Smaller). It wasn't until January 1951 that Abitibi-Témiscamingue mine workers disenfranchised by these conflicts were restored to formal union representation under the victorious USW affiliate Métallurgistes unis d'Amérique (MUA) or Métallos (City of Rouyn-Noranda, 2012, p. 4). During and after these conflicts, the needs and views of the actual workers in Rouyn-Noranda were sidelined.

Figure 7.11: Early 1950s photograph of the city and smelter stacks. Laundry lines full of drying clothes are visible in the foreground (Bolduc).

The 1953-1954 Strike

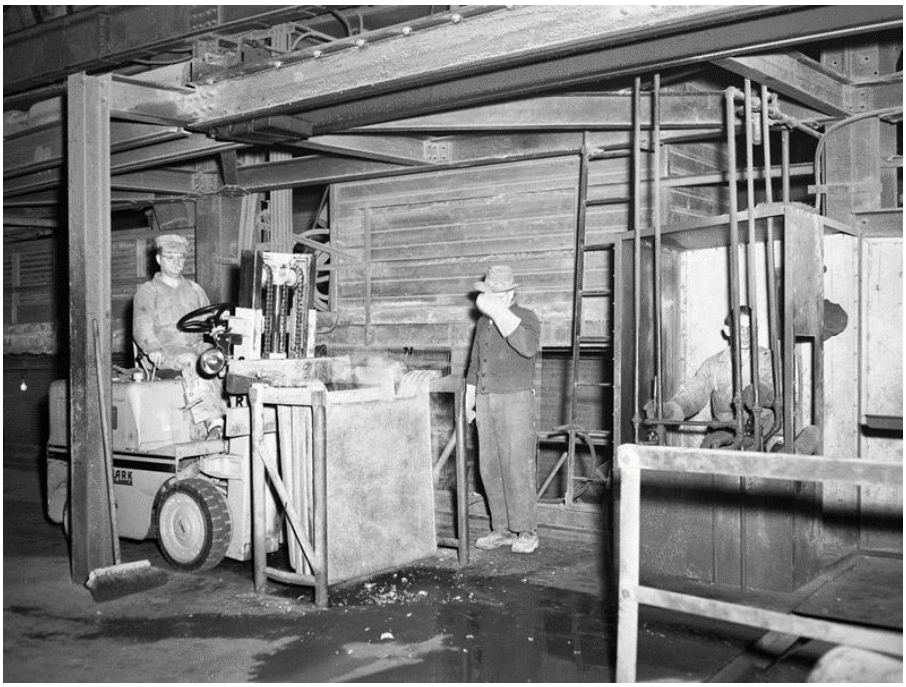

Figure 7.12: An employee moves a cargo of copper anodes in the smelter while not only not wearing respiratory protection but smoking a cigarette (Bolduc, early 1950s).

The 1950s were a boom time for Noranda as a corporation: in that decade, it grew from eight to 23 mines, including 14 in Canada, and from six to 18 plants in Canada and four more globally (City of Rouyn-Noranda, 2012, p. 3). This did not soften Noranda's approach to its workers in Rouyn-Noranda, nor the government's fears of communist uprisings ("Les communistes de l'Abitibi, démasqués," 1951; "Décision attendue avec impatience à Noranda," 1953). The first contract under the Métallos was signed in 1952 with minimal improvements to working conditions and was due to be renegotiated in December 1952. The negotiations, as usual, led

nowhere. Noranda's intransigence forced negotiations into arbitration by tribunal through the following summer. After two years of refusing to negotiate or recognize a union on the grounds of the IUMMSW and USW dispute and two more years of essentially zero concessions to Metallos-represented workers, Noranda claimed that the prolongation of the conflict past the December 1952 contract meant that, once again, it had no legal counterpart to negotiate with. The arbitrators acted with haste–to go on vacation. Although a decision had been expected between the end of hearings in June and July 17, as of July 23 the successive vacations of several members had delayed the likely decision date to September. The workers sent a letter of protest to the Quebec Minister of Labor, who replied that he would try to produce a decision as soon as possible. In September 1953, they went on strike, along with eight other Metallos-represented mines in Ontario and Quebec. *La Presse* explained, "They believe that if the arbitrators, in spite of their promises, can take vacations and thus delay the resolution of their conflict with the company, they too can take a vacation" ("Décision attendue avec impatience à Noranda," 1953, p. 19).

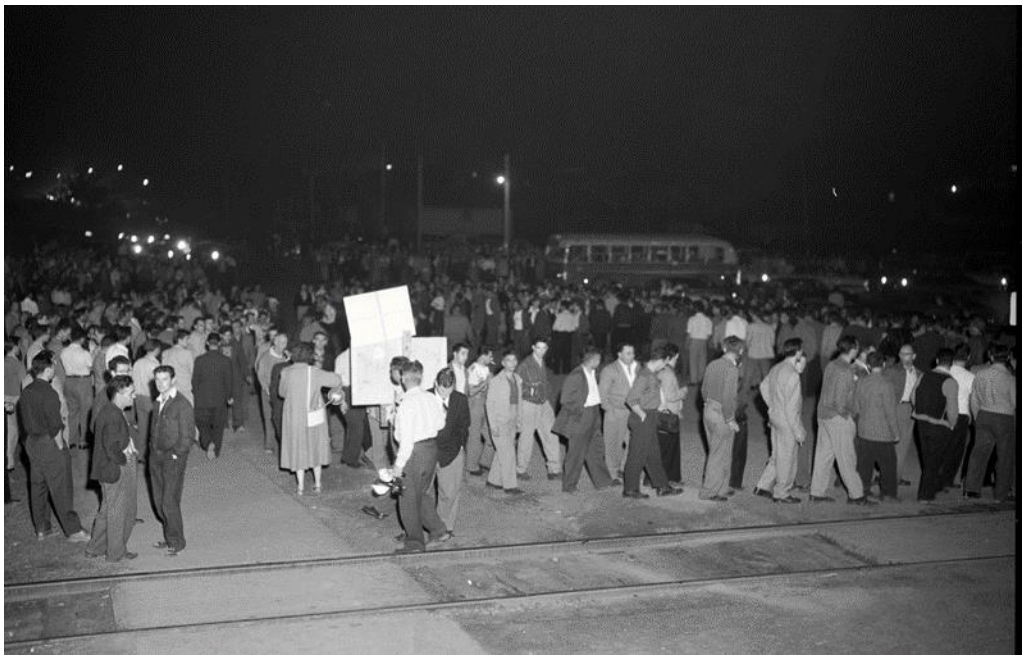

Figure 7.13: The strike picket line, likely photographed in front of the smelter based on the train tracks and locations of other photographs in this set (Early 1950s, Bolduc).

Albert Regimbal, a vicar in a Sudbury-area parish, took an interest in mining labor issues and wrote a detailed account of the strike in the Catholic Jesuit publication *Relations*. His story began with the familiar equation of Rouyn-Noranda with its smelter stacks and trails of smoke rather than its people or culture.

> The traveler who went into this mining country in early December 1953 couldn't prevent themselves from feeling sadness at seeing its huge chimneys without their familiar trail of smoke … the immense works without any other activity but the staff charged with maintenance (Regimbal, 1954, p. 37).

As usual, Noranda, as well as other mining companies targeted by the strike threatened to close if labor costs were raised, to which Regimbal pointed out that since

1948, they had benefited from subsidies under the Emergency Gold Mining Assistance Act (Regimbal, p. 39; Lasserre, 1983). Unsurprisingly, although USW had capitalized on red-baiting to supplant IUMMSW locals in Quebec, Noranda and other mineral companies had maintained the communist bogeyman with little interference from the provincial government. The companies claimed that because of that USW Canadian national director and prominent anti-communist C. H. Millard's connections to a social democratic political party, union dues would fund communism (Regimbal, p. 39; Wilson, 1989). Regimbal naively argued, "The fact that this union supplanted a union with communist tendencies in the gold region a few years ago should push the bosses to collaborate with it more" (p. 40). Regimbal identified the main impasse of the strike as, once again, the issue of paycheck withholdings for union dues. Despite the denial of these funds, the USW was spending $100,000 per week not on communism, but on supporting striking workers. Workers' families received $14 plus $4 per child weekly, and could have three meals a day at a union soup kitchen. Regimbal wrote that this support was essential to the strike's endurance. The actual reason for Noranda's fierce opposition to union-directed revenue is obvious. Red scare tactics had been so successful for decades against so little evidence that they likely seemed worth trying against an anti-communist, politically connected union to prevent it from growing power as well.

Figure 7.14: A worker at the anode casting wheel during a press tour sometime between 1956 and 1959. The visitors didn't have respiratory protection, either, though everyone did have hard hats (Bolduc).

Regimbal concluded:

> "There is a social problem: the collision between the power of capital and the power of *organized labor* …. One can't, however, avoid the impression that capital's power shows an excessive distrust of the union, which it considers as more of an enemy or a rival whose existence is undesirable" (p. 40).

An article heralding the end of the strike also began with the synecdoche of the smelter stacks and their smoke, now revived and suffusing the dependent lungs of Rouyn-Noranda's residents. While Regimbal had toured the region from a growing and personal interest in regional mining labor, author Guy Lemay had visited through a "precious collaboration" with area municipal and business leaders. Lemay wrote,

> The strike that paralyzed the Noranda mine for six months has now ended. The giant chimneys have resumed spitting smoke. On both sides, they are working to make up for lost time. The population of the sister cities now breathes freely (1954, p. 36).

Absurdity of linking smoke to breathing freely aside, there is likely truth in Lemay's depiction of the priorities of the non-worker population. Rouyn-Noranda had a population of about 25,000 people at the time of the strike ("Rouyn-Noranda," 1954, p.14). Regimbal had mentioned a weak vote "taken under the auspices of a citizens' committee with the goal of facilitating an end to the conflict" (p. 40). In contrast to Vicar Regimbal's attempts at realism, the rest of Lemay's piece displayed myth-making and forgetting at work. In addition to the mineral industry and agriculture, "there is also the forest, which covers a vast part of the territory, and which has been relatively little exploited up to here. If the exploitation is done rationally, as has been the case in the past, the forest will be able to bring in several million in revenue per year" (p. 36) [33].

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[33] Despite Quebec's railroad subsidies, Lemay estimated that the province was losing $125 million in commercial revenue per year to Ontario because it had once again fallen behind in transportation infrastructure, this time in Canadian National Railroad service and because the Mont-Laurier to Rouyn-Noranda stretch of the only major road to southern Quebec remained unpaved (1954, pp. 36-37). In a 1946 article in La Patrie, this road was described, "a magnificent road points east in the direction of Montreal" (Roy, p. 78)

The 1960s and After: Small Twists on Old Problems

The 1960s passed without strikes, but with labor conflicts about environmental health that demonstrated Noranda's pursuit of the same strategies and foreshadowed the battle to come. In October 1962, *L'Action*, a Catholic daily newspaper, wrote that Noranda was suing the Métalllos for $5,156,207 plus interest in financial damages from a seven-month strike by copper miners at Noranda's Gaspé, Quebec subsidiary in 1957 ("Plaidoyer de la Gaspé Copper," 1962, p. 18). Noranda insisted that the strike had been called by the union management, not the workers, and insisted that the strike was illegal because the Metallos's application for legal recognition of the miners was rejected after the strike. However, it still sought to hold the Metallos legally responsible for the actions of the striking miners. Although the Métallos lost $2,300,000 in the outcome of this case, they supported Noranda workers in Rouyn-Noranda when they came to the verge of a strike three years later, as reported in *Le Quartier latin*, a Socialist newspaper (Falardeau, 1965). Recent improvements to laws about union dues and strike rights had otherwise improved the union's stability. This time, workers' grievances included the requirement of mandatory overtime, health and workplace security concerns, lack of bonus pay for night shifts, Noranda's system of individually allocating benefits and promotions, and requirement of working for five years before being entitled to two weeks of vacation. Noranda, as usual, refused to negotiate on most of these, to the point that a judge overseeing arbitration asked the union to accept a mediocre offer in order to "immediately reestablish industrial peace" and given "the belligerent attitude of the company" (quoted by Falardeau, p. 5). Other repeat strategies of Noranda included accusing the Métallos of being an international union and circulating private offers to striking employees. Falardeau concluded, "It is

the Quebec government that must act to dislodge what has become a State within the State" (p. 5). While the city of Noranda was no longer officially governed by the corporation in 1965, it wasn't until this year that the other 1926 law was overturned, and then only indirectly by broader legislation.

In 1967, the USW and IUMMSW merged in Canada under USW's name, except the Sudbury Mine Mill Local 598 (Solski and Smaller, 1984, p. 159) "The Noranda Guys are ROTTING THEIR LUNGS at the Smelter," declared a 1969 headline in *Québec Presse* (Brind'Amour, p. 11A). The article added detail to the November 1965 conflict, explaining that a group grievance was presented about industrial hygiene in the mine and smelter demanding adherence to Article 141 of the Loi des Mines, which required sufficient ventilation of harmful dusts and gasses for worker security, and a thorough study to allocate work and rest time limits in each location of the smelter. Noranda refused to have a study and insisted that supervisors could direct "reasonable" accommodations for hazards such as heat and pollution. In June 1969, workers decided to hold a one-day work stoppage over the ventilation problem but did not go through with it. The union had to ask the government to enforce Article 141 and initiate the study.

Figure 7.15ab: These 1969 photos of Rouyn-Noranda were taken as part of a regional series ordered, oddly enough, by the public relations and advertising department of the Quebec Ministry of Tourism, Hunting and Fishing (Rémillard).

The local and international environmental movements of the 1970s and 1980s, the rapid evolution in provincial government policies and mandates, the long battle for the sulfuric acid plant that was finally built in 1989, and the details of the occupational and community environmental health crises of the 1970s, 1980s, 1990s, and early 2000s are beyond the scope of this paper and in some cases have been extensively chronicled elsewhere. However, it is worth noting several throughlines from this period. In the early 1970s, Canada's federal government followed the U.S. in establishing foundational environmental laws. Unlike in U.S. law, the air quality objectives established at the federal level were only suggested to the provinces, not mandatory, and these laws did not allow citizen lawsuits against regulation-breaking industries or government inaction until 1999 (Barnett, 1974; White, 2003). As Rouyn-Noranda activist groups such as Mouvement anti-pollution mobilized in the mid-1970s and brought the first lawsuit over SO2 damage to vegetation, Rouyn-Noranda's mayor and Chamber of Commerce and the head of the smelter union's labor federation took up the baton of threatening that the smelter could close (cited in Savard, 1978, p. 87, 91). The mayor, a doctor, even said that he would much rather die slowly from pollution than die of hunger if Noranda were forced to close (January 1976, quoted in Savard, 1978, p. 80). This is an example of the necropolitics of residents' options: no choice of a secure life, only paces and ways of dying framed as if anything more would be unreasonable. Noranda accused the government-organized environmental advocacy committee of communism (Desfossés, 2019). Although the Noranda Horne mine closed in 1976 for non-political reasons, the smelter, of course, did not (Noranda Fonderie Horne 2000). At this time, the smelter was emitting roughly 1,650 tonnes of

SO2 per day on average, even more than Trail's pre-settlement peak (Desfossés, 2019).

Rouyn-Noranda joined the cycle of pollution studies in 1978, when Marcel Léger, in the newly created Quebec Minister of the Environment role, launched the Bureau d'études sur les substances toxiques (BEST, Office of Studies on Toxic Substances) series of studies of the Rouyn-Noranda area (Desfossés, 2019). In 1979, government bodies conducted a study of lead exposure in children living in the Notre Dame neighborhood of Rouyn-Noranda (Comité Conjoint, 1990b). All of the 29 children had blood lead levels above 100 ug/L. Meanwhile, Noranda threatened to close if the provincial government tightened environmental regulations ("Noranda touchée sévèrement par l'effort de dépollution, 1980). Early 1980s research led by Dr. Irving Selikoff's team at Mount Sinai found much higher levels of lung cancer morbidity and mortality among Rouyn-Noranda smelter workers than the general public and suggested that arsenic exposure was the cause, and in 1982, an examination of 1965-1974 data by Cordier, et al. found "an overall excess of death in both sexes [for Rouyn-Noranda residents] over the whole province" from causes such as lung cancer, chronic respiratory diseases, and metabolic diseases (Cordier et al., 1983, p. 315). In response, the smelter's union (now CSN instead of Métallos) and an anti-pollution organization held a press conference asking the Quebec government to apply measures so that "Noranda Mines would cease its pollution as much on the exterior of the smelter (acid rain, heavy metals) as on the interior (exposure of workers to sulfur emissions and diverse toxics such as silica and arsenic)" (Magali, 1984; Borone,

1979).[34] Studies in 1989 found that the average blood lead level of the Notre-Dame children aged two to five was 110 ug/L (Comité Conjoint, 1990b, p. 5).[35] Reducing them to under 100 became the goal. Among other measures, the resident-city committee called for an end to open-air concentrate storage (Comité Conjoint, 1990a, p.3; Ville de Rouyn-Noranda, 1989)

In 1999, the first official case of chronic berylliosis was discovered in Quebec (Noranda Fonderie Horne, 2001; Peloquin, 2005a, p. 22). Berylliosis, also known as chronic beryllium disease, is an incurable and sometimes fatal granulomatous lung disease caused by exposure to beryllium (Sizar and Talati, 2023).[36] Its latency period is three months to 30 years. Beryllium exposure can also cause lung cancer and chemical pneumonia (OSHA). As Noranda responded to the threat to workers in the smelter (with dubious urgency), the employees' union requested systematic screenings for Notre Dame neighborhood residents. Medical authorities refused, mostly due to the anticipated costs of over $500 USD per person (Peloquin, 2005b, p. 3).

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[34] Noranda blamed the pulmonary diseases on workers' lifestyles and cited the money it had invested in improving air quality and working conditions at the smelter (Halter, 1983).

[35] 117 children were tested. Sixty children, or 51%, had blood lead levels over 100 ug/L; seven children were over 200 ug/L, and two children were over 250 ug/L.

[36] Berylliosis had been a known occupational hazard since at least the 1930s (Samuels et al., 2022, pp. 294, 300).

The industry, worker, and general public's responses to the resulting occupational and community environmental health crisis, as framed by the press, are timeless. From March 2005:

> Accustomed to seeing the immense cloud of smoke from the Horne Smelter, the residents of Rouyn-Noranda, neighbors of the plant, have long accepted the risks tied to exposure to lead, arsenic, and a host other dangerous pollutants (Peloquin, p. 1).

> "I continually have the impression that there is beryllium everywhere around me. It's unlivable! But with three children to feed, do I really have any choice but to do this?"
>
> - a Noranda smelter worker suffering from berylliosis and resulting depression who continued to work at the smelter (quoted in Peloquin, p. 3)

> Whatever its employees say, Noranda nevertheless maintains that the levels of beryllium concentrations at the Horne Smelter are among the lowest in the world and are conscientiously maintained well below the norms judged acceptable for the health of workers (Peloquin, p. 2).

Conclusion

Based on Kuhlberg and Miller's incorporation of 1890-1920s discussions of smelter fumes' impacts in Ontario newspapers, Savard's analysis of extensive 1970s news coverage of Rouyn-Noranda smelter pollution, and the amount of detail on area labor dynamics Rouillard and Gourd found within generally anti-labor coverage through 1950, I expected to find more than one or two direct mentions of Rouyn-Noranda smelter pollution problems in 1927-1965 news coverage. I assumed that the impacts of the smelter's pollution on immediate areas and any proposals to address them would be of similar significance to the Rouyn-Noranda area as Noranda labor conditions and strikes. While those histories may be present in news archives I have yet to review, this chapter reflects what I unexpectedly found instead: the prominence of red scare dynamics and the overwhelming proportion of labor histories. The anti-communist policies and rhetoric seem almost absurd, but the news articles about raids and Noranda's continued reliance on red scare tactics even after any credible threats had been thoroughly crushed suggest that they were used successfully to stifle dissent.

It is clear that there were many barriers to anyone whose experiences and preferences went against the status quo of mineral industry dominance in the area: economic forces, the 1926 laws, industry ties of politicians, anti-communism laws, the threat of deportation for non-Canadians, language barriers within the population, ownership and biases of regional press, the remoteness of Rouyn-Noranda from major Canadian cities, other forms of social control, and potentially public sentiment. And even if such dissent did happen and was written down, barriers to its retrievability in contemporary archives include the anti-communism laws' explicit provisions for

destroying written materials and bias about what histories and materials are worth saving. For example, the women of women's auxiliaries of labor union locals knew what it was like to raise children and keep a house in a smelter town, and they had extensive correspondence with other women's auxiliaries, but very little of that was retained even in union archives (Garneau, 2019). The authors cited above include more non-resident men who went on promotional tours than women.

We cannot assume what these layers of obscurity hide, if anything. However, the stories above show that the smelter's pollution was a dominant aspect of Rouyn-Noranda from its beginning, that it killed vegetation, and that there were demands to control this pollution due to the damage it caused beginning in at least 1939. There is no exact date for mine and smelter workers' complaints about environmental health hazards above, but the first mention above of respiratory protection not being sufficient mitigation is from 1936. The many labor battles show the jobs offered in mines and smelters were not provided out of charity, and whatever their feelings about their work or economic dependence, workers were not willing to accept all working conditions. Although most of the strikes failed to achieve their desired results and sometimes even set workers back, their strength gained by support from other mining locals suggests lessons in the role of networked solidarity in labor and social movements.

Today, workers at the smelter undergo regular medical screenings and blood tests, but these are conducted by a doctor hired by Glencore and the summary of the results are not made public (Glencore, personal communication, September 20, 2022).

The smelter and area mines are no longer the primary source of employment or revenue for Rouyn-Noranda, and a large share of the smelter's workers are contractors not represented by CSN.

The stress and uncertainty of living under heavy pollution, of uncertainly known but variable amounts, with unreliable information, little agency, and health implications that may or may not arise at some uncertain date receive more sympathetic media attention now than decades ago. However, as in the Trail smelter dispute, sympathy can coexist with dismissiveness. Governments now use the emotions of the public as a justification to withhold data from them. There have been countless articles about the worries of parents whose children were poisoned by arsenic in Rouyn-Noranda, and sometimes even the worries of the children themselves. Yet these articles rarely contextualize this in the full number of children known to have high arsenic and lead levels in Rouyn-Noranda's recent past or the toxicology research that putatively informs the public health standards.

Chapter 8

ANALYSIS AND CONCLUSION: DEFERRALS, FOOT-DRAGGING, DISTRACTION

Figure 8.1: Being kept away from a press conference by Prime Minister Legault in front of City Hall on September 29, 2022. Photograph by the author.

> The key idea in the Rouyn-Noranda Region project is to perfect an intervention mechanism that will permit the restoration of an acceptable quality of life to the local population when they are affected by nuisances, especially industrial kinds. Thus, first of all, pollution must be stopped at its source, to a level acceptable to the citizenry, all while remediating as well as possible the affected zones that want to recover their population (Gauquelin, 1978, p. 28).

> We find that the Minister of the Environment didn't take the place he should have during the public assembly; after an article in the press, we

> wonder about the minister's credibility …. It must be understood that the time when people were ignorant is over!"
>
> - Minutes from a December 1989 Notre Dame neighborhood committee meeting about children's blood lead levels (Comité Conjoint, p. 2-3).

> Noranda polluted like no other industry in Quebec. Today, the mineral company has become a model corporate citizen. Morale: when one wants to, one can! (Nadeau, 1998)

> "I was born here and, at 53 years old, I'm in good shape! …. "The only thing that I find sad, is that in the summer, sometimes it happens that my flowers are burned in the morning because of the waste that's in the air. Some days, when there's a problem at the smelter, you also have to totally stop cooking, otherwise it tastes of sulfur and it's inedible. Otherwise, it's a really nice neighborhood" - Gilberte Cloutier, "who lives next door" (quoted in Peloquin, 2005a, p. 3).

> "This isn't what the population had said in expressing itself at the public meetings. This isn't functioning. We are sickened. We were not listened to" - resident Jean Garant on the 2023 attestation (quoted in Poirier, 2023).

M. X was likely among the 200 households who settled with Noranda after threatening to sue. The SO2 fumigation that destroyed his garden in August 1987 had happened because of a weather inversion. Despite stopping the smelter for two hours to avoid the inversion, SO2 levels had reached 2.8 ppm, well above the thresholds disputed in Trail and Sudbury. About 100 plaintiffs filed 144 formal notices of damages a week later, and about 10% chose to sue individually. Noranda chose to settle individually to avoid going to court ("200 familles…", 1987, p. G7).

An October 1987 article in *La Presse* on the conclusion of these settlements took a slightly skeptical and minimizing tone at the damage claims. "Some would have even recorded damages to their automobile paint or their garden furnishings," it scoffed, two years before the smelter's sulfuric acid plant went into operation ("200 familles…", p. G7). In addition to damages for loss of enjoyment,

> The other damages were the object of a case-by-case evaluation, almost flower by flower. This is how a spokesperson for the plaintiffs, Madame Suzanne Chènard, got $104 for 5,200 square feet of yellowed lawn, 15 for a defoliated weeping willow, which should turn green again next spring, and 21 for 12 geraniums.

The article continued to equivocate. It referenced the delays and government secrecy around the financing of the still-unbuilt sulfuric acid plant, then noted, with unclear point, that sulfuric acid is used to disappear witnesses in noir films. After the sulfuric acid was built, it noted, the smelter would remain the largest polluter in Quebec and the 10th-largest in North America, but "the health effects of this gas are still poorly known" (p. G7).

The next spring, The Record announced, "Noranda may be polluting air" in an article about charges filed against the company for the massive SO2 emissions that caused the fumigation (March 1988, p. 2). If found responsible, Noranda faced fines from $10,000 to $50,000, along with minimum fines of $600 each for two other environmental charges. Also that spring, a scandal broke that the $83 million loan Noranda had received from the federal and provincial governments to cut pollution from the smelter would never have to be repaid ("Money was only a loan - Noranda," p. 1). As the sulfuric acid plant began operation in December 1989, the lead poisoning crisis reemerged.

The Value of Finances As Ethics

I cite these numbers as an example of the relative magnitudes of fines for pollution compared to general corporate operations even in cases where the provincial government is setting the scales. I have not focused my analysis on numbers such as profits and the costs of new technologies partly because accurate and comprehensive numbers from the corporate side are nearly impossible to access even if all other calculations such as inflation, standard taxation rates, and mineral prices were easy to track through history. Beginning with early attempts by Quebec to tax the mining industry, there was a battle over whether to tax gross revenues or net profits, in part due to assumptions that the mining industry would manipulate net profit figures, its preferred tax basis (Armstrong, 2009). As mentioned in the section on the 1953-4 strike, gold-producing mines cited low gold prices as a reason to not raise pay while receiving ongoing governmental subsidies to buffer markets. Glencore is currently emphasizing the claimed costs of its FENIX and VELOX pollution abatement plans. But these costs are deferred maintenance that Glencore discounted in past decision-making. Glencore's tax valuation has been lowered repeatedly by the presence of decrepit and disused buildings at the smelter and Glencore's pattern of demanding lower tax assessments (Luneau, 2023a; Luneau, 2023b). But if and when Glencore pays to demolish them, its tax rate won't go up. This is a modern version of the cognitive and rhetorical dissonance about the economics of forests and smelters discussed in Chapter 5. Rather than going deeper into an analysis of how much money Glencore and previous owners of the smelter have saved by deferring things such as necessary pollution controls and labor standards, I think it's more productive to focus on the externalities themselves, particularly those not easily quantified.

Unquantifiable Externalities

The ARET leader I met with, Nicole Desgagnés, had been a high-level administrator in regional health and social services in Abitibi-Témiscamingue before retiring.[37] Her activism is partly motivated by never having heard discussions of arsenic at high-level public meetings she attended, which included regional planning meetings and the participation of the regional director of health. She believes this was an intentional choice to hide the issue. When the 2019 crisis of children's arsenic levels emerged, she "was furious," and the feeling of betrayal has tainted her memories of her career (personal communication, October 2022). In her public health career, she had also worked on a non-environmental program to improve outcomes among low-income mothers and children in the Notre-Dame neighborhood. The metrics of the mothers improved through the program, but the children's outcomes did not seem to budge. In retrospect, she wonders if the high levels of lead they were exposed to was the cause. Dr. Pierre Vincelette, the retired doctor that I met with, had been proud of his efforts to reduce Notre-Dame children's blood lead levels to below 100 ug/mL, the standard at the time, efforts that also led him to believe that the government was proactive about ecotoxicological hazards to children (personal communication, October 2022; Vincelette, 2022). He now regrets telling parents not to worry because their children's blood lead levels were below the action level. Who will compensate him for damage to his satisfaction in an honest and beneficial career? There is, as far as I know, no data on the first set of children's blood lead levels nor either group's longitudinal outcomes through adulthood.

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[37] Desgagnés is a spokesperson for ARET and has shared her and ARET's perspective in the press over the past few years, including in Zhang, n.d. and Hercegova, 2022.

The Repeated Games of Perpetuating a Smelter

A fundamental problem for residents who incorrectly trust the government to be managing industries' impacts or who desire more regulation is that they tend to believe that they are in a coordination game with the government for general well-being, whether or not they believe that that includes maximizing economic productivity. In reality, the provincial government and smelter's corporate owner can be described as playing a coordination game in which the maximal outcome for both parties is for the smelter to stay open with a minimal level of confrontation. The historical and potential reasons for the government's cooperation are beyond the scope of this thesis, but examples include fears of ending one's political career by threatening the smelter, economic considerations for workers and revenues, agencies being forced to cooperate with industry by higher authorities, fears of litigation, and simply preferring not to make a politically controversial decision. For example, progressive Rouyn-Noranda–Témiscamingue Deputy Émilise Lessard-Therrien, who had been outspoken in demanding tighter pollution controls at the smelter, lost her first reelection campaign to former Deputy and undisclosed current mining lobbyist Daniel Bernard in October 2022 (Gerbet, 2022). There were rumors that her public position on the smelter contributed to her loss. The government has the additional objective of appearing to fulfill its duties by preventing major crises or public outrage. The corporation has the objective of maximizing profits, including by obtaining financial concessions. Things like special emissions limits, long-term financial agreements, and exemptions are signs of the repetition and the trust between the two parties it has built. Whether it is a true coordination game or a game of Chicken (where the government truly wants to impose strict regulations) is variable by the government in power.

This game is typically finite, as most smelters or other industries eventually close. Because corporate strategies change and corporations change owners, most iterations of the game occur without either party knowing how many more are left, so under the assumption of an infinite game. However, the game can unilaterally change forms if the corporation no longer wishes to keep the smelter open for financial and broader strategic reasons. It is in the corporation's interest to retain this information asymmetry and not reveal the imminent end to repetitions and changing object of the game (away from keeping the smelter open) to the government in a cooperative manner. Otherwise, government will lose the incentive to cooperate to keep the smelter open and might want to punish the smelter for defecting. There are also benefits to divide competitively: the dominant framing of the closure (such as excessive regulations), clean-up costs, and last-ditch financial incentives to remain open.

Quebec Prime Minister Legault's July 2022 proposed options of subsidizing the smelter to improve emissions or closing it are more coherent in this context (Robillard, 2022).[38] This was widely reported as Legault threatening to close the smelter, not him establishing a false choice to justify the status quo (Lemor and Montpetit, 2022; "Le gouvernement Legault menace…", 2022; Luneau, 2022). In the September 2022 press conference I was present for but kept behind a police line from, he again proposed a public choice of whether to close the smelter. This time, he

[38] His absurdities are in line with the 1926 provincial debates. About the deviation from 3 ng/m3, Legault said, "I am not an expert in nanograms" (Robillard, 2022).

suggested that Rouyn-Noranda residents vote on whether the plant should close, explaining,

> One is a plan that is acceptable to the population, that respects health, that respects the environment. On the other side is the closing of the plant. If we go that way, we have to examine the impact because this (smelter) represents lots of well-paid jobs …. If the majority of the population wants to close the plant, we will close the plant. I can't be clearer. (quoted in Boisclair, 2022).

This framing is identical to that used by Glencore and previous owners of the smelter. Residents I asked about his proposal were outraged and incredulous, pointing out that Legault and other public figures were the ones proposing to close the smelter, not them. One rhetorically asked me if Rouyn-Noranda would be allowed to permit drunk driving. After the majority of respondents in the closest thing to a referendum, the attestation process, expressed a preference for a 3 ng/m3 standard, instead of having their bluff called, the government simply ignored them. In cases like these, if residents recognize the threats of closure as a manipulation, they may interpret it as a sign that they have collective power. This, and taking the possibility and local consequences of closure seriously, may influence them to reduce their demands and use a less confrontational strategy. After there are minimal concessions to their demands in the outcome, they may realize that there was a parallel game in which they were not a main player.

In addition to not knowing that they are either non-players or antagonists in a coordination game between industry and government, unless collective memories have been maintained, residents are frequently unaware that they are in a repeated game or what branch they are on. As mentioned above, even activist Noel Savard's 1978 thesis

on 1970s anti-pollution advocacy in Rouyn-Noranda only antedated the conflict to the beginning of the decade. There are examples of communities, often those with long histories of local place and oppression, whose strategy is completely different due to having this awareness. The smelter unions, too, were often aware of the game and its repetitions, hence their insistence on maintaining costly strikes rather than accepting unacceptable contracts. The communities who are not aware therefore tend to trust the strategy of the government, including its implicit or explicit primary goal of keeping the smelter open. This is also part of why thoughtlessly repeating the fiction that this battle started in the 1970s–often framed as a revelatory historical insight that the game didn't start this decade!–is so harmful.

Humans As Waste, Resources, and Sinks

Chapter 5 raised a question: how could Quebec's parliament describe Abitibi-Témiscamingue as both not yet colonized and containing settlers? Some of this was simple rhetorical convenience, but from the events described in the subsequent chapters and using the analytical lenses of Liboiron and Franklin, this paradox describes part of a system in which Resources, Land, and humans are limitless and infinitely expendable. In Sudbury and Rouyn-Noranda, colonizers were encouraged to farm in areas inherently unsuited for it. In addition to the injustices they faced from smelter fumes, the entire arrangement was a waste of thousands of people's efforts and time. The Trail smelter tribunal concluded that the area was inferior for farming while also blaming the farmers for choosing the location and their farming practices. But based on descriptions of the area at the start of colonization and the tribunal's underrating of smelter fume impacts, it seems more likely that the U.S. and Canada's encouragement of timber clearing, mining, and smelting had rapidly degraded the land. How would Noranda's mine and smelter have been run if there were only 1,000 workers available in every generation? Rouyn-Noranda's mining and immigration heritage are widely commemorated, but hundreds of immigrant mine and smelter workers were deported by the government at the behest of Noranda, and countless more were rendered expendable by deadly working conditions and replacements for striking workers.

There is extensive theoretical literature on different concepts and purposes of waste under colonialism and capitalism, including humans and labor rendered waste. In this case, I combine that framework with the extension of the concept of sinks to

humans, following Gabrys (2009). In the concept of sinks, the goal is to determine how much waste a natural system can absorb before it is no longer usable for the colonialist and/or capitalist purposes assigned to it (Liboiron, 2020; Gabrys, 2009). For example, a river primarily used for industrial transport can be polluted until it is hypoxic and unsafe to swim in. This is exemplified by the Trail smelter tribunal's investigators noting, "It may be added that Northport has an exceptionally favourable site for a smelter. It has ample grounds, a plentiful water supply, cheap electrical power available and a government right to dump slag in granulated form in the Columbia River" (Howes and Miller, 1929, p. 10). In a recent lawsuit by Colville Tribes and Washington State over the Trail smelter's nearly 10 million pounds of slag and toxic waste dumped in the Columbia River over the decades, much of the litigation and the smelter's defense revolved around classifying the upper Columbia River as a waste disposal facility (Bishop, 2009; Ciofi, 2016). The many battles over the invisible injury theory to vegetation above also hinge on this concept. Even the 1987 newspaper article above about Rouyn-Noranda residents' settlements for plant damages mentions that the "defoliated weeping willow … should turn green again next spring" ("200 familles…", 1987, p. G7).

In the cases analyzed here, this mentality can be extended to humans as well. As Gabrys wrote, "But the location and function of sinks do not necessarily settle into a global – local dichotomy; they, instead, reveal a complex set of natural – cultural processes always in the making" (2009, p. 668). There is a long history in occupational health of companies attempting to perfect a maximum extraction of both work and exposure to toxics. The berylliosis-suffering worker quoted at the end of

chapter 7 who kept working at the smelter was one of several (Peloquin, 2005a). Desgagnés, the ARET leader I met with, was also outraged by the apparent feeling of indifference toward residents who have already been heavily exposed in the slow timelines proposed for arsenic emissions reductions. She believed that their rationale was that due to latency and irreversible, accumulated exposure, the same amount of people would die if the pollution stopped tomorrow: "people are already scrapped" (personal communication, October 2022). The lag in studying and addressing human impacts of pollutants is often attributed to the difficulties in determining causality. One explanation for the lag observed between confronting smelter impacts to ecological systems and impacts to human health in this thesis's three case studies may be humans' remarkable capacity as a sink for their purposes of social and capitalist reproduction.

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