



UiT The Arctic University of Norway

Department of Archaeology, History, Religious Studies, and Theology

## **Vestiges of a Previous Industrial Age**

A Contemporary Archaeology of Twentieth Century Single Industrial Mining Regions in the Far North

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A Contemporary Archaeology of Twentieth Century  
Single Industrial Mining Regions in the Far North



*Severonickel plant in Monchegorsk framed by a window of a ruined telecommunications tower, July 19, 2019.*

*Cover: Railyard at Sydvaranger facilities, Kirkenes, February 22, 2021.*

*All photos and maps in this text are by the author unless stated otherwise.*



# Abstract

This thesis aims to develop archaeological understandings of mining communities and sites in three (sub-)Arctic regions in Norway (Sør-Varanger), Canada (western Labrador), and Russia (Kola Peninsula), all of which underwent rapid industrial colonisation during the twentieth century. Today the regions continue as resource peripheries despite economic, social, and political changes that made the construction of single industrial settlements no longer tenable. As such, these regions are “vestiges” of a previous industrial age – objects of the past that make up and influence the present that also contain potentials to be remobilized and serve new purposes.

The thesis addresses four basic questions:

- Q1: To what extent did material legacies emerging from a period of significant government interest and investment in the regions survive into the present and how do they continue to persist in a time where investment into social services has declined and industrial labour has become more flexible?
- Q2: What tensions arise when things from this prosperous past find new purposes in the present or remain recalcitrantly redundant?
- Q3: What does the urge to give things from the past “usefulness” tell us about the temporal and geographical boundaries of the resource extraction industry in the (sub-)Arctic?
- Q4: How does one do an archaeology of non-abandoned sites?

The thesis addresses these questions from a new materialist perspective and a multi-sited methodological approach that combined fieldwalking, photographic documentation, archival research, and select interviews. Through articles and the discussions in this introductory text, it advances knowledge in three areas that have been called “Pasts in the Present”, “The Working Fine and the Broken”, and “An Archaeology of Non-Abandonment” to develop understandings of how one can archaeologically engage with ongoing industrial regions in the present. Specifically, it highlights how everyone is physically and materially entangled in the past, how heritage discourses should move away from dichotomies between things that are working fine and things that are broken, and how archaeology and heritage should abandon the notion of “abandonment” as a useful heuristic concept to make room for alternative understandings of how the present grows out from the foundations of the past.



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This text was written on the ancestral homelands of the North Sámi, in present-day Romsa (North Sámi)/Tromsø (Norwegian) in Northern Norway. Research for this PhD was carried out on the ancestral homelands of the Skolt Sámi around ǰeârkknjargg (Skolt Sámi)/Girkonjârga (North Sámi)/Kirkenes (Norwegian), on the ancestral homelands of the Akkala Sámi around Мончегорск (Russian)/Monchegorsk (English transliteration), and in the present-day Canadian province of Newfoundland and Labrador. The latter hosted a significant amount of research and writing for this PhD. The island of Newfoundland is the ancestral homelands of the Mi'kmaq and Beothuk. I would also like to recognize the Inuit of Nunatsiavut and NunatuKavut and the Innu of Nitassinan, and their ancestors, as the original people of Labrador. We strive for respectful relationships with the people of this province as we search for collective healing and true reconciliation and honour this beautiful land together.<sup>2</sup>

I am a Latvian-born Russian settler who was born in Riga. My father is from a historically Russian community of Eastern Orthodox Old Believers in eastern Latvia. My mother was born in Russia; from her I also get Russian-speaking Ukrainian and Ashkenazi Jewish roots. I grew up in Texas and Oklahoma on the traditional territories of the Jumanos, Tonkawa, Ndé Kónitsąáí Gokiyaa (Lipan Apache), Coahuiltecan, Nūmūnū (Comanche), Kiikaapoi (Kickapoo), Tawakoni, Wichita, ʘʘʘʘʘʘ ʘʘʘʘʘʘ ʘʘʘʘʘʘ ʘʘʘʘʘʘʘʘ (Osage), Muscogee (Oklahoma), Caddo, O-ga-xpa Ma-zho<sup>n</sup> (O-ga-xpa), and Očhéthi Šákówiŋ. Most of my education and career was spent in southern Ontario, Newfoundland, and Labrador on the traditional territories of the Haudenosaunee, Anishnabewaki, Attiwonderonk (Neutral), Mississaugas of the Credit First Nation, Mississauga, Wendake-Nionwentsiö, Beothuk, Mi'kmaq, Innu of Nitassinan, Inuit of Nunatsiavut, and Southern Inuit of

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<sup>1</sup> Academic research does not grow in a vacuum, springing fully formed out of the researcher's head. Instead, all research is place-based. It happens on land, coalescing from other researcher's books, articles, and conference talks; popular media such as music, TV shows, and movies; conversations with friends, mentors, students, teachers, and total strangers; daily experiences and life stories; classes, conferences, and seminars; dreams and random encounters; learned techniques and improvised methods; borrowed and bought equipment and tools; research funds generously donated by public bodies; and freedom of movement that comes from the enormous privilege of being an academic – in this case also Western, white, heterosexual, and male. Part of the gratitude shown for this emergence is in the works cited, which I hope you as the reader will visit, but what cannot be covered in the Works Cited section deserves to be covered here, in the acknowledgements section. Hence the length. I deeply distrust short acknowledgements – extensive gratitude needs to be normalized. For more see Bjerck 2022 on how life experiences and daily encounters shape and form research and Venovcevs 2017:iv-viii and Liboiron 2021:vii-xii on extensive gratitude within their acknowledgements. (Thank you Dr. Liboiron for one of the most amazing acknowledgement sections I have ever read, this has been truly inspiring for me here.)

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<sup>3</sup> Many of us occupy someone’s native land and many resources exist to help us identify the original caretakers of the land we are on. Here, I used my own knowledge as well as the website <https://native-land.ca/> for this section.



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*To the displaced – the refugees, the immigrants, the settlers, and the resettled.  
To windblown seeds who take root in foreign soils.*



# 1 Introduction

## 1.1 Project Background

*“Ну, мы так и живём.”*  
- Владимир Венёвцев  
*“Well, that’s just how we live.”*  
- Vladimir Venovcev

The best place to start the summary discussion of a thesis might be at the beginning<sup>4</sup> and one of those beginnings is my father, currently living in a mid-1980s suburb of Riga (Figure 1). My father is somebody who was born and lived in (post-)Soviet Latvia all his life, somebody who once worked in a factory and then had to adapt to changing political and economic realities in the 1990s, and somebody who remains confronted by the (post-)Soviet built environment every single day.



Figure 1: Vladimir Venovcev in Riga, February 4, 2019.

My father has a phrase that I heard him repeat on many occasions – *“Ну, мы так и живём.”* This phrase comes as a reply to any comment (usually dislike, surprise, judgement, or pity) about realities of living in a (post-)Soviet neighbourhood – the tall grey buildings, the small apartments, the dark colours, and the harsh smells in the hallways – the textures of life entangled with the

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<sup>4</sup> See also the Acknowledgements.

infrastructures of a different world. Unfortunately, the English translation, “Well, that’s just how we live,” does not bring across the full spectrum of associated intonations from the original Russian which carries with it a mixture of acceptance, resignation, and bodily understanding of the phenomena from the “inside” (Tilley 2008, 271). It is hard to capture that in text or translate it into a foreign language<sup>5</sup>.

I also come from this world, my earliest memories solidifying right after the fall of the Soviet Union. However, the later part of my childhood and early adulthood ended up forming in another world, that of the United States and Canada, before I found myself in Norway where I sit as I complete this PhD. Through it all, both my personal life and my archaeological career has been spent among panel block apartments, suburban single-family homes, gravel quarries, access roads, derelict structures, planned communities, and occasionally the discomforts of life with the material remains of various pasts. It is this set of life experiences that drew me to the subject of this thesis and informed my approaches in carrying out this work.

This thesis looks at twentieth-century single industrial mining regions in (sub-)Arctic Norway, Canada, and Russia – specifically those of Sør-Varanger, Western Labrador, and the Kola Peninsula (Figure 2). As I explain in Section 4, these places were established by and for the mining industry with significant economic and political investment by their respective governments as part of northern industrial colonisation. Despite ambitions to create settled, industrial, northern frontiers, the economic and political changes of the 1980s and 1990s removed many of the original economic and political underpinnings that industrialized these regions in the first place. However, they continue to persist, either transitioning into new economic and political realities (western Labrador and the Kola Peninsula) or becoming imperfectly deindustrialized (Sør-Varanger).

The task of this study has been to archaeologically understand these northern regions that sit imperfectly between a glorified industrial past and the realities of the present while posing questions for contemporary societies on what to do with industrial heritage that is too excessive, expensive, unsightly, or imperfectly useful. Instead of work of reanimation of a defunct industrial past (Orange 2015b), the study aims at reaffirmation of a past that is already animated and present but also untimely (Lucas 2015, 7-9). It is a past that does not necessarily contain some sort of redemptive potential and to glorify it would be to ignore the colonial and environmental violence it incurred. Rather, there is a tacit existence of a past in the present but the historical causes of which are no longer there. What is left is a mere existence within this surviving past beautifully summed up in my father’s words – “*Hy, мы так и живём.*”

Much of my research centred around five industrial communities where I was based and spent most of my time during fieldwork – Kirkenes and Bjørnevatn (Sør-Varanger), Labrador City and Wabush (western Labrador)<sup>6</sup>, and Monchegorsk (Kola Peninsula). However, as these communities do

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<sup>5</sup> Though not for the lack of trying as multiple scholars have worked to understand the complexities of life with Soviet heritage in the Baltic republics (Grava 1993; Bunkše 2007; Cinis, Drémaité, and Kalm 2008; Boldāne-Zeļenkova 2017; Martínez 2018).

<sup>6</sup> A note on terminology – in this manuscript “Labrador West” and “western Labrador” may appear to be used interchangeably but they are slightly different. Labrador West collectively refers to the municipalities of Labrador City and Wabush and their associated iron mines – the Iron Ore Company of Canada (IOC) and the Scully (aka Wabush) mine. Western Labrador refers to the broader inland region of the Labrador part of the Canadian province of Newfoundland and Labrador. This includes outlying regions like the Ashuanipi River, the Quebec North Shore and Labrador Railway, and the hydroelectric power stations/communities of Twin Falls and Churchill Falls.



not exist in a vacuum, but are instead connected to a broader web of infrastructural and industrial networks, my scope became regional while my methodological approach became multi-sited and multi-scalar (see Section 3). This led me out of the communities where I was staying to explore the wider network of mothballed installations, disused quarries, waste rock piles, and pieces of used and disused infrastructures while working from the scale of a mine down to litter and everyday waste.



Figure 2: Case studies in this PhD

My research cannot be separated from the broader global context in which it was situated, namely, the work for this thesis was done during the worst years of the COVID-19 pandemic which greatly affected my case studies, travel, and research methods (see Section 3.1). As such, my methods prioritized fieldwalking, photography, experiential phenomenology, and archive visits over, for example, extensive in-person interviews. Through such methods, I sought to observe and document how regions that industrialized in the twentieth century carry on this mode of existence into the present. How do they exist with all the tensions and contradictions that may ultimately result when a not-quite-useful, not-quite-abandoned material past also persists? I extensively documented this both in this text and throughout my articles.

As such, I advance three main contributions to knowledge (Section 5). The first, which I call “Pasts in the Present,” ties the concept of *Nachleben*, coined by Aby Warburg and developed further by Marek Tamm (Tamm 2015, 9-10; Tamm and Olivier 2019, 5-6), with the idea of “alterlife,” coined by the Métis scholar Michelle Murphy (Murphy 2017, 2018), to demonstrate how the past becomes materially and behaviourally ingrained in a present that both constrains and enables different possibilities. The second contribution muddles the distinction between “The Working Fine and the Broken,” which is presupposed in the discourse within both heritage and waste management (Harrison 2021), thereby calling for new conceptualisations of things from our past. For my final contribution,

following my own results and the conclusions of others, I propose “An Archaeology of Non-Abandonment” as both a methodological and theoretical intervention arguing that archaeology can and should be more than just the study of superfluous, abandoned things while proposing that the concept of abandonment itself should be abandoned.

Throughout this text, I discuss the above points in more detail. I start by outlining my research aims and objectives, as well as introducing the methods I used to address these, and then outline the results, which consist of four peer-reviewed articles and one artistic contribution – a slam poem. In Section 2, I expand on the theoretical groundwork that underpinned my study by offering a literature review of relevant recent developments in the new materialist approaches that ground my study, as well as other theories and ideas from which I drew inspiration when operationalizing my approach. Section 3, then, offers a methodological discussion that reflects my theoretical standpoint. It also addresses the various challenges that arose when carrying out my fieldwork, including difficulties with multi-scalar, multi-sited fieldwork and the ethical concerns that may emerge from doing fieldwork in the manner it was carried out. Section 4 presents a more thorough discussion of the history of the regions I chose to study and the themes that connect them all, which, given the limitations of an article-based thesis, could not be covered in sufficient depth in the articles. In this section, I supplement my article-based results by adding a “thick” description (Geertz 1973) of my observations of these regions currently. In Section 5, I tie the thesis together by expanding on the three main contributions to knowledge mentioned above. Finally, in Section 6, I summarize the thesis, key findings, and the original contributions to knowledge.

## 1.2 Project Aims and Research Questions

As outlined above, the aim of this project was to archaeologically understand (sub-)Arctic regions transformed by twentieth-century northern industrial colonisation but whose transformations were inevitably truncated and imperfectly carried out becoming an example of what Anna Tsing, Andrew Mathews, and Nils Bubandt (2019) referred to as the patchy Anthropocene (see Section 2.3.3). In addressing this broad general aim, my work sought to answer the following questions:

- Q1: To what extent did material legacies emerging from a period of significant government interest and investment in the regions survive into the present and how do they continue to persist in a time where investment into social services has declined and industrial labour has become more flexible?
- Q2: What tensions arise when things from this prosperous past find new purposes in the present or remain recalcitrantly redundant?
- Q3: What does the urge to give things from the past “usefulness” tell us about the temporal and geographical boundaries of the resource extraction industry in the (sub-)Arctic?

While working through these questions and my research, a fourth, broader, question emerged (Q4) – how does one do an archaeology of non-abandoned sites?

The reasons for the three case studies are various. The Kola Peninsula case was included as it was one of the focal points for the “Unruly Heritage: An Archaeology of the Anthropocene” research project, of which I was a member (Olsen and Pétursdóttir 2016, 41-42; Olsen and Vinogradova 2019; Olsen 2022). I chose Labrador and Newfoundland due to my familiarity with the region, as I lived and worked for several years before starting my PhD research (Whitridge and Venovcevs 2016;

Venovcevs 2017, 2018; Rankin et al. in press). Sør-Varanger emerged as an alternative case during the COVID-19 pandemic when I needed to find a similar but accessible alternative to the Kola Peninsula due to the travel restrictions. Entering the study, I was struck by how these three different political and economic systems of the former Soviet Union, Canada, and Norway managed to produce similar forms of heritage – (sub-)Arctic frontier regions defined by twentieth-century industrial and military developments. This preoccupation with similarity rather than difference is a point of weakness that I see in my articles and something that I try to rectify later in this text (see Section 4). While the means of creating good modern(ist) industrial communities were different – for example, single-family homes in Canada vs. apartment blocks in Russia – the general ingredients – schools, hospitals, city services, and role of centralized planning – were the same. Equally similar were the logics of establishing these northern communities around a single industrial enterprise, or a constellation of related ones, to create a colonised northern frontier in regions that were perceived as underdeveloped by government officials (Piper 2009; Keeling 2010; Josephson 2014; Kalemeneva 2019). Thus, the differences between the Kola Peninsula, western Labrador, and Sør-Varanger come in form, scope, and means, but not necessarily in kind. The industrial heritage in these places was often similar – uniform buildings, aging schools, vacated hospitals, overgrown quarries, forgotten mine survey camps, flexible labour arrangements, and vast semi-disused infrastructural networks of highways, railroads, and runways. Altogether, this created more than enough material for my fieldwork.

While my project plan originally called for frequent, multi-seasonal site visits and interviews with community members to address my research questions, these plans were circumscribed by the COVID-19 pandemic (elaborated on in Section 3.1). Select interviews with former miners, planners, politicians, and residents were carried out, but were consciously constrained given the situation. Instead, my methods shifted to more traditional archaeological approaches that focused on fieldwalking (Sections 3.2.2 and 3.2.3), photographic documentation, and notetaking (Section 3.2.4), supplemented by archival work within local museums and libraries. Since my aims were regional, I employed a multi-sited archaeological framework (Section 3.2.1) to investigate the multiple components of these regions including towns, quarries, infrastructure networks, wastes, mothballed industrial facilities, and recreational areas.

Fieldwalking, notetaking, and photography – tried and tested low-cost archaeological tools for experiencing and understanding sites (Tilley 2008) – allowed me to document how regions are in the present, thereby addressing the contemporary aspect of my first two research questions. Meanwhile, the historical depth gleaned from archival work and select interviews allowed me to understand how things were in the past. Both the multi-sited and multi-temporal scale of my fieldwork allowed me to address the third research question – showing the temporal and geographical profusion of resource extraction in the (sub-)Arctic. Ultimately, documenting non-abandoned things led me to consider and address my final, emergent question on how to do an archaeology of non-abandonment.

## 1.3 Results

The regional scope on three contemporary resource extractive industries created a major challenge for my study – namely, the proliferation of too much stuff, which is a common experience encountered by contemporary archaeologists (Pétursdóttir 2012, 582-583; González-Ruibal 2019, 165-169). It became clear early on that I could not possibly capture it all. To address this excess, I used a common archaeological practice of focusing on just one or a few objects of study at time and going deeper into those sub-topics to see how they address my overall research questions.

As such, the articles in my thesis can be considered both theoretical and methodological in nature doing a case-based analysis that sought to modify and refine existing theories (see Pétursdóttir and Olsen 2017; Lucas and Olsen 2022; Section 2.1). Brought together in this thesis, the articles address the overall project aim of expanding understandings of the bulky and unwieldy material from twentieth century industrial projects. They will hopefully invite further reflection from both archaeologists and other scholars. While my articles can be read as stand-alone, they are arranged here in chronological order as they were written which I think best reflects how my thoughts and ideas developed over the course of my PhD.

The articles are:

Article A: Venovcevs, Anatolijs. 2020. "Extracted Frontiers: A Call from the North." In *Deterritorializing the Future: Heritage in, of and after the Anthropocene*, edited by Rodney Harrison and Colin Sterling, 311-317. London: Open Humanities Press.

Article B: Venovcevs, Anatolijs. 2020. "Living with Socialism: Toward an Archaeology of a Post-Soviet Industrial Town." *The Extractive Industries and Society*. 8(4):1-9.

Article C: Venovcevs, Anatolijs. in press – 2023. "Industrial Vestiges: Legacies of Ancillary Impacts of Resource Development." *Historical Archaeology* 57(1).

Article D: Venovcevs, Anatolijs. 2022. "Ambiguous Matter: The Life of Mine Waste." *Journal of Contemporary Archaeology*. 9(1):39-63.

Article E: Venovcevs, Anatolijs. manuscript – 2024. "Between Use and Abandonment: An Archaeology of Mothballed Industries." For *Unruly Heritage: Archaeologies of the Anthropocene*, edited by Bjørnar Olsen, Stein Farstadvoll, and Geneviève Godin.

While these articles form the core of my thesis, it would be remiss not to mention other work, both refereed and public facing whose writing and production influenced my thought process, methodology, and which, on occasion, I have used to publish and communicate some of the data related to my thesis that were incredibly valuable for tuning my methodological and analytical approaches (Living Heritage Podcast 2021; Venovcevs 2020b, 2022; Venovcevs and Williamson 2022; Juhl et al. 2023; see also Magnani, Magnani, et al. 2021; Magnani, Venovcevs, et al. 2021).

It may also stand out to some readers that Article A is not an article per se but rather a slam poem published in a peer reviewed book<sup>7</sup>. The poem represents both my aspirations for using alternative means to communicate my research<sup>8</sup> as well as trends within academia that have increasingly employed photo essays (DeSilvey 2013; Olsen and Pétursdóttir 2014b; Orange 2017; Breithoff 2021), autoethnographic/autoarchaeological accounts (Bjerck 2014, 2022), musical

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<sup>7</sup> I would like to thank Esther Breithoff for appreciating my slam poem and forwarding it on to Rodney Harrison and Colin Sterling, who also liked it enough to graciously publish it in their book (Harrison and Sterling 2020).

<sup>8</sup> For examples see <https://youtu.be/Fa2vPuGrw04>, <https://tv.nrk.no/se?v=KOID75005320&t=2040s>, Living Heritage Podcast (2021), and Venovcevs and Williamson (2021a). As well as a timelapse of the drive from Happy Valley-Goose Bay to Fermont that I used to capture the distance within Labrador <https://youtu.be/scVlxdH2guA>

performances (Associated Press 2017), and Indigenous storytelling (Kimmerer 2013, 2021) to move away from traditional academic text and towards more evocative and imaginative ways of producing and communicating knowledge. The slam poem builds on these traditions by widening the field of possibility for what research communication can be. I wrote it in the first year of my PhD, having recently moved to Tromsø from Happy Valley-Goose Bay, Labrador. Responding to ideas about human technological ascendancy in an increasingly unequal world, ideas that have only magnified in scope over the last few years, I wanted to draw on my nascent research and my personal experiences that contrasted the material wealth of many parts of Europe and southern Canada with the resource peripheralization that (Section 4.1) I saw whilst living in Labrador.

The poem (Article A) as well as the other articles address the four major research questions as follows:

Question number:	Question text:	Addressed by:
Q1	To what extent did material legacies emerging from a period of significant government interest and investment in the regions survive into the present and how do they continue to persist in a time where investment into social services has declined and industrial labour has become more flexible?	Articles A, B, C, D, and E; Venovcevs 2022; Venovcevs and Williamson 2022
Q2	What tensions arise when things from this prosperous past find new purposes in the present or remain recalcitrantly redundant?	Articles B, C, D, and E; Venovcevs 2022
Q3	What does the urge to give things from the past “usefulness” tell us about the temporal and geographical boundaries of the resource extraction industry in the (sub-)Arctic?	Articles B, C, and E; Venovcevs 2022
Q4	How does one do an archaeology of non-abandoned sites?	Articles A, B, C, D, and E; Venovcevs 2022

The relationship between the aims, research questions, methods, objects of study, and the results are summarized in Figure 3.

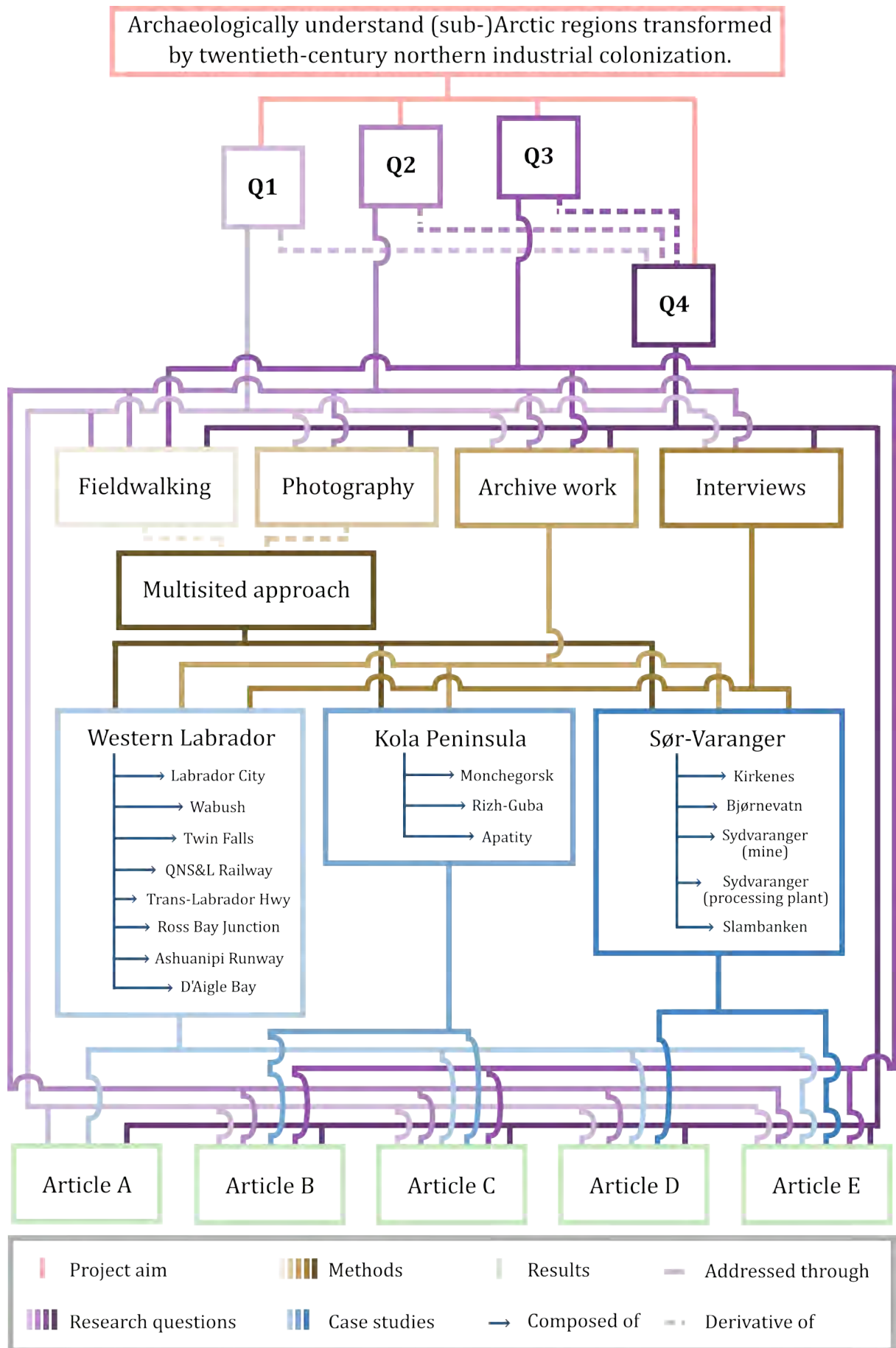


Figure 3: Relationship between project aims, research questions, methods, areas of study, and results.

## 2 Theoretical Groundwork

### 2.1 Theoretical Standpoint

The starting theoretical assumption of this thesis is that matter has vibrancy and things carry affects and effects on humans, non-humans, and other things around them (Bennett 2010; Olsen 2010, 2013b; Olsen et al. 2012; Olsen and Pétursdóttir 2014a; Olsen and Witmore 2021; Olsen et al. 2021b; Hodder 2011, 2014; Pétursdóttir 2013; Gordillo 2014; Dawdy 2016; LeCain 2017). These affects and effects can take a number of forms like invoking involuntary memories (Orange 2015b; Olsen and Vinogradova 2019), creating moods, sensations, and “hauntings” (Navaro-Yashin 2009; Herva 2014; Sørensen 2015), and forcing everyone to confront the material durability of objects (Pétursdóttir 2017; Farstadvoll 2019a; Figenschau 2022). Things can thus slow down and act upon history by remaining intransigent in the face of social, economic, and political change (Olsen 2013b). They also maintain the ability to do the reverse – to facilitate amnesia through fast degradation and decay (Magnani, Magnani, et al. 2021, 29). Since this project aimed to understand the persistent legacies of industrial colonisation of the (sub-)Arctic and their impacts, it was crucial to be present, sensing and documenting things as they were at the moment of encounter. The documentation happened through photography and notes, combined with newspaper accounts and select interviews. This acted as an appropriate operationalization of my thing-theoretical standpoint (something I return to in detail in Section 3 below).

However, beyond this initial assumption, I have not opted for any overarching theoretical positioning and instead found it more productive to let an “eclectic” theoretical approach assist my research. This eclectic approach stems from trends in archaeological theory that adopt “a *bricoleur* attitude, searching around for usable bits and pieces [from other theoretical positions] that may be reassembled with other appropriate spare parts” (Olsen 2010, 13). Such an approach tackles two issues. Firstly, it addresses the inherent difficulty of defining “things” (something I expand upon in the section below). Secondly, it allows for the desire to explore distinguishable archaeological theory and method that draws inspirations from, but does not directly reproduce, theories and ideas from other disciplines (Olsen 2010, 3).

As such, I rely on what Þóra Pétursdóttir and Bjørnar Olsen (2017) called a “weak theory” approach<sup>9</sup>. In opposition to “strong theory” (i.e., immutable, unchanging theory floating above the world and the data within it), “weak theory” is attuned and responsive to each unique object of study and has capacity to be modified, enriched, and complemented through its encounters with things (Pétursdóttir and Olsen 2017, 102-106). As beautifully pointed out in a recent chapter, archaeology is ill-suited to engage with philosophical meta-narratives that tend “to deal with absolute or ideal instances” (Olsen 2023b, 320). Rather than being a weakness, the strength of archaeological theorising comes specifically from the discipline’s engagement with the broken, the partial, the dirty, and the untimely, which allows us to engage with what is actually there. Therefore, theory should not come fully prepared and easily operationalized into one or another project as an out-of-the-box, ready-to-use toolkit (Olsen and Witmore 2021, 70-71). Rather, it should exist “*amongst things*” (Olsen 2023b, 321), as something situated and partial to be processed and developed through intellectual and physical

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<sup>9</sup> For this Pétursdóttir and Olsen take inspiration from Kathleen Stewart (2008) who, in turn, draws on Eve Sedgwick’s distinction between “reparative” (weak) and “paranoid” (strong) theory (Sedgwick 1997).

work both in the field and in the office. In this way, theory is fragile – it is open to be questioned, disproved, broken, and remade in the encounters with things and other ideas.

To frame it another way –

*It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.* (Haraway 2016, 12)

It is with this in mind that I, for example, hold some reservations about the efficacy of certain comparative approaches to cultural and natural heritage practices (Harrison et al. 2020). While no doubt such comparative work is useful, I hesitate to wonder what other conclusions could have been drawn if other case studies were chosen beyond the well-funded museums, laboratories, and elite nuclear waste repositories in economic, political, and social centres of power as opposed to many of the outlying regions I studied for this thesis? Heritage and waste could indeed be both understood as “superfluous objects which are no longer useful for the purpose for which they would originally produced” and therefore relegated to “a series of ‘other’ spaces” (Harrison 2021, 35). But what if those other spaces constantly leak and spill (Article D) both waste and heritage refusing to subscribe to management practices<sup>10</sup>?

Weak theorisation allows me to bring certain ideas together within my thesis to see how they play out and “work” when brought into dialogue with my case studies. An example of this would be Marc Augé’s conceptualisation of non-places (Augé 1992) with Edward Relph’s idea of placelessness (Relph 1976, 2016) and the intersection and interaction of those ideas within single industrial mining towns (see Sections 2.2, 2.3.2, and 4.6). Another example would be the interplay between various conceptualisations of the word “vestige” within archaeology and how they relate to literature from geography regarding ancillary impacts of resource extraction (Article C) in the context of quarries I surveyed as part of my fieldwork.

Therefore, I agree with the observation recently put forth by Gavin Lucas and Bjørnar Olsen whereby:

*The traditional version of the case study inevitably implies a hierarchy. The case study is consciously selected and carried out as a specific control or test case and is thus thought of as suitable or instructive for the inquiry scrutinized or the theory to be operationalized as “working.” This implied hierarchy is, of course, also an outcome*

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<sup>10</sup> Initially this reflection came to me, not from the mining wastes in western Labrador, Sør-Varanger, and the Kola Peninsula, as captured in Article D, but from work in my previous job where I mapped the proliferation of landfills in Happy Valley-Goose Bay, Labrador, Canada. Both current and past landfills in this community have been plagued with leaking, spilling, overflowing, and blowing their garbage over the surrounding countryside (Haire 2017; Hillier 2017; Keske, Mills, Godfrey, et al. 2018; Keske, Mills, Tanguay, et al. 2018). While many fine people within this small northern Canadian municipality are earnestly trying to follow the best waste management practices afforded to them, waste refuses to stay managed. Through this example and many others, I cannot see how theory can be disassociated with the objects it encounters, how it encounters them, and what past experiences a researcher brings to the sites of those encounters.



*of how theory is conceived of and the way it may or may not accommodate anomalies, disturbances, or alternatives.* (Lucas and Olsen 2022, 13)

Instead, Lucas and Olsen argue for a case study to be “a site of encounter” to modify, develop, and challenge existing theories in line with the weak theorisation outlined earlier (2022, 14). Echoing their call, my sites of encounter were the innumerable experiences with things within mining regions that affected me doing my research. They provided me opportunities to reflect, to examine, to develop, and to challenge the ideas coming from archaeology and elsewhere<sup>11</sup>. For example, my prolonged engagements with mothballed facilities at the Sydvaranger mine and the Twin Falls hydroelectric powerplant led me to engage with, and seriously reconsider, archaeological understandings of abandonment (Article E). It was not theoretical conceptualisations of abandonment that led me to test these ideas at Sydvaranger and Twin Falls but rather the encounters of mothballed places that led me to reconsider abandonment within the prolonged period of waiting.

As such, I tried to refrain from using solid concepts and closed-off theoretical positions to avoid polarizing conversations and false divisions that would preclude further discussions and theorisation. Therefore, when I offer my own ideas as “weak,” it is not to downgrade them but rather to invite others to come and work with the perspectives that I have offered in this thesis. What I fear the most, is to become stuck in a position that closes off further work or introduces polemics as the dominant exchange within the topics I have explored here. As a prelude for such deeper exploration, I take the time in the next section to ground my personal “*bricoleur* attitude” with a literature review specifically focusing on new materialist archaeology, agency, materiality, things, phenomenology, and the works of historians, geographers, and anthropologists whose previous research helped me frame, conceptualise, and address the aim of this project.

## 2.2 Literature Review

The position I have adopted on the ability of things to carry affects and effects can be placed into a broad category of new materialism. New materialism is a strand of thought that challenges archaeologists to not render things as secondary or epiphenomenal to some deeper social and symbolic reality but to take things at face value – as assemblages, as participants, and as things that have their own say in the world (Olsen 2010; Witmore 2014). For me, doing a new materialist-inspired archaeology means allowing the things to be themselves rather than imposing upon them “interpretative burdens they mostly are unfit to carry” (Olsen 2012, 22). As such, the centre of investigation lies in the challenging, vibrant, and often unruly materiality of things rather than any socio-ideological meanings that could be extrapolated from them.

Such theoretical perspectives appeared natural and relevant within my case studies, given the sheer volume, size, imposition, recalcitrance, and – at times – apparent uselessness of things produced by twentieth-century resource extraction industries. Geographers and historians have previously reflected upon the heavy, imposing legacies of defunct mines and mining landscapes – how they can

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<sup>11</sup> It would be unfair to limit the discussion of weak theorizing and the engagement with case studies as sites of encounter only to the work of Bjørnar Olsen, Þóra Pétursdóttir, and Gavin Lucas. Other examples of people who used weak theory and case studies as sites of encounter include Christopher Witmore (2011, 2015, 2018; 2021), Torgeir Rinke Bangstad (2019, 2021), Stein Farstadvoll (2019c, b), Tim Flohr Sørensen (2021), and Geneviève Godin (2022a, b) among others.

evoke associations of home and act as involuntary memorials for past generations (Goin and Raymond 2001), how they can catalyse political, social, and ecological identity and memory over time (Robertson 2006; LeCain 2014; Rhatigan 2020), how they can shift from being waste to potential products (Quivik 2013; Bleicher, David, and Rutjes 2019), and how they can demand perpetual – even eternal – responsiveness and care (Hudson-Edwards, Jamieson, and Lottermoser 2011; Ureta 2016a; Ureta and Flores 2018; Keeling and Sandlos 2017; Beckett and Keeling 2018). There has also been research on the histories of industrial resource colonisation of circumpolar regions – showing the underlying rationales and strategies used to settle these northern frontiers (Brown 2001, 2013; Josephson 2007, 2011, 2014; Josephson et al. 2013; Keeling 2010; Keeling and Sandlos 2015, 2017; Sandlos and Keeling 2012, 2016b; Bruno 2016, 2018). Meanwhile, other scholars have contributed by discussing the legacies of planned, modernist communities that came to dominate these distant, peripheral regions in the twentieth century (Dancke 1986; Cinis, Drémaité, and Kalm 2008; Farish and Lackenbauer 2009; Keeling 2010; Mellin 2011; Meuser and Zadorin 2015; Storm and Kasperski 2017; Kalemeneva 2019). As these communities have faded into aged utopias<sup>12</sup>, the landscapes around these planned communities have become transformed by what Paul Josephson called “brute force technology” (2014, 255) – mobilized armies of men and machines set to extract maximum amounts of wealth from the ground at minimum cost for either for capitalist or socialist purposes, and, at least originally, with few environmental considerations. Therefore, in mining country, the mines, the mine wastes, the towns, the regions around them, and the histories of all these combined have as much of a voice in the place and the placemaking<sup>13</sup> as the people that work and live there. Adopting a theoretical perspective that acknowledges the role material things play in society was thus crucial to advance the understanding of how single industrial communities in resource extractive regions continue to linger to this day, beyond their original economic and political underpinnings.

The new materialist archaeology I adopt here has at times been framed as a symmetrical archaeology – “founded on the premise that things... are beings in the world alongside other beings, such as humans, plants and animals” (Olsen 2003, 88; see also Shanks 2007; Witmore 2007; Olsen et al. 2012). The hardening of this definition – that things exist as things among other beings in the world – into a concept of symmetrical archaeology has had the unfortunate consequence of misrepresentation and attack by scholars who have questioned the existence of non-human agency (Lindstrøm 2015, 2017; Ribeiro 2016, 2021), the ethical implications of ascribing action to objects (Ribeiro 2018; Van Dyke 2021), and the post-humanist underpinnings of new materialist thought (McGuire 2021). My response to these criticisms has been to avoid engaging in these debates. This was in part because articulate responses to them already exist (Olsen and Witmore 2015, 2021; Sørensen 2016, 2018; see also Pétursdóttir and Sørensen 2023) and in part because I found the critiques rather unfair, especially on the topic of ethics that never claimed putting all entities on an equal ethical footing (Witmore 2014, 219). Instead, I chose to sidestep such discussions, especially those around agency. Rather, when using the word “agency,” I echo the long tradition of scholarship into resource extraction that has documented the numerous effects and affects that mines have in and on their respective regions (see the literature mentioned in the paragraph above). I accept that things play a crucial role in structuring the present and that this constitutes their agency. This understanding allows me to trace the proliferation of industrial and industrially-made things across resource extractive regions and beyond

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<sup>12</sup> Or “Lost Utopias” as framed by Anna Storm in her discussion on the Soviet nuclear power plant city of Ignalina, Lithuania (2014, 75-99).

<sup>13</sup> See Brode-Roger (2022).

the geographical and temporary boundaries of single industrial mining towns through their ancillary impacts of resource development (Article C). It also allowed me to document the recalcitrance of mine waste in response to management, heritagization, and economization initiatives (Article D).

This focus on things, however, begs the question of what, in fact, are *things*. As pointed out by Bruno Latour – “the straight lines of philosophy are of no use when it is the crooked labyrinth of machinery and machinations, of artifacts and daedalia, that we have to explore” (1999, 176). As such, research inspired by new materialism has tended to address certain things, in certain circumstances, in relation to certain theories (see the discussion on “weak theorisation” in the section above). Examples include drift (Pétursdóttir 2017, 2020), plastic road stakes (Farstadvoll 2019c), World War II detritus (Figenschau 2022; Farstadvoll et al. 2022), pandemic assemblages (Magnani, Magnani, et al. 2021), or industrial cattle farming (Witmore 2015, 2018). Things can thus be large or small, durable or ephemeral, modern or ancient. Things can be composed of other things<sup>14</sup>; though in so being things are irreducible – meaning that dividing a thing into its constituent things does not produce or explain the larger thing itself (Witmore 2014, 205; Harman 2016)<sup>15</sup>. Ultimately, it matters at which scales things interact with other things – an aspect I return to in Section 3.2.5 below.

As argued by Christopher Witmore (2020), the dominance and the outgrowth of things in the modern world implies that the present and foreseeable future human stories will be dominated by things and their often uncontrollable potentials and possibilities. As such, examinations of single industrial resource regions pose valuable questions as to when places and societies become post-industrial (see Section 2.4) and where the boundaries of industry end (see Article C). Therefore, this thesis addresses an important task in the development of archaeological knowledge. While much has been written on buried, ruined, and abandoned industrial spaces (Palmer and Neaverson 1998; Casella and Symonds 2005; Edensor 2005b; Andreassen, Bjerck, and Olsen 2010; Douet 2013; Pétursdóttir 2013; Storm 2014; Orange 2015b), there has been relatively little work on the heritage of ongoing, or indefinitely mothballed, industrial communities with tens of thousands of inhabitants and assemblages of factories, wastes, buildings, and infrastructures (though see Olsen and Vinogradova 2019).

In my work on tackling this task, I have been offered plenty of things to study. The types of things I explored included built architecture and monuments (Article B; Venovcevs 2022, 232-241), quarries and other ancillary impacts of resource development (Article C; Venovcevs 2022, 219-232), waste rock, tailings, and litter (Article D; Venovcevs 2022, 241-251), and mothballed industrial facilities (Article E; Venovcevs and Williamson 2022). These are all features that often bear witness to how objects may outlive and depart from their originally designed purpose. Things have the potential to withhold something of themselves in any given interaction and thus to release and reveal other aspects of themselves in future encounters with other things (Witmore 2020)<sup>16</sup>.

This ultimately poses questions on the materiality of things. Materiality, as summarized well by Tim Ingold, has a dizzying degree of definitions and applications (2012, 431-432). He subdivides them into “(a) the ‘brute materiality’ of the physical world; (b) the ways this world is appropriated in

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<sup>14</sup> Going to its etymological roots a *ping* is an assembly, a gathering, or a duration meaning that one thing can be comprised of and gather other things while it itself is part of an assembly or a gathering of one or many other different things (Olsen 2003, 98).

<sup>15</sup> This is what Graham Harman refers to as *undermining*, trying to explain things by the parts which they are made up. While this is most common in natural sciences, another “reductionism” is common in the social sciences: *overmining*. By this he means how things are explained as a result of larger structures or processes such as society, technology, or ideology (Harman 2016).

<sup>16</sup> Following Graham Harman and Object Oriented Ontology (Harman 2011, 2016).

human projects” (2012, 439). In going further, Ingold proposes the idea that what matters most in materiality is not the finished products which, as he contends, has been the focus of material culture studies and thing theorists, but rather the material flows and transformations where things are always moving from one state to the next (Ingold 2012, 435-438; see also Ingold 2011; 2013). This idea of flows, at times with inspiration from Gilles Deleuze, Felix Guattari, and parts of Martin Heidegger (Heidegger 1971, 167; Deleuze and Guattari 2004), has been taken up by scholars of archaeology and heritage that have focused on fluidity (Harris 2018), practices (Harrison et al. 2020), becomings (Harrison 2011; Bille and Sørensen 2016), and even threats of material change as an impetus for what gives heritage its heritage value (Holtorf 2014).

In my research, I took a different approach to materiality – specifically focusing on many of the “sticky” and durable aspects associated with material culture (Olsen 2013b, 185-186), in particular the built environment (Article B). This is not to say that things do not or cannot “flow” in my case studies as exemplified by the latent state of slow decay at the mothballed facilities of Twin Falls and Sydvaranger (Article E) or the literal flow (or rather spill) of mine waste through wind and water beyond their designated storage repositories (Article D). While “the brute materiality” was certainly changing from one form to the other, the latency and stubbornness of things’ responses to the social, economic, and political changes were nevertheless conspicuous features of their enduring materiality within the mining regions.

Part of this latency and stubbornness came from the things’ own marginality. Rather than being located in well-developed, affluent areas where concentrations of people, money, and resources stimulate rapid development and pose genuine concerns for preservation of valued and registered heritage sites (Holtorf 2014; DeSilvey 2017; DeSilvey and Harrison 2020), materiality on the margins is often left to its own fate. Resource peripheralized regions (see Section 4.1) often lack the economic, political, and social means both to preserve the valued heritage and to clear away the unsightly legacies of the past. The result is that they sit and slowly decay in the landscape (see also Andreassen, Bjerck, and Olsen 2010; Pétursdóttir and Olsen 2014a, c; Arboleda 2016; Olsen and Vinogradova 2019; Olsen 2022).

What, then, is the role of archaeology in these circumstances when it comes to advancing knowledge on historical-geographical change? As pointed out by several scholars in contemporary archaeology (De León 2012; DeSilvey 2013; González-Ruibal 2019; Magnani, Magnani, et al. 2021; Witmore and Francisco 2021), one of the most powerful tools at our disposal is bearing witness to, and documenting, change in the present<sup>17</sup>. Through witnessing, it is possible, for example, to document how a gradient exists between the ephemeral and the durable, the flowing and the stationary, within the materiality of the contemporary world. This is captured most succinctly in my contribution on the archaeology of non-abandonment (Section 5.3).

Bearing witness carries deep methodological implications. I discuss this at length in Section 3, especially regarding photographic documentation and surveys conducted through fieldwalking. However, the key theoretical-methodological element combining these approaches is the concept of phenomenology. Initially proposed by Edmund Husserl and developed further by philosophers like

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<sup>17</sup> In fact, things themselves can serve as a form of material witness – be they in the unwanted, unacknowledged heritage of recent conflict (Burstrom et al. 2009; González-Ruibal 2012; Figenschau 2019; Breithoff 2020) or the deliberately hidden or forgotten actions of the past (Zarankin and Funari 2008; Funari, Zarankin, and Salerno 2009; Zarankin and Niro 2009; Harrison and Schofield 2010, 143-145; Dirkmaat et al. 2012; Mäkinen, Maijanen, and Seitsonen 2022).

Martin Heidegger and Maurice Merleau-Ponty (Heidegger 1962, 1966, 1971, 1977; Merleau-Ponty 1962; Husserl 1970), phenomenology sought to explore how consciousness relates to objects in the real world. It is inevitably an embodied involvement predicated on our being as *being-in-the-world* (Heidegger 1962). In a recent chapter, Bjørnar Olsen (2023a) outlined how phenomenological thought entered archaeology in the 1990s and was especially taken up in British landscape archaeology. He argued that it eventually petered out due to its tendency to present landscapes as primarily social constructs and avoidance of serious engagement with things' materiality; in short, the being of things. According to Olsen, the main reason for the decline of phenomenology in British landscape archaeology was likely the idealist basis of dominant theoretical positions (i.e., post-processual archaeology), which made it difficult to fully take on the radical consequences of a philosophical project precisely challenging the modern idealist legacy. More recently, however, new materialist archaeological and heritage work have reawakened an interest in phenomenology by engaging specifically with the material properties and affordances of things (Olsen 2010; Olsen et al. 2012; Pétursdóttir 2012, 2014; Bangstad 2014; Sørensen 2015; Olsen et al. 2021b).

The phenomenological approaches within new materialist archaeology share a link to the application of phenomenology employed elsewhere, namely, concepts of place and placelessness developed by Edward Relph (1976) in his phenomenological geography. I take up Relph's concepts when addressing the planning and design of single industrial mining towns and juxtapose them with Marc Augé's (1992) concepts of non-places and supermodernity that have been popular in contemporary archaeology (Andreassen, Bjerck, and Olsen 2010; Harrison and Schofield 2010, 134-141; González-Ruibal 2008, 2019) (for that discussion see Sections 2.3.2 and 4.6). What I find compelling about Relph's work is his attempt to ground geography within phenomenology, specifically the phenomenology of Martin Heidegger (Relph 1976, 3-7). While later works on place and placelessness contain a less overt emphasis on Heideggerian phenomenology (Freestone and Liu 2016), the focus on *being-in-the-world* as a way to get at lived understandings of place (Relph 1976, 8) carries tantalizing implications for deepening understandings of the mass-produced industrial and residential spaces that feature prominently in this thesis.

As I discuss further in Section 3, phenomenological approaches, regardless of whether they are articulated by Relph's phenomenological geography or by new materialism, ultimately hinge upon the Heideggerian notion of *being there* to encounter things as they appear (Andreassen, Bjerck, and Olsen 2010, 23-24; Pétursdóttir and Olsen 2014a, 24-25; Olsen and Vinogradova 2019, 5; Farstadvoll 2019b, 31). Being is thus not separated from the world. However, as I discovered over the course of my fieldwork, being-in-the-world is not a simple or predetermined condition. Rather, it is a constant encounter with the often completely unexpected richness, diversity, and broad variety of things<sup>18</sup>, revealing things' capacity to surprise and perplex but also challenge and ultimately guide my research to certain conclusions in line with the weak theorising I described in the section above.

Now that I have outlined my theoretical and philosophical framework and defined the key concepts and terms that formed the basis of my research, I will go a step deeper and tackle the chronological considerations of the archaeology I was doing. Was this an archaeology of modernity,

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<sup>18</sup> I owe a great deal of gratitude to the sound artist Alexander Rishaug for introducing me to the idea of "the unexpected" in his archaeologically-tinted PhD project "Sound of time – Tuning into the Norwegian Landscape and the Post-Industrial Soundscape" (Rishaug 2021). See also <https://www.researchcatalogue.net/view/1328615/1328616/8>. It strikes me that archaeology, much like field recordings, is built upon unexpected and unplanned encounters that further enrich the discipline.

supermodernity, or postmodernity, as pondered by Rodney Harrison and John Schofield (Harrison and Schofield 2010, 141-142)? Was it an “Archaeology of the Anthropocene”, as stated in the title of the larger research project of which I was a part (Olsen and Pétursdóttir 2016)? Or are we still in the Iron Age? I address these key chronological concepts before moving on to the final section, where I will propose an archaeology of contemporary industry.

## 2.3 Chronological Concepts

### 2.3.1 Iron Age

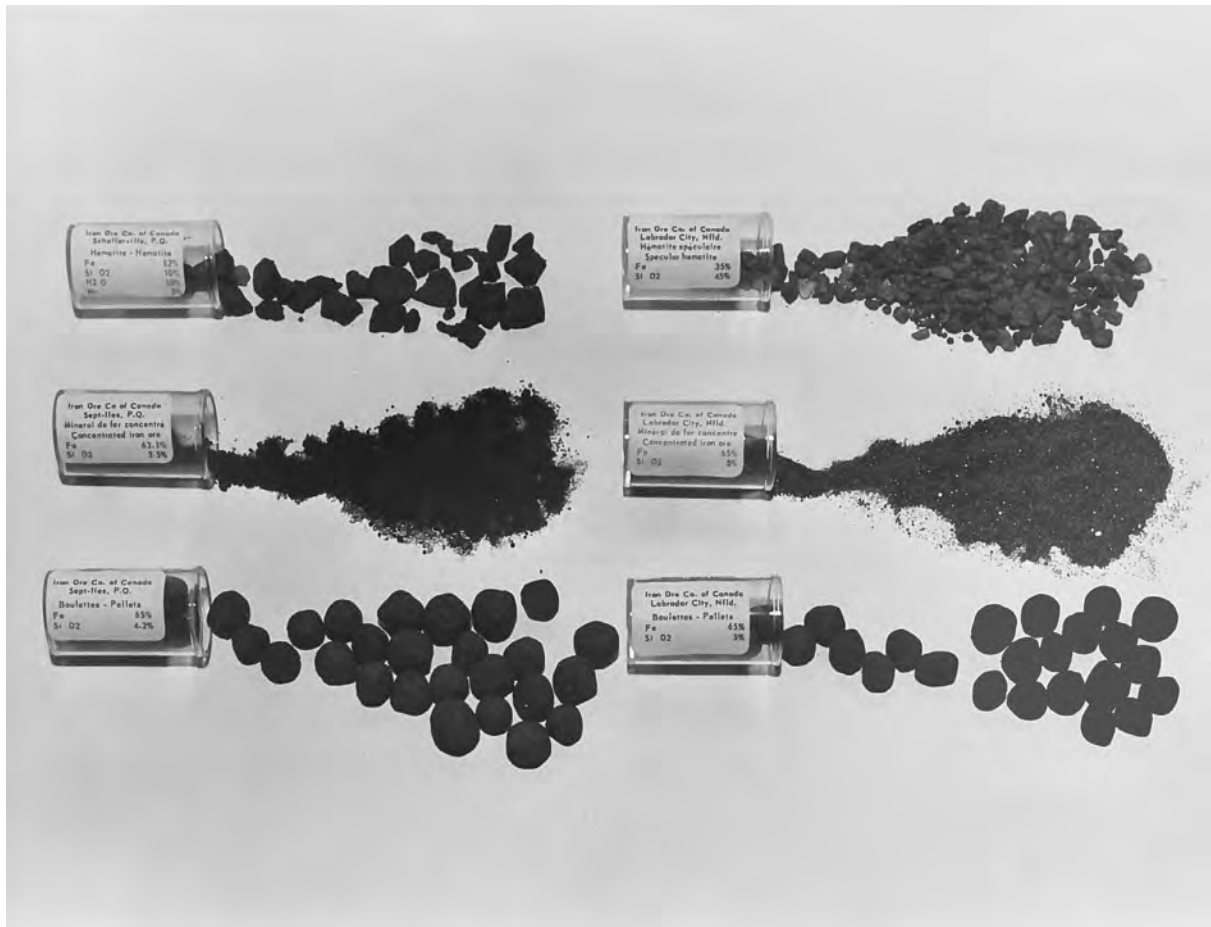


Figure 4: Products offered by the Iron Ore Company of Canada (Iron Ore Company of Canada, July 12, 1974, image F-416-1419).

Two out of three study areas in my case study are iron-producing regions<sup>19</sup> (Figure 4). Iron may not seem like the most relevant subject to explore in the Anthropocene (see Section 2.3.3). After all, iron

<sup>19</sup> The third – Monchegorsk – is a copper and nickel mining and processing area. Copper has an even longer legacy of human use than iron. Evidence of copper processing goes back as far as 7,000 years ago (Radivojević et al. 2010). Meanwhile, nickel is found in large quantities in meteoric iron and has been exploited widely since prehistory (Erb-Satullo 2019, 563-565). Mining and alloying with nickel did not start until 1848 in Norway (Berg et al. 2016, 315-316). The use of both of these minerals has expanded rapidly since then – especially in the most recent decades from their use in high tech electronics and batteries.

is mostly harmless – it does not carry the same world-shattering associations of oil, uranium, plastics, or even concrete (Bisht 2022). Moreover, iron usage is ancient – it first started to be smelted in large quantities by people in the Middle East around 3,000 years ago (Erb-Satullo 2019), with a possible independent invention in sub-Saharan Africa around 2,700 years ago (Holl 2009), before spreading to other parts of the world, including Scandinavia where it arrived at around 500 BCE. Meteoric iron has been used for even longer and has a much wider geographical scope. Among the Thule Inuit sites in Arctic Canada, for example, the proliferation of meteoric and smelted Norse iron is so common, especially in relation to the stone tools for the working of bone and other organic materials, that it led Robert McGhee to suggest that the Thule could be called “an ‘iron age’ culture” (1984, 15). While this assertion has been sufficiently critiqued (Colligan 2017), it can be seen that human entanglement with iron has both temporal and geographical depths that extend beyond modernity and the Anthropocene.

However, human reliance on iron has only gotten stronger since its widescale adaptation and, while it may be tenuous to call Thule Inuit as an “iron age” culture, the contemporary world has become more embedded in the Iron Age than ever before. If the Iron Age can be defined as the development, adaptation, and spread of iron-made things like weapons and tools – to the detriment of other materials (McGhee 1984, 15; Erb-Satullo 2019) – then it is clear that the Iron Age has not been superseded by any subsequent ages either in cultural (Viking, Medieval, Renaissance, etc.) or material (Oil Age, Plastic Age, Nuclear Age) terms. Iron objects have, in certain regards, receded from view, in part due to the proliferation of plastic alternatives and in part due to alloyed materials that make the world appear less iron-based and less rusty. Nevertheless, iron still fundamentally underlies every aspect of modern life like the “tanks, buildings, and cars” mentioned in Article A.

In the United States, iron was considered one of the “Resources for Freedom” in the 1952 Paley Commission Report to the US president (The President's Material Policy Commission 1952) and a perceived lack of it in 1945 was seen as a major strategic weakness that had to be rectified in part by the construction of the iron mines in Labrador (Article A; Thistle and Langston 2016). During the post-World War II reconstruction of Europe, European iron – like that from Sydvaranger, played a crucial role in creating the Europe that exists today. Even though iron no longer holds the lofty designation of a “freedom metal”, having been replaced by new so-called “critical minerals” including materials like lithium and titanium used in high-end electronics (European Commission 2020; Government of Canada 2021; Applegate 2022), global iron ore extraction has never been higher (Figure 5). We have never been more iron dependent than today.

Persistence and acceleration of the use of iron in things calls into question the efficacy of speaking in terms of a serialized Iron Age – while the Iron Age may have had a beginning, it does not seem to yet have an end. In fact, one can only start to talk about the end of the Neolithic as having taken place in the middle of the 20<sup>th</sup> century – if one defines the Neolithic as a form of life where most of the population derives its subsistence from agricultural practices unabridged by the introduction of “top-down societal organization or... technological novelties”<sup>20</sup> (Witmore 2018, 27).

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<sup>20</sup> However, if one defines the Neolithic, or rather the Stone Age, as a period where humans rely on quarried material to supplement their lives (as I do with iron extraction here), the Stone Age may also not have been superseded, given the reliance of stone, especially in the form of aggregates that has grown more exponentially than iron in the last 100 years (Bloodworth, Scott, and McEvoy 2009; Sandberg and Wallace 2013; Bisht 2022).

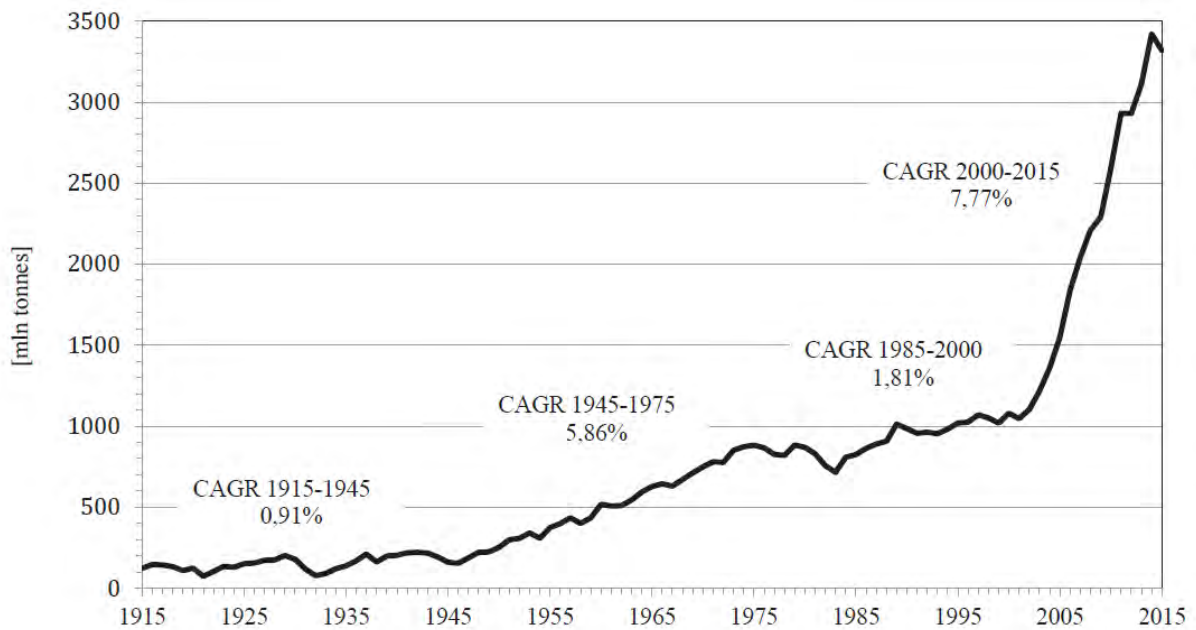


Figure 5: Global iron ore production from 1915-2015, CAGR stands for “cumulative annual growth rate” (Figure from Paulo and Krzak 2018, 17).

To think of iron as something that crosscuts historical seriation and accumulates with concurrent entanglements with stone, copper, nickel, plastic, oil, and etc. challenges traditional culture-historical periodization and exposes the growing entrapment between humans and the materials they extract (Hodder 2011, 2014). Our material dependencies have not disappeared but rather changed form and, if anything, multiplied in their intensity (for a similar argument regarding energy in literature studies see Shannon et al. 2011). Thinking of materials in this way also reveals both the asymmetry and the interdependence of resources and resource extraction. In everyday life, most people do not think about the materials that underpin their basic existence or form a picture of what a mine looks like. This stands in contrast to people in a place like Labrador West, who are as attuned to the value of iron as the people in Scandinavia during the Viking Age (though perhaps not to the technical knowledge of smelting it, since that is done elsewhere by different specialists).

To say that the Iron Age never ended is not to equivocate the scales and methods of resource extraction in the past to those of the present<sup>21</sup>. Instead of such equivocations that run the risk of naturalizing the destructive trends of capital, carbon, and plantation logics (see Section 2.3.3 below), there are quite significant differences between past and present forms of resource extraction and processing in terms of scale, speed, purpose, and distributions of benefits and harms (see LeCain 2009 for an excellent account that traces the technological transition between traditional and contemporary methods of resource extraction). Rather, the purpose of highlighting the ongoing relationship to iron and its accelerated extraction today is to draw attention to the accumulations of things, the demands of materials, and the shifting and prevailing entanglements with resource consumption that characterize the present we find ourselves in.

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<sup>21</sup> I see this being done by some scholars who try to push back the beginnings of the Anthropocene over several thousand years by fallaciously comparing human alteration of their environment in the ancient past to the cataclysmic global impacts happening since the 1950s (Doughty, Wolf, and Field 2010; Certini and Scalenghe 2011; Braje and Erlandson 2013; Erlandson 2013; Smith and Zeder 2013).



This serves to qualify the claim put forth by Marilyn Palmer and Hilary Orange that topics for future industrial archaeology would include aerospace, automotive, and telecommunications industries (2016, 85-86). Those topics are important and recent literature have taken up that call by showing the value of investigating topics such as power plants (Bjørsvik, Nynäs, and Faugli 2013; Brandt and Dame 2017; Venovcevs and Williamson 2022), street cars (Potemkina, Gryaznov, and Pashkovskaya 2020), aviation (Grove 2013; Deal, Daly, and Mathias 2015), space exploration (Gorman 2013, 2016), telecommunications (Liffen 2013; Linge et al. 2020), and automotive industries (Miller and Stitt 2021). However, my research highlights how traditional, even ancient, topics in archaeology, such as iron and copper, company towns, extractive technologies, and wastes, have not faded in importance but are in fact more prominent than ever (Article A). To echo the work of Mimi Sheller (2014), “light modernity” has an extremely heavy dark side.

### 2.3.2 Modernity

The concept of modernity and allusions to its various twentieth-century spinoffs, is referenced frequently in this thesis and is one of the most fundamental frameworks within which to understand the development of northern resource extractive regions. Unfortunately, the definition of modernity is notoriously hard to pin down. It has been used...

*as a stand-in for all or part of that inexorable cluster of capitalism, secularism, industrialization, colonialism, the onset of Atlantic slavery, individualism and the divided subject, technological involution, urbanization, global integration, science and rationality, mass literacy, aesthetic modernism, the nation-state, and so on.*  
(Dawdy 2010, 762)

Among these, there has been a rough consensus that modernity is an “ideology that valorises newness, rupture, and linear plot lines” (Dawdy 2010, 762). Emerging in Europe roughly around the fifteenth through the seventeenth centuries, modernity has emphasized a break with tradition, a rejection of the past, and a need to constantly reinvent itself – a task in which the nascent discipline of archaeology played a critical role by distancing the past and turning modernity into that which literally covers the ancient (Lucas 2004).

Yet, as modernity has turned away from the past, it has also been constantly brought back into contact with it. The first point of interaction is through commodification, turning the past into a sort of spectacle pushed to the background as part of “places of memory” and a heritage industry that can provide a clean, ritualized past (Augé 1992, 61-63; Harrison and Schofield 2010, 131-135). Augé, citing Jean Starobinski, asserted that “the presence of the past in a present that supersedes it but still lays claim to it” is “the essence of modernity” (1992, 61). The second is through the creative destruction of the past – treating the world as a *tabula rasa* to clear it and keep rebuilding the world anew, however imperfect and impossible that actually is (Relph 1976; Harvey 2003, 1). The drive for newness, and the difficulties of actually achieving that, is what creates piles of modern ruins, archaeological sites, and miscellaneous detritus that deeply challenge the idea that the past is gone and highlight the duration and slow pace of the things we encounter (Olsen 2013a). The construction of single industrial towns in the (sub-)Arctic, treating the north as a fertile ground for newly developed planning ideals (Dancke 1986; Farish and Lackenbauer 2009; Keeling 2010; Kalemeneva 2019), and minimizing the wishes and the presences of the peoples who already existed there – bares the heavy-handedness of modernity (Figure 6).



Figure 6: Tabula rasa in western Labrador – an Indigenous Innu site destroyed by the railway and a cabin near the Ashuanipi River, July 2006 (photo by Scott Neilsen).

At the same time, it should not be overlooked that those technologies that grew in association with modernity generated an immense amount of welfare, economic growth, and feelings of belonging by people swept up in these systems (Birkeland 2008, 287). Parts of modernity are widely celebrated, from the mass industrial housing provided in the Soviet Union (Reid 2009; Meuser and Zadorin 2015) to the development of working class movements and the social welfare state in Norway (Wikan 2006; Ågotnes 2007). For people enmeshed in the industrial adventures of single industrial towns, the smokestacks, mine pits, and environmental ruins are also *homes* along with the conflict and contradictory feelings those realities bring (Cater and Keeling 2013; Hynes 2021).

Meanwhile, modernity's wishes for clean breaks, newness, and radical transitions have not been totalizing, as seen from both the global south (González-Ruibal 2005, 2006, 2017) and the high north (Farish and Lackenbauer 2009). Taking inspiration from Tsing, Mathews, and Bubandt (2019), in the section below, I discuss how modernity is patchy or, alternatively, "partial, fragile, and unfinished" (Harrison 2011, 152) and "incomplete" (Dawdy 2010, 762). This is also revealed with my confrontations with long distances and vast physical spaces punctuated by sparse settlements, electrical lines, an occasional telecommunications tower, and concentrations of things<sup>22</sup>.

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<sup>22</sup> How to record these patches has been challenging. One method I could think of was with a GoPro and one very long lonely drive between Happy Valley-Goose Bay, Labrador and Fermont, Québec – <https://youtu.be/scVlxdH2guA>. See also Article C.

However, while modernity has been defined as a temporal ideology – it has also been declared to be aging, superseded, or grown exponential with a series of prefixes – late-, post-, or super-, respectively. For Rodney Harrison and John Schofield, who define these terms and explain how they relate to contemporary heritage (Harrison and Schofield 2010, 127-137), the departure from modernity into a subsequent, later phase is primarily a technological and institutional difference characterized by:

- *the growth of new communicative technologies and electronic media;*
  - *the globalization of technology, and its association with altered patterns of production and consumption;*
  - *the widespread experience of mass migration and the associated rise of transnationalism (in terms of capital, technology, labour, and corporations);*
  - *new modes of capitalism involving more flexible forms of capital accumulation and distribution; and*
  - *increased time available for leisure activities.*
- (Harrison and Schofield 2010, 128)

Drawing on the works on Jean-François Lyotard, Frederic Jameson, and David Harvey, Harrison and Schofield postulate that in the late- or post- modernity, the constant change of modernity has become status quo, leading to a “time-space compression”<sup>23</sup> visible in things like heritage experience initiatives (Harrison and Schofield 2010, 129-130). These compressions can also be seen in transportation infrastructures, like shifts from boat and paddle to rail and engine to highway and airplane, though these transitions are not unidirectional (Gordillo 2014, 131-181) and can be studied archaeologically in their functional and broken states.

Drawing from my case studies, I am not entirely convinced that modernity, much like the Iron Age, is past or overcome. Only by zooming out could it be claimed that certain elements of modernity have changed or been overcome – like with transnationalism, flexible global labour arrangements, smooth flows of capital, and new methods of communication – that, among other things, effected the mining regions I studied. However, on a more local level, for example that of the mining communities themselves, technologies, buildings, municipal plans, and the extracted materials are still very modernist (if not pre-modernist) in nature. If modernity can be described as patchy, what came after can be as well.

In these regards, I share Alfredo González-Ruibal’s scepticism on whether modernity is surpassed or at a late stage (González-Ruibal 2008, 262; 2019, 12-13). Rather, drawing on Marc Augé, González-Ruibal argues that modernity has grown excessive in time, space, subjectivity, and materiality, and became a “supermodernity” (Augé 1992; González-Ruibal 2008, 2019; see also Harrison and Schofield 2010, 134-141). Within supermodernity, the past has become so abundant in the present as to overwhelm (see also Olsen 2013a). This accumulation without destruction or rather, in my case studies, the initial destruction by modernity of earlier, mostly Indigenous landscapes, comes across strongly in those industrial towns that live in the shadow of mining wastes that literally pile up, cluttering the landscapes that came before them (Article D).

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<sup>23</sup> Though perhaps in archaeology it could be said that time and space have always been compressed with accumulating layers of the past that are still materially present (González-Ruibal 2008, 262; Olsen et al. 2012, 136-156; Farstadvoll et al. 2022).

At the same time, according to Augé, supermodernity both erases and reinforces frontiers, thereby nuancing the emancipatory subjectivities presupposed by postmodernity. On one hand, technology has produced spaces of consumption and information exchange (Augé 1992, xi; see also Relph 1976, 90-92), as visible in the levels of communication and transportation infrastructure in (sub-)Arctic areas (Figure 7). On the other, a closer look at the physical materiality of modern spaces – something that archaeology is uniquely positioned to observe – reveals borders, fences, boundaries, and the heavy corporeality of contemporary urban centres that challenge notions of a supposedly deterritorialized world and a “new nomadic” age (Augé 1992, xiii; Olsen 2013b; Hamilakis 2018; Article B; Article E; cf. Relph 2016, 27; Marquardt 2021).



*Figure 7: Successions of infrastructure in Labrador – a defunct railway crossing in the town of Wabush, May 24, 2019. This section of the railway shut down in favour of vehicle transport when the town became connected to the highway.*

One poignant example of both the dissolution and the reimposition of space through transportation infrastructure, is in the Soviet Union and what came after. The socialist conquest of space through road, railroad, and canal construction was a central pinnacle through which the vast regions of the Soviet north were brought into subjugation. With mechanized transport distance evaporated. However, distance has reasserted itself in the post-Soviet period through the slow ruination of some outlying areas and their associated infrastructures (Argounova-Low and Prisyazhnyi 2016; Bennett 2020; Билейкис and Самохвалова 2020).

Parallels can be drawn between the post-Soviet Russian north and Norway where, starting in the 1860s, a campaign of road construction began in Sør-Varanger to encourage Norwegian settlement (Grenselandsmuseet n.d.). Another parallel can be seen with Canada where long discussions were had regarding highway construction and paving through Labrador to connect the mining towns of Labrador City and Wabush with the other regional population centre, Happy Valley-Goose Bay (Royal Commission on Labrador 1974b, 873-886; Genge and Genge 2005; Genge 2008b).

In terms of the latter, I can give a personal example of how ruination of infrastructure reasserts distances that usually fade into the background. In May 2019, as I was planning my first fieldwork trip to Labrador West, the Trans-Labrador Highway washed away. The culprit – a beaver whose dam flooded a creek which swept away the only road connecting central Labrador to the rest of Canada. As this was the main route for goods and produce for over 10,000 people, overnight the Trans-Labrador Highway went from “a matter of fact” to “a matter of concern” (Latour 2004). I too was deeply worried, egoistically for the sake of my fieldwork as I was staying in Happy Valley-Goose Bay at the time. Luckily for everybody, the road was quickly repaired. However, driving the highway a week later, the damaged spot was clearly demarcated by a speed reduction, construction signs, traffic cones, and packed dirt over what had formally been a smoothly-paved section of highway. Through ruination, distance was reasserted and a place made, this time by a beaver<sup>24</sup> (for placemaking see Liu 2016; Soto 2016).

Central to Augé’s ideas, and to how other archaeologists have applied them, is the concept of non-places<sup>25</sup> – places without cultural relationality or historical (and temporal) identity (Augé 1992; Harrison and Schofield 2010, 137-141; González-Ruibal 2019, 138-139). It has been postulated that a mining town, specifically a Soviet one, can be a sort of a non-place with its rigid reproduction of common forms, names, and human control; only through its ruination can the place somehow reassert itself (Andreassen, Bjerck, and Olsen 2010). I explore this in detail in Section 4.6 below. Here, it is sufficient to say that the non-localized culture of the world or, at least, a country, came up repeatedly during my research (Augé 1992, 28), especially when dealing with the small material things left behind by contemporary residents of single industry towns (Venovcevs 2022, 241-250). At the same time, disruptions in the form of local material specificities, such as iron pellets, mine wastes, processing plants, and uniform architectures, constantly reasserted themselves to remind me that I was, in fact, in mining country.

Is this thesis an archaeology of modernity or supermodernity then? It is neither and both. As I discussed in the previous section, the minerals in this thesis date back thousands of years while the

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<sup>24</sup> Unfortunately, the incident has faded from internet news archives, while another washout a month later, this time more dramatic, on the southern section of the Trans-Labrador Highway has remained on the internet – <https://www.cbc.ca/news/canada/newfoundland-labrador/labrador-washout-1.5187265> and also demonstrates my point (but sadly without beavers). Luckily, my GoPro survey of the Trans-Labrador Highway managed to capture the repair work in the aftermath of the incident described and can be seen between 17:00 and 17:05 here – <https://youtu.be/scVlxdH2guA?t=1020> – showing once again the utility of archaeological approaches to bear witness and record the small, the ephemeral, and the happenstantial within the contemporary world.

<sup>25</sup> Contrast this with Edward Relph’s notion of “placelessness” that predates Augé by almost two decades (Relph 1976). According to Relph, placelessness stems from an “inauthenticity” of places that lack a sense of situated space as experienced phenomenologically by individuals. This differs from Marc Augé’s non-places, which focused on the lack of social relations found in non-places (Liu and Freestone 2016). As reflected by Relph himself, there is more hybridity now between places and placelessness than when his original 1976 work was published – a hybridity reflected in Augé’s non-places, which facilitate experiences but not social interactions (Relph 2016). As such, the concept of placelessness may resonate with the original founding of the single industrial communities that I study here – since that concept was directly responding to the high-handed modernism of the mid-twentieth century. But now is a time of hybrids, reassertions of place through ruination, global connections, and localized placemaking within the built physical environments of mid-twentieth century modernity. I explore this idea more in Section 4.6 and build on it throughout my thesis.

methods for their extraction are about a century old. The towns themselves were established from 1906 (Kirkenes and Bjørnevatn) to 1964 (Wabush) following ideas of progress, newness, and the economization of nature for human benefit. All these places are still ongoing and non-abandoned. The development of the northern and outlying regions of Russia, Canada, and Norway were tied to an industrial modernity that sought to enrich its owners and bring prosperity to historically poor regions through the most contemporary planning ideals (Bøe 1986a; Bruno 2010; Keeling 2010). However, circumstances have changed since these initial developments. Characterized by political, organizational, and economic shifts as a result of technological innovation and extractive acceleration, these circumstances coincide with a modernity that may be claimed to have taken on “supermodern” proportions. At the same time, and to which I return continually, these developments have been uneven – leaving behind patches and vestiges (Article C) of what came before and ultimately challenging ideas of a single, uniform (super)modernity and allowing for alternative ways of living and being with this “unruly heritage” (Olsen and Pétursdóttir 2016).

### 2.3.3 Anthropocene

The final chronological concept that runs through my work is the idea of the Anthropocene, famously coined by Paul Crutzen and Eugene Stoermer to draw attention to the increasingly oversized impacts humans are having on the planet – including greenhouse gas emissions, ocean acidification, species extinction, and mass sediment transfer (Crutzen and Stoermer 2000). In May 2019, the Anthropocene Working Group of the Subcommission on Quaternary Stratigraphy accepted the proposal to treat the Anthropocene as a formal chrono-stratigraphic unit and that the proposed beginning of the Anthropocene was one of the stratigraphic signals from the mid-twentieth century (Anthropocene Working Group 2019). However, to be defined as a formal geological unit, a Global boundary Stratotype Section and Point (GSSP or “the golden spike”) would need to be established, then it and the proposal would need to be accepted by the Subcommission on Quaternary Stratigraphy and the International Commission on Stratigraphy (Anthropocene Working Group 2019). This has not happened and thus the Anthropocene is still not a formal geological unit of time as of this writing.

Regardless of its acceptance within geology, the Anthropocene and its associated “-cene” spinoffs has enjoyed great popularity and debate within the humanities and social sciences (Hoskins and Whitehead 2013; Yusoff 2013, 2018; Davis and Turpin 2015; Edgeworth et al. 2015; Haraway 2015, 2016; Harrison 2015, 2021; LeCain 2015; Moore 2016; Birkeland 2017; Pétursdóttir 2017; Tsing, Bubandt, et al. 2017; Howe and Pandian 2020; Antonacci 2021; see also González-Ruibal 2019, 13-14 for criticism of using such terms). This includes the larger project of which this thesis was a part, “Unruly Heritage: An Archaeology of the Anthropocene”, which that sought to reframe ideas on heritage, memory, ethics, and care in the face of accumulations of unwanted things from the recent past (Olsen and Pétursdóttir 2016).

Despite such prominence, the word “Anthropocene” is noticeably absent from my articles. The only exception is page 4 in Article C where a reference was added at the request of a reviewer who noted the absence of the term or any of the other “-cenes”, thereby prompting me to insert a quick reference and, subsequently, develop this section as a response. One reason for the term’s absence is that, with all the uses and permeations, “the Anthropocene”, has grown to mean everything and nothing at the same time. While the geological basis for the Anthropocene has yet to be established, there has been a flurry of activity to discuss when it began (1950s, 1786, or thousands of years ago) and what is the cause (capitalism, plantations, globalism, perpetual war economy, cheap carbon energy, or all of the above). While these discussions are potentially fruitful, invoking the term without

trying to expound on it (as, for example, done brilliantly in Pétursdóttir 2017) offers little beyond showing the reader that I have done some homework. The purpose of my thesis has not been to offer further reflections on what an “Archaeology of the Anthropocene” can look like but rather to work within the Anthropocene, taking it as a given in much the same way as prehistoric and historic archaeology does not usually refer to itself as an “Archaeology of the Holocene”.

In my research, “the Anthropocene” is an inescapable embedded reality, being both the cause of and the reason for the term. As my case studies deal with contemporary mining and processing, they are what has made humans a geological force moving as much earth as all natural processes in the world combined (Figure 8). This research is an archaeology directly of the massive earth-moving transformations that have accelerated in the twentieth century as well as all the localized smaller operations that underlie it. However, and as documented in Section 4.3 (see also Venovcevs 2022, 227), it also bore witness to the access to cheap fossil fuel energy that made these resource projects possible in what Tim LeCain tried to reframe as the Carbocene (2015). Constant, tangible encounters with fuel drums, oil lubricants, railways, and airstrips are “material witnesses” (Figenschau 2019) to cheap energy that made the development of the (sub-)Arctic possible. Likewise, this research can also be rooted in the Capitalocene (Moore 2016) as it is the capitalist forces of accumulation and mass-consumption that developed many of the regions in my study, keep them going, and cause many of the inherent contradictions within them (explored most in Articles B and E).



Figure 8: Inside the Carol Mine, Labrador City, May 21, 2019. For scale, the CAT trucks near the middle of the picture are about 7.5 meters tall.

However, qualifiers should be added to all of these terms. For example, as pointed out by many scholars (Chakrabarty 2009; LeCain 2015; Moore 2016; Yusoff 2018), the *anthropos* in the Anthropocene is a falsely universalizing concept that obfuscates the fact that it is only certain humans who are to blame for the current predicament. The Sámi and the Innu, while present and active in mineral exploration and development (Лукичев 1993, 9; Позняков 1999, 10-11; Boutet 2012, 2013),

do not share in the responsibility for the vast environmental transformations brought on by industrial mining on their land, nor often are the thousands of workers who moved north for better salaries and living conditions (or were coerced to do so by the gulag system). Similarly, while carbon made mining developments in (sub-)Arctic environments possible, it could not have been done without the organizational knowledge to mobilize masses of men and machinery – seen most dramatically in the former Soviet Union where gulag labourers developed many of the industrial places on the Kola Peninsula with pickaxes and shovels, not excavators and dumptrucks (Josephson 2007, 2014; Bruno 2018). The communist and socialist economies of the Soviet Union and Norway also demonstrate that large scale ecological and economical transformations are not just limited to capitalism and that other (super)modernist systems were just as, if not more so, willing and capable of massive material and ecological transformations (Josephson 2007, 2014; Bruno 2016; González-Ruibal 2019, 14; Article B).

One “-cene” concept that may be most useful in this thesis is the Plantationocene (Haraway 2015; Tsing 2015; Haraway and Tsing 2019). While originally and still most commonly applied to monoculture plantations run by coerced and racialized labour (Coelho 2021), plantation logics also appear in open pit mining (LeCain 2009). Instead of simplifying plants and animals, open pit mines simplify geology through mass extraction, crushing, and processing. Like plantations, they often dispossess local populations and break their relationships to the land in order to bring people and things from other places, thereby reconstructing ecological, social, and material geographies in the name of profit and efficiency. This can be seen not just in the mines but also in the towns that were built adjacent and which also relied on a standardized plantation-like architecture.

Thus, while other “-cene” concepts may equally apply here, plantations are good to think with because they point out the uneven distribution of wealth, people, and ultimately things that spill out from the desire of simplified geographies (Haraway and Tsing 2019, 9). As pointed out by Anna Tsing, Andrew Mathews, and Nils Budandt (2019), plantation logics create feral proliferations that envisage a “patchy Anthropocene” that aligns well with a non-universal modernity I mentioned in the previous section. For Tsing et. al., a “patchy Anthropocene” is a conceptual tool for noticing “the uneven conditions of more-than-human livability in landscapes increasingly dominated by industrial forms” (2019, S186). This is done in order to draw focus on what they term as “modular simplifications” – industrial extraction sites, monocrop plantations, factory farms, etc. (see also Haraway 2015; Haraway and Tsing 2019) – and “feral proliferations” – virulent diseases, ruderal plants, and invasive species that thrive in simplified ecologies (Tsing, Mathews, and Bubandt 2019).

While the attention to patchiness has allowed Tsing and her colleagues to observe the “wild” ecological geographies that have emerged in the present (Tsing 2015, 2017; Tsing, Swanson, et al. 2017; Gan, Tsing, and Sullivan 2018), my engagement with resource extractive regions reveals that the Anthropocene itself is materially and chronologically patchy. Patches can be seen in the vestiges of those ancillary industrial operations discussed in Article C, where dispersed but bounded areas around Monchegorsk and Labrador West were mobilized to support the industrial communities and their associated industries (for a more detailed description of these in western Labrador see Venovcevs 2022, 220-232; Venovcevs and Williamson 2022). When disused, they continued to have a life of their own in accumulating alternative uses and engagements. Patches can also be seen in the vast networks of infrastructures that are experienced when getting to these places – long linear highways and railways punctuated by streams, trailers, cabins, gravel quarries, electrical lines, and periods of poor or



non-existent mobile connection<sup>26</sup>. Breaks and ruination can create their own additional patches and, since a patch is a constituent part of “landscape structure” (Tsing, Mathews, and Bubandt 2019, S187) that allows for associations to form, it in turn creates places.

The patchy materiality of the Anthropocene falls in line with what has been said previously about the nature of colonial power. Arn Keeling and John Sandlos, for example, have noted that capitalist production creates uneven geographical development (Keeling and Sandlos 2009, 123), while Shiri Pasternak demonstrated that the nature of colonial power and jurisdiction is equally irregular (Pasternak 2017). Much the same can be said about Soviet Russia and Norway, where the presence of the state is variably felt and seen. This unevenness can be observed archaeologically both in the material infrastructures as they still exist in operation and in former infrastructures and settlements whose material remnants continue to persist. The distribution of things in the present is innately heterogeneous (see also González-Ruibal 2019, 127-131).

It is at this level of patchwork that the Anthropocene becomes graspable, with the foreground and background coming once again into focus (cf. Morton 2013, 99-104). As articulated by Christopher Witmore (Witmore 2019; Witmore and Francisco 2021), an archaeological perspective grounds us back into the physical, material, here-and-now of individual articulations of the Anthropocene that can carry more weight than “hyperobjects” disarticulated from localized time and space (Morton 2013). Operating at the level of localized patches allows archaeology to grasp the material residues of (super)modernity, their distributions, and their afterlives, and, thus, to grasp something of the landscape structure that forms the present. Their uneven distribution is what allows for, for example, Soviet-era fishing villages to coexist temporarily with barely “sovietized” Indigenous communities in the same post-Soviet corner of Russia (Mankova 2017; Olsen and Vinogradova 2019). In the current case studies, it is the focus on patches that allows me to grasp waste rock, tailings fields, dust, iron pellets, new town planning, signs of militarization, railroads, highways, mothballed and active hydroelectric dams, monuments, quarries, cabin areas, and partially destroyed Indigenous sites as manifestations of the twentieth century resource peripheralization of western Labrador, Sør-Varanger, and the Kola Peninsula (on the issue of shifting scales see Sections 3.2.4 and 3.2.5). This same focus also offers hope for future possibilities and alternative stories based, in part, on archaeological approaches (something I return to at the end of Section 5.1).

## 2.4 Archaeology of Contemporary Industry

In their 2010 book, Rodney Harrison and John Schofield frame contemporary archaeology as the archaeology of “contemporary, late modern, post-industrial societies” (Harrison and Schofield 2010, 1). This is by far not the only definition of contemporary archaeology and discussions around its chronological and theoretical boundaries are diverse and intricate<sup>27</sup>, but to contextualize my

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<sup>26</sup> I tried to capture these distances and long, linear connections through a timelapse video of the drive from Happy Valley-Goose Bay to Labrador West – <https://youtu.be/scVlxdH2guA>

<sup>27</sup> Mats Burström in Sweden, for example, asserts that contemporary archaeology begins after 1850 (Burström 2007, 14). For less chronologically bounded definitions, Richard Gould and Michael Schiffer (Gould and Schiffer 1981), as well as William Rathje and Cullen Murphy (Rathje and Murphy 2001), focused on contemporary archaeology as “the archaeology of us” – inadvertently framing the “us” as being those living in Western countries. Meanwhile, Alfredo González-Ruibal defined contemporary

disciplinary position, it is useful to interrogate this claim of whether contemporary archaeology is just an archaeology of post-industrial societies or if it can be something else.

To start, and as I hinted at in the previous three sub-sections, serious qualifications can be made about how much our societies can be described as “post-” anything, let alone “post-industrial”. It is true that most people in England, Norway, Canada, and other so-called “developed” economies work primarily in service jobs, creating the impression that our societies have surpassed industry. For example, as of 2021, in Canada approximately 2,929,100 (or 18% of the working population) worked in “Goods producing industries” compared to 13,247,623 (or 82%) in “Service producing industries”<sup>28</sup>. However, zooming in to a regional or local level, this figure is unevenly distributed between different regions and towns. In some regions, including the ones I work in, industry plays a larger role in the local economy than the service sector leading to so-called “resource peripheries” discussed in detail in Section 4.1. At the same time, the things that surround us in so-called “post-industrial” societies have never been more industrial – produced almost always in factories with materials almost always originating in plantation-like extraction operations in countries with large numbers of industrial workers. The acceleration curve in iron demand (shown above in Figure 5) is just as true for all other metals, minerals, aggregates, energy products, processed foods, and mass-produced commodities in general.

As our lives become more defined by industrial-made products, our industry has increasingly moved to the peripheries of centres of political and economic power. A great deal of manufacturing now takes place in Asian countries<sup>29</sup> while, in Europe and North America, industrial jobs have been displaced to small villages, northern workcamps, rural agrobusinesses, outlying industrial zones, and offshore oil platforms. This creates the illusion of a post-industrial, post-material society when, in fact, the opposite is true (Article A). We have never been more industrialized.

In this context, contemporary archaeology and its allied disciplines, often relying on new materialist ideas, have been particularly adept at critiquing this illusion of post-materialism by tracking the wastes and the ruins that challenge notions of material-free progress and by showing that all the things we produce and consume have to go and come from somewhere (Edensor 2005a, b, c; Stoler 2008; González-Ruibal 2008, 2017, 2019; DeSilvey and Edensor 2012; Gordillo 2014; Olsen and Pétursdóttir 2014a; Pétursdóttir and Olsen 2014a, c; Tsing 2015). What is missing from these approaches is a critical discussion on places of production and the wastes that become generated before things reach us in their ready forms. As pointed out by Max Liboiron and Josh Lepawsky, 97% of all waste in the US is industrial. 3% is municipal (Figure 9) (Liboiron 2014; Liboiron and Lepawsky 2022, 9-14). Similar percentages can be assumed for other “post-industrial” nations. Thus, the overwhelming bulk of contemporary archaeological material is industrial in nature. This becomes

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archaeology as “an archaeology of the twenty-first [century] and all its pasts, mixed, and entangled” (González-Ruibal 2008, 262). However, at the same time, he asserted that the modern and the supermodern is somehow different from the past (González-Ruibal 2008, 2018, 2019). Without necessarily bracketing off the recent period from the past, I ultimately drawn upon González-Ruibal’s idea on the multitemporal entanglements of the pasts and the presents – along with ideas developed by Bjørnar Olsen, Þóra Pétursdóttir, and Laurent Olivier (Olivier 2001; Olsen and Pétursdóttir 2014a; Pétursdóttir 2018a, 2022) – as a suitable definition in order to approach the contemporary material in this research.

<sup>28</sup> Stats Canada – <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410020201>.

<sup>29</sup> Within the scope of this study, I would also include many regions of Russia that still have many industrial operations.

even more true in mining, which has been defined as a “waste management business” (Scoble, Klein, and Dunbar 2010) where between 50 to 99.9% of all processed material is waste in need of perpetual management and care (Lottermoser 2010; Hudson-Edwards, Jamieson, and Lottermoser 2011; Keeling 2012; Ureta 2016a; Beckett and Keeling 2018; Ureta and Flores 2018).

### Municipal vs. Industrial Solid Waste, USA

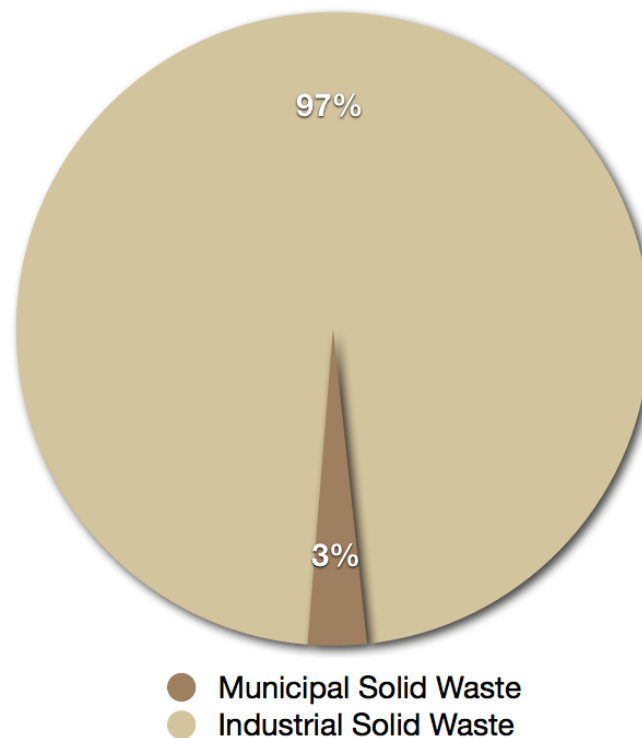


Figure 9: Dominance of industrial material, figure by Max Liboiron (<https://discardstudies.com/2014/05/07/why-discard-studies/>).

Therefore, more archaeology of contemporary industrial spaces, industrial wastes, and industrial processes is needed in order to better bracket the archaeology of the contemporary. By doing an archaeology of resource peripheralized regions (see Section 4.1), we get an understanding of not just what becomes of contemporary things when they have stopped being “things-for-us” (Introna 2009, 30-31; Pétursdóttir 2014, 339) but also where contemporary things come from before they reach us, what their production leaves behind, and what becomes of the contemporary things that produce contemporary things (Articles D and E).

In order to do this, I have drawn some inspiration from a subdiscipline of archaeology that specializes in understanding industrial processes – industrial archaeology (Palmer and Neaverson 1998; Casella and Symonds 2005; Douet 2013; Orange 2013, 2015b). Industrial archaeology can be divided roughly into two strands. The first has its roots among volunteers and amateur historians in the 1960s and 1970s in England who focused on the need to study, record, and preserve the perceived vanishing material remains from Britain’s industrial age (Palmer and Neaverson 1998, 1-3; Palmer and Orange 2016, 73). The second strand comes later with influence from American social archaeology and focuses on social experience of people living under industry (Casella and Symonds 2005; Orange 2013). In addition, more recently, there has been a movement toward a more inclusive concept of industrial heritage that offers more holistic approaches to both preservation and understanding of post-industrial material in general (DeSilvey 2010; Douet 2013; Storm 2014; Orange

2015b; Birkeland 2017; Bartolini and DeSilvey 2020), though one in which purely archaeological approaches like systematic survey, mapping, and excavation have arguably been devalued (Martin 2013).

At the same time, some industrial archaeology/heritage studies have tackled questions regarding ongoing industries and processes of industrial becoming (Hayman 1997; Malaws 1997; Storm and Olsson 2013; Orange 2017). However, much of industrial archaeology/heritage still only seems to be concentrated on abandoned industrial operations that, as Hilary Orange states, “lie on the cusp of history” somewhere between rejection and commemoration (2013, 83). This dearth overlooks the countless examples around the world where industrial heritage is an ongoing practice, i.e., an active cornerstone industry, and where landscapes were formed and continue to be formed as part of a living and embodied heritage (Living Heritage Podcast 2021). The backward-looking perspective to much of industrial heritage (and much of heritage in general) fails to consider the social, ecological, and material values that are intertwined with the continuity of industry as an ongoing “place narrative” (Birkeland 2017, 64-67) and the raptures that take place during industrial stoppage. Industrial archaeology/heritage studies often come too late to look for heritage “value” among the obsolete detritus within ongoing industrial operations<sup>30</sup>, creating chaotic palimpsests of ruined, protected, restored, mothballed, and potentially useful buildings. The latter can be best seen on the territory of the Sydvaranger mine, where industrial heritage and industrial activity have been framed to exist against each other (Arvola 2004; Valestrand 2014; Berg et al. 2016, 289-294; Articles D and E).

As such, while situated within contemporary archaeology, my research also draws inspiration from industrial archaeology and heritage to create the current research narrative. From industrial archaeology, I draw inspiration on site recording, process, and distributions of industries over broad regions that I often followed to small and seemingly unconnected places like quarries, cabin areas, and everyday litter (Venovcevs 2022; Articles C and D). In (sub-)Arctic regions transformed for the purposes of resource extraction, much of the material from the twentieth century inevitably falls within the auspices of industrial heritage – regardless of its recognition and protection status. At the same time, my research did not limit itself to abandoned places, struggling at times (see Section 5.3), but ultimately coming to an understanding that active and inactive industrial operations and their associated things all act to form unconstituted surface assemblages (Harrison 2011) that form the present in resource extractive regions.

Ultimately, the focus on ongoing industries in current industrial regions is what leads to a rejection of the assertion that we live and work in post-industrial societies and calls for an expanded scope for contemporary archaeology to follow the things back to the places where they were extracted and/or produced. This move shows that contemporary industry – much like modernity or the Anthropocene – is highly variable and unevenly distributed, affording some places to consider themselves “post-industrial” while ongoing industrial resource extraction reaches unprecedented proportions in the present. Situating archaeology in regions where industry is still dominant helps us to think of heritage of the Anthropocene differently. I, for example, showed this in Article D by demonstrating the absence of clear and unambiguous divisions between waste and heritage that can be comfortably relegated into a neat “series of ‘other’ spaces” (Harrison 2021, 35).

Thus, having outlined my theoretical groundwork, I continue to the next section where I show how I operationalized these theoretical concepts. To this end, I outline the methodological approaches

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<sup>30</sup> Or even the discontinued industrial operations that lie in expectation of restarting (Article E).

I took to archaeologically understand the three (sub-)Arctic regions that were transformed by twentieth-century northern industrial colonisation.



## 3 Methodology

### 3.1 COVID-19

Research, fieldwork, and writing for this PhD were undertaken from August 2018 and May 2023 and an honest accounting of the process cannot ignore the impact that the COVID-19 pandemic had on the project<sup>31</sup>. Most of the fieldwork for this PhD coincided with the worst years for regulations, lockdowns, and travel restrictions in 2020 and 2021.

For a project dependent upon the comparative analysis or rather “multi-sited archaeology” (see the next section) of (sub-)Arctic mining regions, the effects of COVID-19 have been considerable. For one, I had to significantly alter my PhD project by adding Sør-Varanger as a case study while minimizing the role of Russia. This is the reason why Articles B and C focus in large part on the Kola Peninsula and the town of Monchegorsk, whereas Articles D and E, which came later, focus on Sør-Varanger and the communities of Kirkenes and Bjørnevatn. This shift, while productive in helping develop my ideas in breadth and scope, required me to familiarize myself with a different region and to work in a different language. In the meantime, my engagement with the Kola Peninsula remained unfinished until this text, where I have tried to bring it back into dialogue with the other case studies that have remained more accessible over the last two and a half years.

In addition to impacting what I study, COVID-19 also influenced how I studied it. Interviews that were originally planned were minimized, partly because most local knowledge holders were older and therefore more vulnerable to COVID-19. This was made explicit in my 2021 field stay in western Labrador, where I partnered with the Labrador Institute of the Memorial University of Newfoundland and Labrador and thus followed their guidelines and approvals for fieldwork. While some interviews were conducted, the work focused more on photography, field survey, and archival work in the local libraries and museums, thus tuning my analysis to on the material and historical dimensions of the places I was studying. This still helped me to address the research questions I presented in Section 1.2, though the results could have been different if I had a broader access to people for interviews.

COVID-19 also affected what I was seeing. Masks were a semi-regular find in my study areas and, at times, acted as chronologically diagnostic artifacts (Figure 10). Likewise, in my work within the Sydvaranger mine, especially with mothballing for Article E, I observed a sort of “double mothballing”. While Sydvaranger waited to be reactivated, the realities of home office meant that it was even less occupied than usual with most of the remaining Sydvaranger employees working from

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<sup>31</sup> Another, later, impact on this project has been the Russian invasion of Ukraine. While it has not impacted my fieldwork as directly as COVID-19, it extended the border closures and physical separations that started because of it. Russia remained closed during the year that I hoped to revisit in preparation for writing this part of my thesis. The Russian invasion and the subsequent Western sanctions did, however, help my colleagues and me to think about how borders are materialized and rematerialized (Magnani et al. forthcoming) – some of those ideas have been featured in this work (specifically see Section 4.2). Throughout this writing, the invasion also affected me on a personal level, as a Latvian-born Russian with a Ukrainian-born grandmother and as somebody whose life is the heritage of the Soviet/Russian Empire. While I refrained from making any commentary on the war, as it does not relate to my thesis, I cannot disassociate my thoughts and emotions from the events happening in Ukraine. Writing this text took place simultaneously with the invasion of Ukraine. This reality furthers my argument as it relates to COVID-19 – that the research and the season, time, and period during which the research is carried out cannot be separated from one another.

home. In this way, Sydvaranger was doubly postponed – both in its expected return to industrial operations and in the expected return to normal waiting within mothballing (Article E). Therefore, my observations cannot be disassociated from the period in which I conducted my research – an aspect that is perhaps generally valid since all research inevitably is grounded in the realities of when and where that work was carried out, along with all the previous encounters that brought the researcher to that moment (Bjerck 2022, 193-194 makes a similar argument). Working on a PhD through the COVID-19 pandemic accentuated the immediacy of the research which may have otherwise been obscured.



*Figure 10: A single-use mask within the gated area of the mothballed Twin Falls hydroelectric dam indicates visitation of the area since the start of the COVID-19 pandemic, June 11, 2021.*

Finally, COVID-19 affected the temporality of the fieldwork. The original project aimed to find a balance between Russia and Canada whereby I would visit each area in various seasons and years. The realities of closed borders, quarantines, and expensive flight tickets circumscribed that possibility. Instead, I focused on frequent shorter visits to the Kola Peninsula and then Sør-Varanger given their relative proximity, while doing occasional longer visits to Canada, especially in 2021 where my fieldwork in western Labrador coincided with the research stay at the Memorial University of Newfoundland and Labrador. In total, I spent four weeks in Russia from March 2019 to February 2020, ten weeks in western Labrador from May 2019 to August 2021, and seven weeks in Sør-Varanger from August 2019 to February 2023.



As such, the COVID-19 pandemic has had a largely negative impact on the development and implementation of my original research plan<sup>32</sup>. However, within the scope of my research and academic learning, the COVID-19 pandemic offered one fortuitous benefit. The long periods of social distancing and the rapidly transforming material realities of the local environment gave me the opportunity to carry out a COVID-19 archaeology project in Tromsø, along with colleagues from UiT: The Arctic University of Norway (Magnani, Magnani, et al. 2021; Magnani, Venovcevs, et al. 2021). Paying attention to the changing materiality of everyday things and the surveys conducted in downtown Tromsø provided me with skill sets and methodologies that I was able to bring to my fieldwork in Sør-Varanger and western Labrador<sup>33</sup>.

Thus, doing a fieldwork-based PhD through the pandemic introduced significant challenges and changes into how I originally envisioned my project. It forced me to add a new case study, which proved productive, while further dividing my attention. It also invariably shaped how I structured my methods, both in which topics I chose to approach and how, as well as the length of time I had with each case study. As such, it introduced methodological patchiness and unevenness into subject matter that I already considered to be patchy and uneven. In this way, both my topics and my methods reinforced each other while being situated in a period of large-scale global disruption.

## 3.2 Multi-sited Archaeology

### 3.2.1 Multi-sited Archaeology Explained

Despite the challenges presented by the COVID-19 pandemic, I still managed to address my key research questions. These include the ongoing material legacies of industrial development in the northern regions, the tensions that arise from the past continuing in the present, the delineations of temporal and geographical boundaries of resource extraction industry in the (sub-)Arctic, and the broader themes of an archaeology of non-abandonment. Attention to things through the new materialist approaches (Section 2.2) was both a disciplinary move, speaking to a traditional strength of the archaeological discipline (Olsen 2010; Olsen et al. 2012), and an ethical one, given the social distancing requirements of the COVID-19 pandemic. As such, it was imperative to document things through the application of fieldwalking (Section 3.2.2) and photography (Section 3.2.4), two traditional archaeological survey approaches.

However, the task of understanding resource extraction regions from the ground up or, as Christopher Tilley put it, “from the ‘inside’” (2008, 271), was daunting given the size, scope, and diversity of sites within each of the regions I studied. As outlined in Section 2.3.3, working through my case studies, I adopted the view that the Anthropocene is materiality patchy in how it manifests itself across space and time. This was compounded by my own patchy engagement with my case studies, given the restrictions imposed by the COVID-19 pandemic. The uneven distribution of things

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<sup>32</sup> To say nothing about the sickness, suffering, and death of millions of people around the globe. This makes me humbly grateful for the tremendous amount of privilege I had in living through the first years of the pandemic in an affluent welfare state like Norway, with a robust public healthcare system and a job that could be easily moved to a home office.

<sup>33</sup> For example, see survey results in Magnani, Magnani et al. 2021 and Steps 2 and 4 in Magnani, Venovcevs et al. 2021. Compare them to Venovcevs 2022, 220-227; Venovcevs and Williamson 2022, 261-270; and Section 3.2.2 on fieldwalking.

across western Labrador, Sør-Varanger, and the Kola Peninsula, combined with my own uneven access to these regions and the desire to capture as much as possible of their size, scope, and diversity, led me to think through my case studies as a form of multi-site archaeology distributed across three different national regions all transformed through twentieth century industrial colonisation.

The concept of a multi-site archaeology has its roots within multi-site ethnography, a concept coined by George Marcus and developed over subsequent publications (Marcus 1995, 1998; Falzon 2009; Coleman and von Hellermann 2011). The term is used to address the increase of globalization that has challenged the traditional cultural or geographical rootedness of ethnography – an observation that is similarly echoed by Marc Augé in his discussion on the disintegration between “the near and the elsewhere” (Augé 1992, 7-33). As argued by Marcus the world has grown discontinuous in terms of cultural and material production. To address this, he suggests a multi-site ethnography that brings “these sites into the same frame of study and to posit their relationships on the basis of first-hand ethnographic research in both” (Marcus 1995, 100).

While multi-site ethnography is uneven, with less time spent at each site and thus producing knowledge of various intensities and qualities, it helps to see how global flows of people, resources, and developments – break apart traditional dualities or oppositions (Marcus 1995) like, for example, between east and west (Brown 2013) or between capitalist and non-capitalist labour (Tsing 2015). The work that arises out of a multi-site ethnography is ultimately comparative, but it is also fractured and discontinuous as the contours, sites, and relationships of the study subject are not known beforehand. Rather, they emerge from following the research topic through the research process (Marcus 1995, 102). This “following”, as outlined by Marcus, is a central concept to a multi-sited ethnography which, according to him, can involve seeing the connections between six different themes: “people”, “thing”, “metaphor”, “plot, story, or allegory”, “life or biography”, and “conflict” (Marcus 1995, 105-110; for critique and the issue of “unfollowing” see Van Duijn 2020). Ultimately, multi-site ethnography involves thick description to expose the depth and nuance of the subject that might not be seen originally (Geertz 1973; Ryzewski 2011, 245; also consider thick description as part of phenomenological practice, Tilley 2008, 271). This is something in which I also engaged in Articles B and C<sup>34</sup>.

Marcus’s concepts of multi-site ethnography and following align closely to how my own work was structured across borders and various patchy case-study regions. In this case, patches consisted of sites of extraction, residency, or interconnection that make up resource extractive regions. Likewise, the fieldwork was uneven and time was divided across regions which, in some ways, prevented me from going deeper into each location. Work was further fractured across towns, quarries, mine wastes, runways, survey camps, and hydroelectric dams that all acted as parts of one larger regional system for resource extraction (Articles C, D, and E). As a trade-off for these divisions and discontinuities, I attained broader geographical overviews both on local, regional, and global levels, which subsequently allowed me to think comparatively between spaces of resource extraction. Multi-sited thinking allowed me to draw these various experiences and encounters into the same frame of analysis in order to create dialogue with each other – seeing, for example, similarities between runways and quarries

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<sup>34</sup> Thick description is a familiar, but rarely acknowledged, archaeological act. This is particularly true in site reports, which describe the results in great detail, since the archaeologist cannot and should not predict what researchers would find useful in the future. See my reports on archaeology on western Labrador that often relied on thick descriptive accounts related to this thesis (Venovcevs 2022; Venovcevs and Williamson 2022; Juhl et al. 2023).

within a region (Article C; Venovcevs 2022, 220-232), or drawing parallels between a sand quarry in one region and a quartzite quarry in another (Article C).

However, as pointed out by Krysta Ryzewski (2011), George Marcus did not write with archaeology in mind and care must be taken when carrying a concept from one discipline into another. This is evident in Marcus's diffuse approach to geography of places or imaginaries, which does not map well with archaeology as it is often shaped by defined geographical boundaries (Marcus 1995, 83; Ryzewski 2011, 248). Resource extractive regions on the margins of nations are ultimately materialized through geographical distributions of things and how they relate to things in other regions. It is what Gavin Lucas highlighted in his perspective on the multi-sited approach by saying that the "relationship between sites is foreground and is as specific as the sites themselves" (2001, 144). Interactions between used and disused means of transport, communities, mines, quarries, etc. are fundamentally what create the landscapes of western Labrador, Sør-Varanger, and the Kola Peninsula encountered in my study. It is also what forms "the global" (Marcus 1995, 99), and the relations between the "peripheries" of resource extraction and the "cores" of processing and consumption (Section 4.1).

Working through a "multi-sited archaeology" allows for a geographical freedom of movement, tracing things in their various materialization across space thereby allowing for the unexpected, the unknown, and the undefined to emerge from the study matter. This stands in contrast to ethnography, which often has at least a broad overview of subjects and systems in mind at the start (Ryzewski 2011, 256). As an operationalisation of her discussion on a "multi-sited archaeology", Ryzewski applies this mode of thinking to small scale iron smelting and processing industry in (post-)colonial Rhode Island across three sites, showing how one family carried out successful iron processing practices (Ryzewski 2011).

As a point of criticism, Christopher Witmore rejects the concept of a "multi-sited archaeology" for its failure to "cover the quadruple folding of agencies, materials, times, and spaces" (2011, 233-234). He contends that the multi-site approach needs to account for temporal and scalar distributions, as opposed to just spatial ones. In response, I would postulate that it is not up to multi-sited archaeology to cover everything that archaeology is or can be. Temporal and scalar distributions can indeed offer alternative perspectives than just their geographical differences. However, a multi-sited archaeological approach is still useful precisely because it provides a method for noticing the distributions within patchy systems and incomplete archaeological assemblages that, by their very persistency, are made contemporary and thus part of ongoing present legacies. Whilst not ignoring their temporal and originating differences, this allows us to follow these legacies across space and eventually draw individual patches into analysis with each other. Multi-site archaeology then becomes a way of seeing network structures within an increasingly globalized and multitemporal world (Beaudry 2005, 308-309), filling in gaps in our understandings that would exist if we limit ourselves to a single site of analysis (for example see Ryzewski 2011, 253-261).

### **3.2.2 Fieldwalking**

In the summers during and after my Bachelor's degree in Ontario I worked as a field technician for a cultural heritage management company, Archaeological and Heritage Services Inc. Most of my time, my crew was focused on surveying properties prior to development. This involved digging small shovel pits in woodlots and parklands, as well as walking many kilometres a day over ploughed fields to locate objects from the human past. Some days we did not find anything. On some of our most

productive days, we came back with paper maps<sup>35</sup> full of pencil-drawn circles that tracked the distributions of pre-contact and Euro-Canadian sites. Thinking back, maybe this was one of the inspirations that started me to think about the Anthropocene in patches?

Based on my experience with North American cultural resource management, specifically with a survey crew, and encountering my massive, distributed, and massively distributed case studies – fieldwalking seemed like a reasonable approach to study the subject. As such, most of my time in the field was spent walking. There were also some moments spent driving – and then walking – and briefly, thanks to a kind and generous friend and boat operator in Labrador West, boating and then walking (Figure 11).



*Figure 11: The only photo of the author of this thesis – fresh off the boat and ready to walk into the remains of the mine survey camp at D’Aigle Bay, western Labrador, July 11, 2021. Note the tools of the survey – the GPS hanging off the right hip, a GoPro in the left hand, “Latvia” hat, a backpack with a camera, stadia rods, scales, bug spray, and lunch on the back. Also note the alders (Section 4.7.2) in the background. Photo by Gary O’Brien.*

Fieldwalking, of course, is not new to archaeology; it was developed and systematized as a method during the time of the “new archaeology”. My use of it has been inspired by a rich tradition within historical, landscape, and contemporary archaeology that emphasizes understanding sites with one’s feet and simple survey tools (Bonnichsen 1973; Foard 1978; Tilley 2008; Andreassen, Bjerck, and Olsen 2010; Harrison and Schofield 2010, 62-67; Farstadvoll 2019b, 31-37). It is an approach for archaeological attentiveness and methodological diligence – making sure that spaces and *things* encountered are adequately covered through our presence, our senses, and our ways of recording. Building upon these approaches, I adopted my own experiences within contract archaeology and methodological discussions within archaeological survey (Banning 2002) to systematize and track my

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<sup>35</sup> I am old enough to remember fieldwork without tablets and smartphones.

movements in order to maximize my exposure to the materiality of the regions I studied. I combined this with photography as a method of documenting places and things I encountered (see Section 3.2.4).

When I was out walking through my study areas, I always wore a GARMIN GPSmap 62sc on my belt, which is accurate within 4-5 meters. I used it to track and record my movements throughout the regions. This approach was inspired by the work of Julia Brenan and Scott Neilsen at Birch Island in Happy Valley-Goose Bay, Labrador, who used georeferenced and digitized historic maps to identify former houses in the resettled community. They then converted polygons of those former houses into GPS points and used them to revisit the location of each house by tracking their own movements across the island with a GPS receiver. The work allowed them to securely say that they revisited the former location of each house on the island while documenting their movement through very dense and difficult terrain (Neilsen and Brenan 2018; Brenan 2019, 31-33). Their approaches were modified later, during the Tromsø COVID archaeology project (mentioned in Section 3.1 above) to document our movements during pedestrian surveys of the COVID material in downtown Tromsø (Magnani, Venovcevs, et al. 2021, 6-7).

This methodological toolkit provided me with a well-developed foundation to track my movements as I explored single industrial communities. In these studies, the GPS tracks enabled me to do three things. First, it allowed me to be personally attentive to those places I had visited and the ones I had not. During my field visits – especially in western Labrador and Sør-Varanger, regions to which I had extended access throughout my PhD – I made it a point to systematically walk and document every single street, preferably more than once, to phenomenologically experience the entirety of the built environment. By transferring GPS tracks on my computer and comparing the tracks to the street grid in QGIS (the preferred free and open-source mapping tool for my research) I noticed streets that I had missed and surveyed them over the subsequent days. This way, I can securely say that I have surveyed every single street in Labrador City (Figure 12), Wabush (Figure 13), Kirkenes (Figure 14), and Bjørnevatn (Figure 15). The same was also started in Monchegorsk, before COVID-19 closed off access to Russia (Figure 16).

Second, it allowed me to be aware of my movements through the places I was studying as a self-reflexive praxis. I wore my GPS constantly when I was out – not just when I was conducting fieldwalking surveys but also when I was visiting friends and informants, going to the grocery store, eating out, visiting the bar, etc. The GPS logs are tracks of my daily research life in these places and it is no surprise that they were concentrated in the places where I was staying, the centres, the most trafficked streets, and the places where I was getting groceries and food. As such, the GPS logs fulfilled a dual purpose in archaeological attentiveness – on one hand they made me attentive to places I might have missed in my surveys while, on the other, they confronted my own biases when moving through these places. The latter sometimes invited humorous reflections – what was that convoluted jumble of lines, if not me forgetting to turn off my GPS receiver while downing more than a few beers with the locals at a popular watering hole?

The third and final thing that GPS tracks enabled me to do is to *show* that I have visited the places I claim to have visited (see Figure 17 and Figure 18). This is not to make my work more scientifically “objective”, as translation and mediation occur in every act of archaeological visibility (Olsen et al. 2012, 79-101), but rather it is to ground my phenomenological embodiment of “being there” (Tilley 2008) unto places whose scales defy embodied understandings of a single individual (something I discuss more below). I am a single person “walking through ruins” (Edensor 2008) but my experiences would have been different if I had chosen to walk in a different way or on a different path. Understanding the place from the “inside” is ultimately subjective, time-dependent, and individual (Tilley 2008). Having a log of my paths allows future researchers to revisit the places I



Figure 12: Combined GPS tracks in Labrador City, 2018 – 2021.



Figure 13: Combined GPS tracks in Wabush, 2018 – 2021.



Figure 14: Combined GPS tracks in Kirkenes, 2019 – 2022.



Figure 15: Combined GPS tracks in Bjørnevatn and Sandnes, 2019 – 2022.



Figure 16: Monchegorsk tracks from 2018, drawn from Google Earth in the field.



Figure 17: Combined GPS tracks in western Labrador, 2018 – 2021.





Figure 18: Combined GPS tracks in Sør-Varanger, 2019 – 2022.

have documented, know where I have been, and look upon these places differently through their own surveys and methodological approaches. This is especially valuable in more outlying places that were only possible to visit once or twice; it was a mode of lingering in discontinuous sites that could only be visited unevenly as part of a multi-sited archaeology.

In a traditional archaeological sense, recording my tracks was most relevant with regard to three archaeological sites I registered with the provincial authorities in western Labrador – D’Aigle Bay mine survey site (Figure 19), Ashuanipi runway (Figure 20), and Twin Falls (Figure 21) (Venovcevs 2020b; 2022, 220-227; Venovcevs and Williamson 2022; Juhl et al. 2023). Given their protection under the Newfoundland and Labrador Historic Resources Act (Government of Newfoundland and Labrador 1990), future archaeologists may need these logs to see exactly where I have been and what I have documented as part of my site visits.

With the GPS receiver attached, a few times I employed more systematic transect surveys (Banning 2002, 89-92) and GPS point recording. Transect surveys were used during the revisit of the Wabush sand pits in 2021 (originally surveyed in 2019), to document a sequence of fire pits and jumping ramps and see the changes from one year to the next (see Article C). They were also employed to map and photograph objects in the transitory areas around Labrador City, for the documentation of everyday waste objects around the single industrial community (Figure 22). Walking five different spots at one-metre transects and photographing objects on the surface allowed me to document 3,003 objects in a 12,940 square metre area (Article D; Venovcevs 2022, 242-250). Thus, the use of the GPS receiver and fieldwalking became a mode of systematically paying attention, of “turning to things” (Pétursdóttir 2014, 345-348), in the mode that most archaeologists are trained to excel – surface survey.



Figure 19: D'Aigle Bay archaeological site (Figure reproduced from Venovcevs 2022, 227).

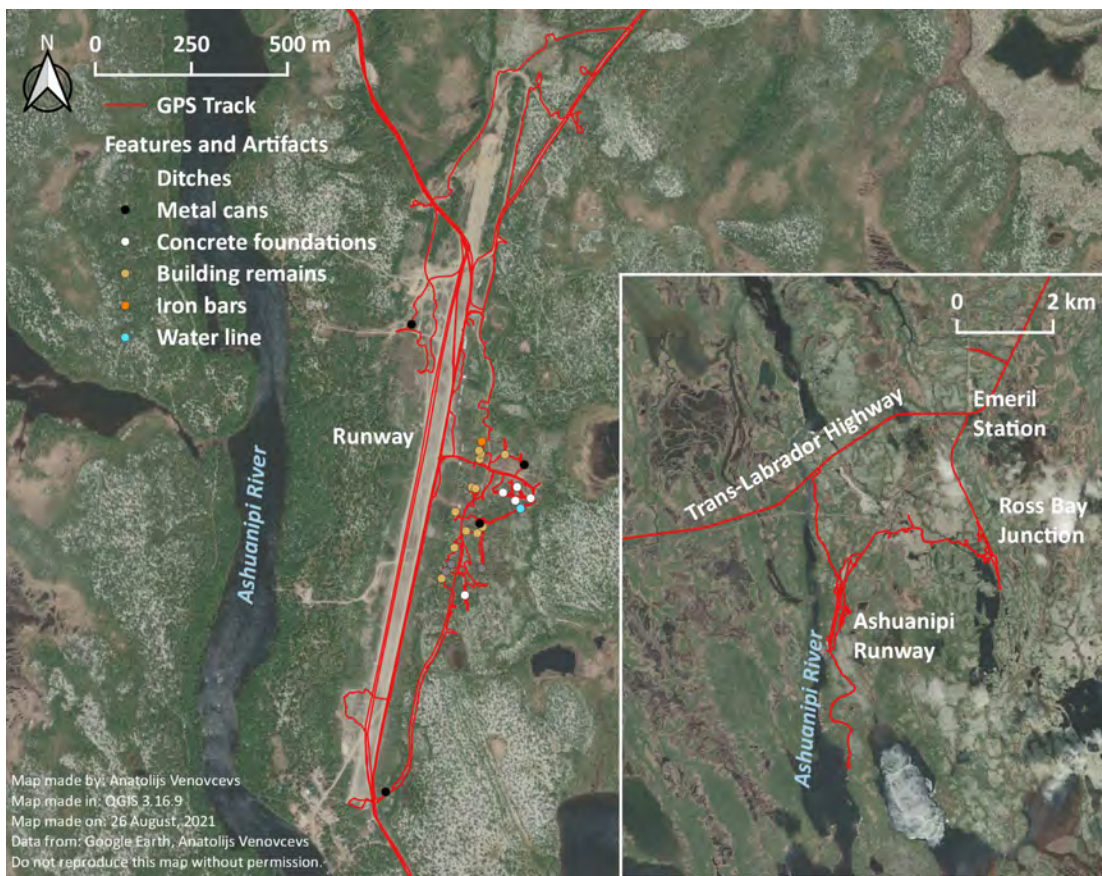


Figure 20: Ashuanipi Runway archaeological site and Ross Bay Junction (Figure reproduced from Venovcevs 2022, 221).

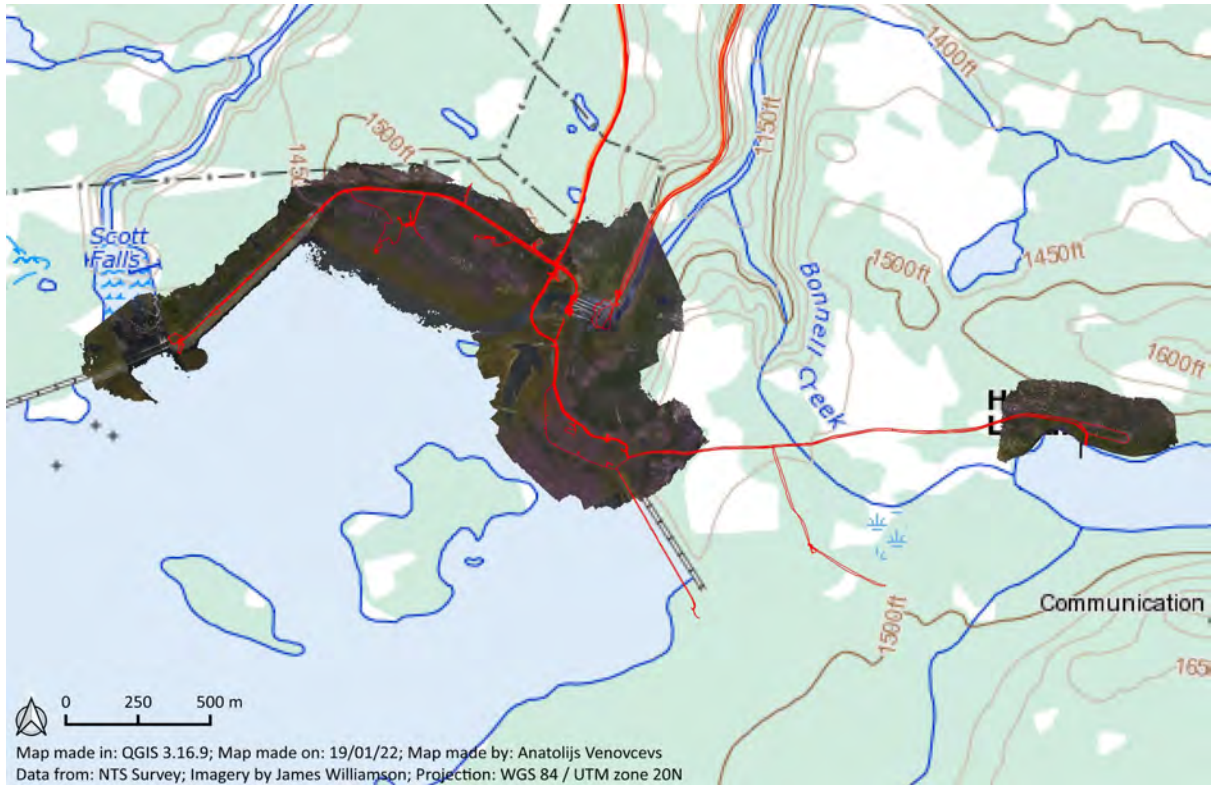


Figure 21: GPS tracks and drone imagery at Twin Falls (Figure reproduced from Venovcevs and Williamson 2022, 262).

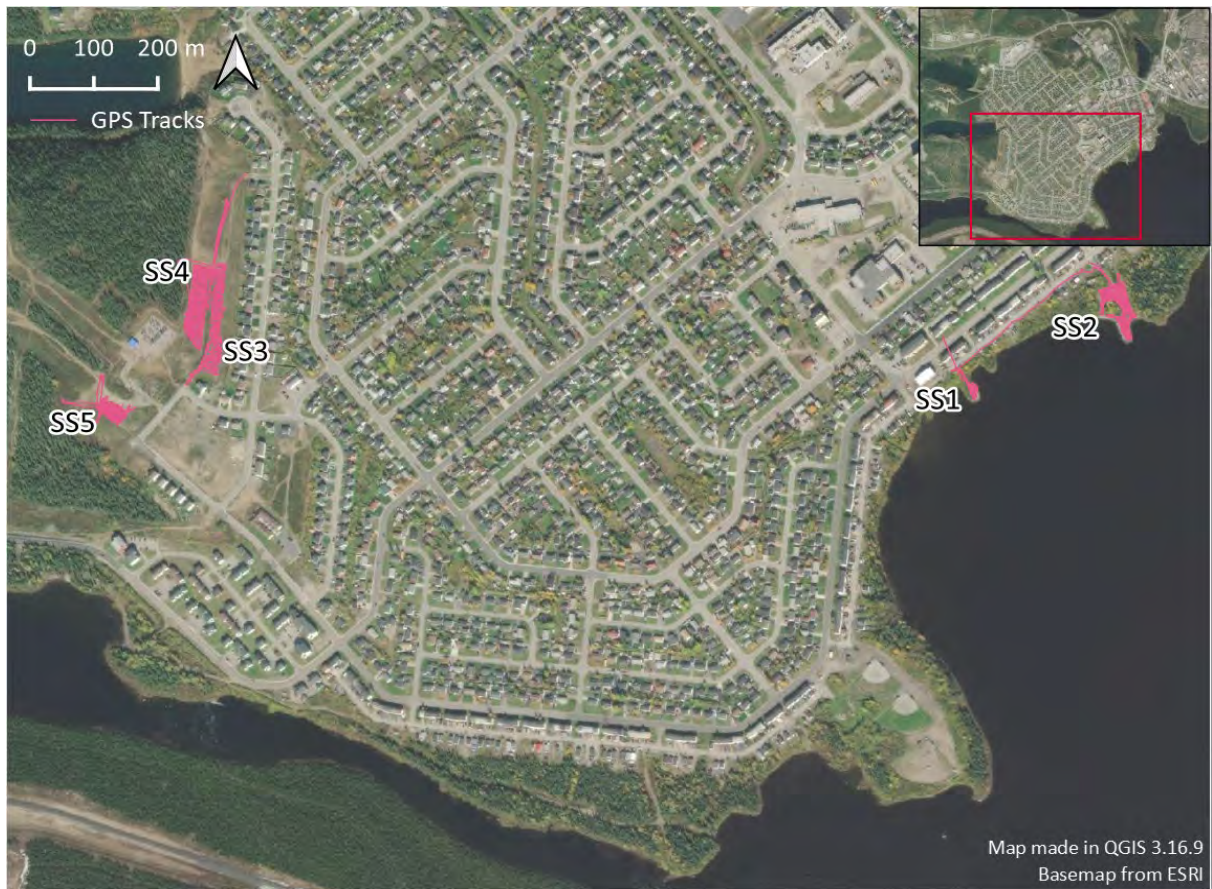


Figure 22: GPS tracks of Labrador City surface surveys from June-July 2021.

Rodney Harrison theorised on surface surveying in his attempt to reframe archaeology toward a focus on surfaces rather than excavations, in order to overcome what is seen as a modernist trope of discovery and depth constraining archaeological research (2011, especially pages 153-157). His work brings fieldwalking and surface assemblages to the fore; the act of walking through built environments allows for contemplation and speculation upon the accreting levels of the past and how they form the literal frameworks upon which the present and the future are built (see also Benjamin 1999). Such perspectives open the ground for theoretical contemplation of urban environments, vestiges, and wastes recorded through fieldwalking, where multi-chronological assemblages form regions that rose and declined within the twentieth century (Articles B, C, and D).

Equally important, acts of walking can be seen as a way to “[counteract] the spatial simplification of supermodernity, its tendency to flatten out and compress” (González-Ruibal 2019, 161). Despite its lack of highway connection, Labrador West serves as a poignant example of a place built for cars, replete with private vehicle ownership from the start. Walking in this area was particularly subversive as it gave texture to urban environments that were meant to be flattened and experienced from a car. Similar interventions took place on runways, locations meant to be experienced only upon landing and taking off, with hundreds of kilometres of the boreal forest in the middle; at quarries and mines, meant to be experienced in large earth-moving machinery; and at mine tailings fields, not meant to be experienced at all (Articles C and D). Experiencing these places on foot brought back an embodied sense of the “mega scale” (Edgeworth 2010) that would have been absent from the perspective of a vehicle, for which some of these environments were designed for. In fact, having experienced quarries, mines, and communities from a truck in the course of this research, I can confirm that this is the case. As such, it can be argued that, while archaeologists of the future (and the present!) may use mega and nano machinery to explore the mega and nano scales of contemporary features (Edgeworth 2010, 145-146), it is equally – and possibly even more – valuable to explore these features with our embodied senses, to bring back the sense of their monstrous scale (Figure 23).

Ultimately, the field surveys contributed to the main intervention of this research – the act of “being there” and bearing witness to the durable pasts and the evolving present (Tilley 2008; Andreassen, Bjerck, and Olsen 2010; Harrison and Schofield 2010, 67-70; Pétursdóttir 2014; Farstadvoll 2019b; Olsen and Vinogradova 2019; Witmore and Francisco 2021). GPS logs, walking, and surface surveys all allowed me to stay attentive to the things that comprised single mining industrial regions within my study and to comfortably say that I have experienced and documented as many things as possible within the restrictions placed upon me by the COVID-19 pandemic.

However, I am struck by the fact that this was ultimately not enough. Missing from this text, and any texts my research produced, are all the other multisensorial, phenomenological experiences within my multi-sited archaeological project. There was the hum of distant machinery that followed me everywhere in Labrador City, the sound of wind and bird song that I listened to while on top of the intake station at Twin Falls, the smell of mildew and oil inside buildings at Sydvaranger, the sulphur in the air around Monchegorsk, and the dust from the mines that I felt hitting my face as I conducted surface surveys on the shores of Little Wabush Lake while remembering an old time resident who told me that “it’s the stuff you *don’t* see that you should be worried about”. Walking, despite all its uses, has its limitations – I go deeper into this topic in the subsequent section.



*Figure 23: Human scale in the land created by machines – a friend and local resident inside the Sydvaranger open pit mine, May 9, 2021.*

### **3.2.3 Limits of Fieldwalking**

While most of my fieldwalking was limited to publicly accessible places, there were some locations that blurred the line between public and private space. Should the mothballed Sydvaranger mine or the Twin Falls hydroelectric power plant be considered publicly inaccessible (Article E)? Should I listen to the worn “Do Not Enter” signs and should I stay apprehensive even, if there is nobody there to enforce property boundaries? Am I, as a researcher, even entitled access to the land (Liboiron 2021, 66-69)? Or should I have as equal access as the locals who frequent these same places (Figure 24)?

The question of property and access is the spectre that shadows contemporary archaeology, where something may be owned but unguarded (Andreassen, Bjerck, and Olsen 2010; Rowsdower 2011), home but ownerless (Zimmerman and Welch 2011; Crea et al. 2014), disused but controlled (Khatchadourian 2022). In this way, contemporary archaeology must always negotiate more nuanced questions of access. Regional archaeological authorities may not always care about permission to access, survey, and excavate recent sites, but extra permissions may need to be sought from landowners, communities, residents, interested stakeholders, guards, and users, which make access in contemporary archaeology incredibly nuanced and intricate.

The mines and industrial facilities that I studied are not necessarily unique within archaeology, in general, or contemporary archaeology, in particular. However, in regions where much is built, operated, and owned by one or several large corporate actors, the blurred lines between use and disuse, access and closure become accentuated (Figure 25). Did trespassing happen as part of my field methods? It may have, but the boundaries of that are blurred and that, in itself, has led to interesting questions – like the one on the fine line between use and abandoned (Article E; Section 5.3).

As such, this research took lessons from other exploratory works when it came to avoiding closed doors and buildings, while seeing unlocked ones as invitations to come in without disturbance



Figure 24: People using the Sydvaranger mine for recreational purposes – note the tracks and the car near the horizon, May 9, 2021.



Figure 25: “Private property... trespassers will be prosecuted”, a sign near Duley Lake in western Labrador with forest behind it, July 20, 2021. I facetiously sent this image to a friend in Labrador City with a caption “Labrador West in a nutshell.” Reflecting about it now, this image is fairly iconic for a region where almost all land is owned by private, often corporate mining, interests regardless of whether or not it is actively being worked.

(Andreassen, Bjerck, and Olsen 2010; Farstadvoll 2019b). Given the non-intrusive, i.e., photographic, methods of recording, this was seen as acceptable. This work of exploration, treating unlocked, inactive places as accessible, found support in the Norwegian *Allemannsretten*<sup>36</sup> (non-disruptive access to land) while drawing inspiration from works of other archaeologists and writers (Hawkes 1951; Macfarlane 2012, xiv), urban explorers (Garrett 2014), and right-of-access advocates (Mitchell 2015). The point here was not to challenge the concepts of property boundaries per se but rather to creatively explore the boundaries between spatial control and (dis)use that are taking place in single industrial mining towns (Article E).

Since COVID-19 proved to be a limiting factor for interviews and, therefore, a large section of my work had to be conducted in museums, libraries, and local archives (Section 3.1), a low-contact survey approach emerged as part of participant observation (Calhoun 2002) within all three of my case study areas. Sometimes this was accidental – like being in Monchegorsk during Metallurgist’s Day in 2019 (Article B) – while others were planned – like being in Labrador West on Canada Day in 2021 and in Sør-Varanger for the Barents Spektakelet in 2022 and 2023.

While I was in Labrador West, news had broken about recently discovered graves at the assimilationist residential schools. It was therefore interesting to see how Canada Day (the country’s national holiday) was celebrated in the largely-settler Labrador West versus the largely-Indigenous Labrador (Austen 2021). The predominantly Indigenous communities in Labrador marked the day with marches and vigils; in Labrador West, the day was an awkwardly muted occasion, marked with barbecues and a day off, but without any official celebration. A small vigil was held in honour of the victims, but nothing compared to the scale seen elsewhere (Figure 26).



Figure 26: Memorial vigil put up for Canada Day at the Centennial Park in Labrador City, July 2, 2021.

<sup>36</sup> <https://miljostatus.miljodirektoratet.no/tema/friluftsliv/allemannsretten/>

Meanwhile, the Barents Spektakelet art festival has a tradition of engaging with the post-industrial legacies of Sør-Varanger, along with the complicated entanglements brought about by a border that is enmeshed within a complicated colonial heritage (Sørstrøm 2022). While attending the Barents Spektakelet, I observed how a post-industrial existence was negotiated under the shadow of the mining industry, where some of the events were held in repurposed industrial buildings. However, the 2022 theme “Where do we go from here?”, meant to speak to a new post-COVID openness across borders, was brutally intruded upon as the second day of the festival coincided with the Russian invasion of Ukraine. The second time I attended the festival in 2023, the mood shifted to being more about allowing space for the dissident, often Russian, voices to reflect on the events of their country and the broader region, rather than building a bridge for Barents cooperation (cf Røyseland and Rø 2010).

Private boundaries and uneven access to people presented both limits and opportunities to fieldwalking by both closing and opening accessibility to those surface assemblages accumulating within industrialized regions. However, surfaces offer a limited perspective on a discipline largely built on the exploration of depth (González-Ruibal 2011; Figenschau 2019; Farstadvoll et al. 2022). That being said, traditional subsurface explorations could not be readily conducted within the limited time and resources of my PhD.

The one time I had the opportunity to go deeper than the surface, however, proved incredibly productive highlighting the need for archaeologists to also excavate and explore depths. I, along with a research collaborator, James Williamson from Memorial University of Newfoundland and Labrador, dug two 50 x 50 cm test pits adjacent to the foundation of the former recreational centre at Twin Falls (Venovcevs and Williamson 2022, 271). One of the test pits, excavated just outside the side entrance, we recovered pieces of wood, nails, metal, tin foil, and a fragment of an outdoor lamp (Figure 27). The second test pit was excavated in the foundations of the former greenhouse that was adjacent to the recreational centre<sup>37</sup>. It produced bathroom ceramics, laminated wood, floor tile (potentially from asbestos), and a metal disk with asbestos corroded on it (Figure 28). The test pit profile revealed a 2-7 cm layer of buried asbestos – likely installed there to provide a layer of insulation for the greenhouse. I took five soil samples from the test pits; lab analyses conducted by undergraduate archaeology students at UiT: The Arctic University of Norway confirmed elevated levels of lead and sulphur, as well as the presence of asbestos and paint (Juhl et al. 2023).

While I was already aware of the toxic heritage of Twin Falls from historical records and previous site visits when going into the work, these personal encounters with dangerous substances could not have been achieved without going beyond the surface. The test pits were dug as an experiment to see what sorts of materials an excavation at Twin Falls could produce if one were to happen. The discovery of asbestos in one of just two test pits highlights the toxicity of recent heritage and presents a challenge for future archaeology – how can we safely excavate sites from the recent past when we are creating an increasingly contaminated world (Stewart 2017; Stewart, Jungkind, and Losey 2020)? This is not just a question for theoretical retrospection on the type of “unruly heritage” (Olsen and Pétursdóttir 2016) that is being left behind. It is also a poignant methodological concern – if a larger excavation at Twin Falls or other such places were to happen, how would we keep crew members safe from the toxicants that hide beneath the surface? Contemporary archaeology does not just call for theoretical reconceptualisations of what archaeology is, it also requires new sets of

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<sup>37</sup> Thank you to Sharon Montague, a former resident of Twin Falls, for identifying these buildings.





Figure 27: Material recovered from Test Pit #1 at Twin Falls, June 9, 2021.



Figure 28: Material recovered from Test Pit #2 at Twin Falls, June 9, 2021. Metal disk with corroded asbestos is on the bottom left.

methodological tools and procedures for carrying out toxic excavations (for a similar argument made within a museum studies context, see Bangstad 2022a, b).

### 3.2.4 Photography

Building upon the rich tradition of ruin photography within archaeology (Andreassen, Bjerck, and Olsen 2010; Pétursdóttir 2013, 76-80; Pétursdóttir and Olsen 2014b; Arboleda 2016; Farstadvoll 2019b, 49-51; Pétursdóttir 2021)<sup>38</sup>, photography features prominently in my research as a way to record and document the things as they appeared at the time of encounter in the present. As suggested by Þóra Pétursdóttir and Björnar Olsen, photographs are “genuinely archaeological”, showing “the past as topological and accumulating rather than successive and terminal” and therefore countering the idea of progress and replacement (Pétursdóttir and Olsen 2014b, 18). Photographs are also helpful tools that allow for prolonged exposure to things and the moments of encounter with them (Pétursdóttir and Olsen 2014b, 21-23). This proved essential when COVID-19 closed off access to Russia and the expense of travel limited my ability to easily visit Labrador. Photos became – and still are – the best method for me to revisit places that I have held in my thoughts for almost five years.

However, unlike previous work, that relied on un-stylized shots to promote oblique ways of looking (Pétursdóttir 2013, 77; Farstadvoll 2019b, 49) or the aestheticization of ruin photography to garner critical reflection of the subject matter (Arboleda 2016), I chose to take a step back to more traditional approaches within archaeological photography. As much as possible, I limited myself to a single camera for all my photos – a Nikon D5100 with an AF-S NIKKOR 18-55mm lens, though I avoided the zoom function as much as I could. Almost all my shots were done in a landscape orientation, and I used a scale bar for small and medium-sized objects once my methodological approaches started to mature after 2019<sup>39</sup>. In total, my work produced 1,337 photos from Russia, 8,168 from Labrador, and 3,118 from Sør-Varanger.

The use of scale or a single camera was not done to create a veneer of objectivity or reproducibility but rather, in line with archaeological surface survey, it was an attempt to utilize standardized tools to register features and things that I was encountering. The use of scale also made me stop and pay attention. Stopping, arranging scales, placing the north arrow all had a way to slow down my work beyond the initial encounter. When surveying Twin Falls, for example, I made sure to visit the remaining foundation of every single building and photograph the foundations along with visible features (Figure 29). The desire for thorough recording fuelled archaeological attentiveness to the features and surfaces within them that I might have otherwise missed.

The scale is also an attempt to experiment with archaeological practices of always having a scale in the picture (Figure 30). In traditional archaeological photography, great effort is taken to clean the feature depicted, brush away the dirt, and remove any “foreign” objects (Olsen et al. 2012, 50-53; Stobiecka 2022, 66-76). Scales and photo boards are the only things that are introduced into the picture and are, in fact, often expected to be there. This “scale work” has a useful purpose – allowing the observer to comprehend size in a flattered 2-dimensional image – but it also serves to frame the view, tame the image, and guide the narrative of the photo. It could be claimed that the use of scale might, in a way, be a method to domesticate the archaeological image, to reduce the obliqueness found

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<sup>38</sup> See also photo essays that are regularly featured within the *Journal of Contemporary Archaeology*.

<sup>39</sup> I am grateful for UiT Archaeology and Dr Scott Neilsen of the Labrador Institute for letting me borrow scales and stadia rods for my fieldwork in Sør-Varanger and western Labrador, respectively.



Figure 29: Service pit in the former garage at Twin Falls with a meter stick in front of it, June 10, 2021.



Figure 30: The surface assemblage from the Labrador City survey, reproduced from Article D, June 25-26, 2021.

in more spontaneous photographic encounters (cf. Farstadvoll 2019b, 52-53). While this may be true, including scales within photographs may also reveal obliqueness in its own right – like for example the scale in front of a runway (Figure 31). Archaeological methodologies, like the use of scale, have developed to study the human past where most things are human-built for human-scale (Edgeworth 2010; Olivier 2019). However, a scale seems absurd when applied to document something that is machine-built for aircraft-scale. In this way, something familiar is rendered unfamiliar (Buchli and Lucas 2001, 9) by showing it to be beyond what is understood to be human scale, all through the application of an all-too-common archaeological approach.



*Figure 31: Airstrip at Ashuanipi River near Ross Bay Junction, Labrador used approximately from 1957 to 1959, July 15, 2021. Stadia rod and north arrow to scale.*

A scale may once again become “tamed” and familiar when it shifts from a stadia rod to a map scale (compare for example Figure 20 and Figure 31 – the same object rendered in two different ways). While useful for descriptive purposes, this act of “mediation” (Olsen et al. 2012, 100-101) which is used to make space legible through manipulation and simplification (Scott 1998, 183-184), ultimately weakens our embodied understandings of the sorts of things that are being produced and that come to characterize the Anthropocene. While this has serious implications, both are needed. I return to this issue of working between scales in the subsequent section.

Uses of UAV and satellite imagery to transcribe place into abstracted, legible space through “outside” experiences (Tilley 2008, 271) has also been widely questioned and critiqued through perspectives such as Haraway’s oft-quoted “god trick of seeing everywhere from nowhere” (Haraway 1988, 581), critical GIS approaches (Schuurman 2000; Rose-Redwood 2008; Thatcher et al. 2015), and questions on the proprietary ownership and corporate world-making practices of Google and other private mapping companies (McQuire 2019). While these are valid critiques, the ubiquity and accessibility of such images has grown increasingly useful, both within archaeology, in general (Fernández-Hernandez et al. 2015; Gutiérrez and Searcy 2016; Campana 2017; Chatzitoulousis et al.

2019), and contemporary archaeology, in particular (Fowler 2008; Grabowski et al. 2014; Figenschau and Arntzen 2019, 8-11; Figenschau 2019, 51-53; Farstadvoll et al. 2022).

Given their applicability and accessibility, as well as my own familiarity with them from my earlier background working within Geographical Information Systems, I chose to employ such image work in this research. Most of the satellite images were procured from Google, Bing, or ESRI map services, which themselves purchase these images from satellites such as WorldView 3 and 4, QuickBird, and Airbus for their high-resolution imagery<sup>40</sup>. As Twin Falls lacks high resolution coverage, I purchased WorldView 3 data for the full overview of the site. Historic orthoimagery from western Labrador was purchased from the Department of Fisheries, Forestry, and Agriculture of the provincial government of Newfoundland and Labrador. The historic satellite imagery for Monchegorsk was declassified CORONA satellite imagery that had been collected by the US intelligence services. Finally, at Twin Falls, two drones were used by James Williamson, PhD candidate with the Department of Archaeology at the Memorial University of Newfoundland and Labrador, to document the settlement and work areas around the former settlement in high resolution. The drones were a Phantom 3 Pro for area recording – flown in a double grid pattern, run from a Drone Harmony application – and a smaller Mavic Mini to record building profiles (Figure 32). The models were processed using Agisoft Metashape and areas were georeferenced using GPS points gathered with an Emlid RS+ (for a more detailed discussion on these methods see Venovcevs and Williamson 2022, 261-264; Juhl et al. 2023, 202-203).



*Figure 32: Drone orthomosaic profile of the Twin Falls hydroelectric power plant – power house below, penstocks in the middle, intake station at the top, and power canal above that. Image compiled by James Williamson.*

My original intent with using such methods was to assess the size, scope, and nature of my case studies, as is most commonly done within contemporary archaeology (though see Fowler 2008). While this was achieved, the application of imagery in my research revealed other benefits of such

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<sup>40</sup> <https://www.quora.com/Which-satellite-takes-the-image-of-Google-Maps>  
<https://www.esri.com/en-us/arcgis/products/imagery-remote-sensing/capabilities/content>

approaches. These included tracking change over time, noticing the unexpected, and appreciating scales beyond embodied understandings.

Tracking change over time was possible through the comparison between historic and contemporary photography. As discussed in Section 4.6, contrary to the present-day reality of a “sticky” Soviet heritage (Olsen 2013b, 185-187), part of the built environments within the communities of Labrador West and Sør-Varanger have been more static than their (post-)Soviet counterpart, revealing the rapid evolution and change that took place within Monchegorsk. In this way, historical photography elucidates a traditional strength within both photography, in general, and aerial photography, in particular – it allows archaeologists to see, experience, and understand temporal changes captured by still photographic images (Herring 2009; McFadyen and Hicks 2020; Herring, Dabaut, and Last 2021). This helped me address my second research question about the tensions that arise as things from the past continue on into the present.

In addition to noticing changes over time, aerial images also allowed for the unexpected to emerge when the viewing angle shifted from the ground to the air. Most strikingly, this took place with the drone photography at Twin Falls. The drone survey was originally suggested as a response to the size of alders at the site, as a way to fly above them and document the visible remains beneath (Venovcevs 2020b, 224). While the survey successfully accomplished this purpose by clearly delineating the remaining foundations, the imagery documented another unexpected feature – the forest of alders that took over the voids left over after human occupation (see Section 4.7.2). This unexpected consequence came about only with a shift of approaches to a different method of seeing and would not have been possible otherwise. Therefore, it can be emphasized that in addition to traditional reasons for conducting drone and aerial surveys of sites – documenting scale and scope – a shift in perspectives also offers a different way of noticing, and therefore experiencing, places of archaeological study.

Finally, given the scale of sites in my study – from airstrips to quarries to mines and entire communities, satellite photography was helpful to understand the scope of these places in both the present and in the past. As argued by Laurent Olivier, the Anthropocene has greatly challenged archaeology by pushing things beyond the human scale (Olivier 2019). Matt Edgeworth, meanwhile, theorised that the whole anthropogenic surface can be thought of in terms of a patchy, heterogeneous, but largely universal “archaeosphere” (Edgeworth 2014, 104-107). Large overview imagery can therefore be useful in this work by capturing and making graspable the mega features that characterize the present. It can also help to bear witness to the transformative power of humans within the Anthropocene, as echoed in the work of photographers like Edward Burtynsky (Burtynsky, Baichwal, and de Percier 2018; see also Witmore 2019).

In such a way, one can see the size of tailings fields in Labrador West or Sør-Varanger or the dead zone around Monchegorsk much better than one could grasp them from the ground where you literally can become subsumed by the wastes you are seeing (Article D). Large scale imagery is a way to come closer to an understanding of humans as a geological force – though at a risk of distancing us from the humans and non-humans who must live with these transformations. For example, Burtynsky’s photography, while valuable, can be critiqued for being impersonal by very rarely including the human – the *anthropos* behind the Anthropocene and the one who is, in part, also responsible for reaping its consequences. As such, different types of viewing are imperative when one is trying to do an archaeology of the Anthropocene. One needs to shift scales to match the object in question. This requires zooming out to the landscape scale of an aerial image or a Burtynsky photograph. Equally and oppositely, this requires zooming in to the human scale, where the

Anthropocene is experienced on the ground, and also to adapt to the object scale that is the domain of things that will carry material consequences of the present into the far distant future.

### 3.2.5 Scale Shifts

Early on in my PhD, I was accused of working – or rather “jumping” – between different scales. I worked with things from the size a small object – a pellet, a chair, a ramp – up to the size of an airstrip, a mine, a factory, and their associated components. Unfortunately, as my PhD work matured, this aspect of my research has not diminished – I do, even now, shift between extremes that might be uncomfortable to some scholars.

These shifts in scale are a product of my methodological choices, the subject of study, the realities of doing the archaeology of the Anthropocene (see the section above), and incommensurable relationships that abound between things at different scales. Methodologically, multi-sited archaeology/ethnography generally needs to be multi-scalar as one must shift between sites that are large and small, well surveyed and poorly surveyed, the things between sites and the ones within them, etc. (Ryzewski 2011, 250-251). Multi-sited archaeology is an attempt to follow the topic through these various layers and ultimately bring them together. Performing this action leads to movement between things that may seem to have little to do with each other, but ultimately have the same origin point (Marcus 1995); for example, the waste rock piles created by miners on their job sites and the pieces of everyday litter created by those same miners “offsite”, on the peripheries of their communities (Article D). Oppositely, multi-sited archaeology may also connect things that have different origins but that have now been brought together through accumulation, which characterizes present legacies and archaeological assemblages in general (Olivier 2011; Olsen 2013a).

Using single industrial towns and the regions in which they are located as starting points for my study – as opposed to landscapes, buildings, and objects – ultimately necessitates these shifts in scale. Instead, it is the objects, buildings, and landscapes as well as their historical and political specificities that ultimately comprise towns and regions. A surface built of crushed ore and pellets is remarkable as a new and unique geo-archaeological stratum (Edgeworth 2014). This can be labelled as one of the many indicators of the Anthropocene (Figure 33). However, it is comprised of many individual pellets (Figure 34). Each one is a 1 cm iron-ball of 64%-65% iron, binding agent, and occasional flux that dates (at Sydvaranger) from 1969 and to 2008<sup>41</sup> (Arvola 2004, 51; Lund 2015, 147). The ore and the pellets comprise the surface. Similarly, things like firepits, dachas, jumping ramps, and ruderal plants comprise the former Rizh-Guba quartzite quarry and the Wabush sand pits (Article C). These constructions are not *a priori* relationships but involve accumulation, movement, and the labour of human and non-human actors. Scale is a formational process and the result of making connections between what archaeologists study (Witmore 2011, 230-231).

At the same time, scale is about relationships, affects, and effects that are context-dependent. The specificities of actants matter and include their relative size, their ability to cause an effect, and with what they are interacting (Liboiron 2021, 84-89; Liboiron and Lepawsky 2022, 39-46). For example, the chemical effects of mining pollution on fish have often been framed in terms of the human impacts, such as bioaccumulation (Moiseenko et al. 2018). However, the harmful effects of industrial waste can be significant on non-human others in lower concentrations. In Labrador West, the case of “red water”, a common symptom of concentrations of iron oxides floating in the water

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<sup>41</sup> The start of pellet production and the demolition of the pellet plant, respectively.



*Figure 33: A surface made up of iron pellets and crushed pieces of iron ore, Sydvaranger plant in Kirkenes, July 27, 2020.*



*Figure 34: Individual pellets from Sydvaranger and fragments of green bottle glass on slambanken, May 3, 2021.*



from the dumping of mine waste into the lakes, has mostly been an aesthetic disturbance to residents. However, it also changes pH levels within the water, impacting fish and causing skin bleaching in lake trout and oxidative damage on the cellular level (Payne et al. 2001). Fish suffer from pollution which for humans might be mostly an aesthetic concern. The same can be said about ocean and beach clean-up efforts. Volunteer actions, as well as ineffective and destructive technological fixes, are done out of a feeling of personal altruism but do not scale up to address the real issue of plastic overproduction (Liboiron 2016, 101-102; Liboiron and Lepawsky 2022, 39-43). Therefore, scale shifts must consider not just the material properties of large and small things, but also the interactions between them. It must address questions about on whom the impacts are being made.

As discussed in Article D, as iron is relatively harmless (though see Lund 2015, 149-165 for a discussion on additives used in mine processing at Sydvaranger) it takes a large quantity of waste for it to be felt as excessive by people. It only becomes an issue when they are in constant visual and material encounter with waste. Echoing Tim Ingold (2012), what is considered an excessive amount here is relative to the material properties of the substance in question and the individuals who are being impacted.

Ultimately, an archaeology of the contemporary needs to consider all scales as unique and irreducible, then learn how to work amongst them and more between them. Nanoscales of chemical concentrations and microplastics are as much a symptom of the present as the disposable drink bottles, plastics straws, coffee cups, railways, highways, hydroelectric power stations, and open pit mines. Each has its own distribution, and they are all diagnostic features of the patchy Anthropocene.

### **3.3 Ethical Considerations**

Serious ethical considerations arose from my choice of theories and the methods presented in this dissertation. I already partially addressed this topic by discussing my choice of socially distanced methods in the context of COVID-19 and the ethically responsible choice to minimize contact during the worst years of the global pandemic (see Section 3.1). However, several issues remain unresolved, namely – the use of photography as a medium for documentation, the role of the researcher in relationship with the chosen area of study, the expectations on the researcher in locations that could be considered other peoples' home spheres, and the notion of "home" on traditional Indigenous land. Here, I address these issues sequentially.

Photography was the key method for field documentation in my thesis. However, it carries the legacies of colonial and imperial domination of the world, especially in service to the disciplines of archaeology and anthropology as interlocutors of such domination (for examples see Pinney 2011; Guha 2014; Lydon 2016; Baird 2017; Sterling 2017). Of relevant critique here as well, is that the aestheticization of ruins and other abandoned places through the use of photography, at times referred to as "ruin porn", excludes people in order to create depopulated and depoliticized images, devoid of the individuals most affected by the material realities of ruination and decay (Pusca 2010, 2014; Ryzewski 2014; for a response see Pétursdóttir and Olsen 2014b; Pétursdóttir and Olsen 2014d).

While excluding people can, at times, be used as part of ruin aesthetics to create an atmosphere of abandonment in an otherwise non-abandoned space (thus helping to construct the concept I critique in Section 5.3), excluding people from photographs can also be an ethical choice to protect the privacy of non-participant individuals. One of the harshest critiques of photography in the name of science has been the act of turning people into objects for study and manipulation (Bailey 2021). Out of respect, people are generally absent from my photographs and, when they are present,

they are distant, their bodies turned away from the frame to hide their faces in respect to their identity. Additionally, where present, I went to great lengths to edit the photos to blur street names, addresses, license plates, and other identifiable features of private cars and residences. While this was not strictly necessary, given that all of my photos were taken from public places (see the discussion on home spaces below), I felt it necessary to maintain the highest levels of confidentiality in my research (Research Ethics Committees 2019, Privacy).

Regarding the critique on photography's role in colonialism, the same accusations can be levelled at text, which is equally malleable and manipulatable and which has likely played a much greater role in inscribing western hegemony around the world. Such critiques, however, are far less explicitly articulated (though see Said 1978) in comparison with academia's longstanding "iconophobia" (Pétursdóttir and Olsen 2014b, 12-14). This bias is likely due to our inescapable dependency on text – whereas images have a scholarly status as "supplements". Instead, and quite different to text, photographs carry a great degree of independence due to their ability to escape the frame and the original subject of the image (Pétursdóttir and Olsen 2014b). This could be another reason for the suspicion ascribed them.

In contemporary archaeology, a main criticism relates to photography's presumed aestheticizing impact, providing glossy images of ruins devoid of humans and social realities. In defence of ruin photography and aesthetics, Þóra Pétursdóttir and Björnar Olsen evoke the original meaning of aesthetics to argue how it can be conceived as an unmediated experience of reality as opposed to an intellectual contemplation of beauty and taste (2014b, 15). Following Terry Eagleton in reconceptualising aesthetics as "primitive" and "rebellious" materialism (Eagleton 1990, 13), they thus advance three theses on (ruin) photography:

*First, that the aesthetic is not a supplementary veil added to things but rather an affordance of things themselves that is released upon our encounters with them; second, that photography is aesthetic (or aestheticizing) also because it grasps this direct engagement with things and ruins; third, that photographs have an integrity that is resistant to the meanings ascribed to them and thus that they have at least partial autonomy as to what they disclose and bring forth. (Pétursdóttir and Olsen 2014b, 16)*

It is the last thesis that is most relevant to the discussion here. While photography is selective in terms of the eye, the frame, and the photographer, it is equally affected by what it encounters in front of the lens and how the photographed other presents itself at the moment of encounter (Pétursdóttir and Olsen 2014b, 17; Farstadvoll 2019b, 48-51). The other thus has an equal or greater impact on the composition of the image than the photographer. The photograph thus becomes a frozen instant in time, situated and present, affording further recollections of that encounter between the lens and the thing (Figure 35 and Figure 36). Therefore, it is precisely the objectifying and capturing nature of the photograph – critiqued as problematic and repulsive – that can instead be conceptualised as a non-intrusive, non-demanding approach to things (Pétursdóttir and Olsen 2014b, 18-19).

Going further and employing Roland Barthes's conceptions of *studium* and *punctum* (Barthes 1984), the contextual meaning of the photograph and the indistinct, incidental, aesthetic effect of the photograph itself, respectively, Pétursdóttir and Olsen argue that the photograph "carries the unique potential to recall the initial encounters with things prior to their subjection to interpretation and explanation, and thus also to bring forth some of their otherness and difference" (2014b, 20-21; see also Olsen and Pétursdóttir 2014b). According to Barthes, the *punctum* in the image also captures the



*Figure 35: Photography recalling moments of encounters with things, old machine workshop Sydvaranger mine Bjørnevatn, July 25, 2020.*



*Figure 36: Photography recalling moments of encounters with things, old machine workshop Sydvaranger mine Bjørnevatn, May 9, 2021.*

deviant, the detailed, and the unintended that is not seen at the moment of encounter. In this sense, all photographs, as things in themselves, take on a life of their own, independent of the technology's roots as a tool of colonialism or the intended focus of the frame (Hamilakis, Anagnostopoulos, and Ifantidis 2013, 288-291). Photographs thus always retain the potential to reveal alternative meanings or be altered, destroyed, or repatriated as part of emancipatory processes (McFadyen and Hicks 2020; Bailey 2021).

As a final point on the topic of photography, despite its colonial origins, it is important to stress that photography is a valuable tool in its own right for political, ethical, and social engagement in the present. Aesthetic photography with archaeology and heritage can be the first step to political engagement with, and critical comprehension of, the reasons behind ruination (Arboleda 2016). It can reveal the monstrous scale, scope, and speed of things within the contemporary era (Witmore 2019) or act as a form of salvage archaeology – as an ethical obligation to document condemned and ephemeral things before their disappearance (DeSilvey 2013; Magnani, Venovcevs, et al. 2021).

Following this thread, I arrive at the next issue regarding the role of researchers in relationship with the chosen area they study. In recent years there has been a growth of political activism within archaeological and heritage research (González-Ruibal 2008, 2017; De León 2012; Crea et al. 2014; McAtackney and Ryzewski 2017; González-Ruibal, González, and Criado-Boado 2018), with some even advocating for an “activist turn” in memory work and heritage (Gutman and Wüstenberg 2023). This is captured well in the final paragraph of a now-classic article by Alfredo González-Ruibal where he condemns the “Anglo-Saxon dualism of scholarship and commitment” and calls “for the restoration of the French tradition of the engaged intellectual [where] scholarship and political commitment are one and the same” (2008, 262).

As pointed out by Bjørnar Olsen and Christopher Witmore, politics has, for some, become the “first philosophy” (2021, 71-74) and it is in this context that new materialist and other object-oriented approaches have come under criticism as an apolitical and irresponsible – “dithering while the planet burns” (Hornborg 2017; for other examples see Ion 2018; González-Ruibal 2019, 56-58; McGuire 2021; Van Dyke 2021). As recently argued by Þóra Pétursdóttir and Tim Flohr Sørensen, these critiques and others reveal a fossilization and a foreclosure on ethical questions to the realm of exclusively human concerns, which have been placed above objects of care (2023, 7-10).

On the other hand, the ethics of my thesis takes inspiration from the works of Olsen, Witmore, Pétursdóttir, and Sørensen by not immediately “over naming” (Benjamin 1996, 73) things to be stand-ins for my political critiques of northern colonialism, industrialism, and the resource extraction industry (for which, I assure you, I have a lot). Much like there is a commitment to people in the present, there needs to be a commitment to things “grounded in a serious concern with how things manifest themselves, including how they may persist and outlive us” (Olsen et al. 2021a). It is through attention to things and their afterlives<sup>42</sup>, themes with which archaeology has hundreds of years of experience, that the discipline can fulfil its disciplinary *response-ability* (sensu Haraway 2013) in a period of environmental and political upheaval (Olsen and Witmore 2021, 72). Archaeologists can ethically and appropriately respond to the challenges of the present through care and commitment to things that are otherwise considered unworthy of attention (Pétursdóttir and Sørensen 2023, 11).

As such, my work takes on a deeply aesthetic dimension through the medium of photography as an ethical component. Quoting Pétursdóttir and Sørensen:

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<sup>42</sup> Here I would also add the attention to the industrial origins of things (see Section 2.4).

*Anthropocene becomes 'real' by being aesthetic; by being material and affective and by being corporeally experienced. In turn, we need ethics to be speculative, not given; ethics needs to be generated through aesthetic – phenomenological – engagements with real, polluted environments, not before, above or outside of them. (Pétursdóttir and Sørensen 2023, 12)*

Therefore, I attempted to be humble in my approach, using a documentary commitment and an “activist absence” based on the ethics of “letting be” and knowing when not to act (MacCormack 2012; see also Olsen et al. 2021a, 13-14). The decision of activist absence stemmed from the fact that I came to my case studies as a stranger and an outsider<sup>43</sup> and inevitably perceived these places from the outside; this is in addition to the complex inside-outside dynamics of settler-industrial communities on traditional Indigenous land (something I return to at the end of this section). Documentation and description were the initial, logical, and ethical responses to start understanding the material, social, and political dynamics of the places I studied. While my years of engagement have expanded my knowledge in these areas and forged friendships that I hope will continue for a lifetime, this does not necessarily give me the right to engage with the sort of activist scholarship called upon by some academics. If such work were to happen, it would need to be requested and led by the communities themselves (Davies 2020; Kelvin et al. 2020; Rankin and Gaulton 2021).

However, activist absence does not mean being a “disengaged intellectual” (cf González-Ruibal 2008, 262). Over the course of my PhD research, I have been extremely active in public research communication about what I am doing both within and outside the regions I have studied. The effects of this are difficult to quantify but, anecdotally, many more people have read, listened, watched, and engaged with my public-facing output than with my academic texts. Unfortunately, and ironically in light of the “activist turn”, such output is still undervalued and underappreciated within academia. It is for this reason that the quality of my thesis is judged on the basis of this manuscript and Articles A through E, rather than on my editorials, public science publications, open-access reports, and appearances in newspapers, radio, TV, and podcast. All these must remain relegated to the depths of the works cited section (Abarkach 2020; Kunnskapskanalen 2020; Venovcevs 2020a, b, d, c, 2021, 2022; Careen 2021; Living Heritage Podcast 2021; Venovcevs and Williamson 2021a, b, 2022; Juhl et al. 2023). Ethical commitments can take many forms.

Public engagement speaks to the broader issue of the effect the researcher has on the site and the topic of placemaking. I discuss the material dimension of placemaking in detail in Section 4.6, specifically as it relates to the accumulation of wastes and vestiges in creating textures within communities and regions that were developed to exist as modern places, without a past. However, here, I want to focus on my own actions as a researcher that have facilitated placemaking. As suggested both by Alfredo González-Ruibal and by Rodney Harrison and John Schofield, placemaking is one of the most powerful tools available to archaeologists for uncovering histories, textures, and depths that are otherwise concealed from the wider public (Harrison and Schofield 2010, 256-257; González-Ruibal 2019, 138-139; see also Soto 2016). At times, this has been legislative and overt – like registering archaeological sites as a commitment to things, drawing attention to them as objects of concern that are in need of formal government oversight, protection, and care (Venovcevs 2020b;

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<sup>43</sup> While I lived in Labrador before starting my project and knew some of the people there before this work began, I did not feel that it automatically gave me the inside knowledge and/or the right to pursue a broader political agenda as part of my research.

2022, 220-227; Venovcevs and Williamson 2022). At other times, placemaking was more embodied in simply being there, working within the regions, and engaging with the people who live there.

Researchers draw attention, and create commitments, by simply being and working in a place and by engaging with those who live there. While explicit activism may dull academic scholarship and nuance (Olsen and Witmore 2021, 73), being amongst people, creatures, and things can help reveal and solidify acts of devotion, thoughtfulness, and care that exist among them (Olsen et al. 2021a, 12-13). That act is also part of ethical research insofar as it is “not so much about the rights of entities, beings or creatures but about the spaces between them, and how to share those spaces” (Pétursdóttir and Sørensen 2023, 13).

However, this act of being and doing research in a place gets muddled when that zone can be considered somebody’s home space. The accusation of voyeurism shadowed contemporary archaeology even before contemporary archaeology developed as a subdiscipline. The famous example is the 1970 interaction between A. J. Weberman – a writer, activist, and avid Bob Dylan fan – and Bob Dylan. Weberman started going through the musician’s garbage in order to find potentially valuable information about the musician’s life. The material itself was not particularly illuminating – shredded remains of fan letters, granola and cookie boxes, discarded magazines, Polaroid negatives, torn up drawings, diapers, and liverwurst wrappers. Despite the slim pickings, the act of going through the garbage, and Weberman’s endless attention into Dylan’s private life, ended up attracting the ire of the musician. According to Weberman, Bob Dylan eventually attacked him in 1971 in the middle of downtown Manhattan as a way of getting him to stop the perusal of his garbage (Dreifus 1971; Doggett 2007).

Use of garbage as a means to peak into private spaces and lives was also one of the main themes of William Rathje’s foundational garbage project, though this was done with consent of participating households and the collaboration of City of Tuscon’s garbage collection department (Rathje and Murphy 2001). Still, as argued by Alfredo González-Ruibal, archaeology – all archaeology – is a little bit obscene. It asks intimate questions and forces the subject to answer; the subjects, things, cannot refuse to answer (2019, 74). I find this accusation slightly inaccurate, since things never do answer us fully; they always hide parts of themselves beyond our range of knowledge and retaining capacities to always say something more (Harman 2011; Pétursdóttir 2017, 2018b; Witmore 2020). Nonetheless, it points to a voyeuristic discomfort within archaeology of always handling *somebody else’s* things. The solution out of this ethical quandary is commitment – to bear witness, to communicate, and to disclose what has been revealed. After all, as González-Ruibal reminds us, while the archaeological gaze sees too late, it also sees more completely (2019, 75-76).

How does this relate to my research, where I spent a considerable amount of time walking down and recording streets – to say nothing about the murky, regional peripheries of resource extractive regions? I already touched above upon the ethics of access to the peripheries (Section 3.2.3) but here I come back to the question of taking photographs in the urbanized parts of the regions in question. The separation of private/public is less muddled (though not universally so) in the city and, for that, I limited my access and my photography to those things observable from the street, from a public space, and from other public or commercially accessible places. In this way, while at times I often chose new and unique routes – like going through back alleys and side trails – I had no more access to people’s private home spheres than Google Street View.

This position is not necessarily immune to controversy. One analogous example comes from the controversial Norwegian play *Ways of Seeing* which filmed the exteriors of houses of prominent right-wing Norwegian politicians to contrast them with refugee camps – the home spaces of people that those politicians wanted to keep out of Norway (Enge 2019). The play was heavily critiqued by

the targeted politicians. It even including caused a major court case, where one of the individuals whose house was filmed tried to frame the play for vandalism. Ultimately, charges against the production were eventually dropped as no private information was disclosed.

One of the things that the play and the controversy surrounding it, exposes are the different conceptualisations of space – private and public, home and outside. While I came to the regions as an outsider, I never entered people’s private home domains and went to great lengths to anonymize photos, both in the field and in post-processing, to address this grey area. The photographic data collected in my study consists of material that is equally accessible to everyone, with the added commitment of respecting privacy above and beyond stipulated policies and legislations.

Finally, the discussion of home space begs a serious question – a home space for *whom*? While the focus of this thesis has been the industrial heritage of (sub-)Arctic industrialized regions, industrialization is a false zero point. As I discuss in detail in the subsequent section, Sør-Varanger, the Kola Peninsula, and western Labrador are traditional territories for the Skolt Sámi, the Akkala Sámi, the Innu, and the Inuit, respectively. Their presence predates the coming of industrial settlers by many thousands of years. These groups have long histories and rich traditions and their interactions varied with regard to twentieth century industrial colonists and colonialism (see Sections 4.1 – 4.4). In this broader historical context, both I and the objects of my study are outsiders.

Likewise, it is important to remember, that Indigenous people and their things have not disappeared nor have the Indigenous peoples’ rights to land been formally ceded to their respective colonial governments. This situation places certain obligations on me as a white researcher. The first, but not least of which, is acknowledging on whose land this research was conducted (see the Acknowledgements). The second, and equally important point, comes with the understanding that all research is based upon an assumed right of access to land. The idea of right of access, and the conceptualisation of land as a tradable, sellable, and usable commodity, are two of the underlying logics behind colonialism and, in particular, northern industrial colonialism (Liboiron 2021 discusses researchers' assumed access to Land at length; see especially pages 5-15, 66-69).

One way forward is to follow through on the duty to inform and ask for a right to access. Legislations and expectations on the duty to inform differ extremely between Russia, Norway, and Canada. In Labrador, this required research permits and formal research agreements with two Indigenous groups who claim sovereignty over western Labrador – the Innu Nation and the Inuit of NunatuKavut. The agreements stipulated duties to consult and inform on my research results as well as to share all the data and publications with the groups after I am done<sup>44</sup>. Interestingly, however, the interest in my project by representatives of both groups was relatively muted. They mostly saw the contemporary developments in western Labrador as modern garbage and “imperial debris” (Stoler 2008), rather than as valuable parts of their heritage worthy of protection and preservation<sup>45</sup>.

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<sup>44</sup> I expanded the duty to inform and share results beyond Indigenous groups and, throughout this project, I informed and kept good contact with companies, municipal representatives, local politicians, and members of the public.

<sup>45</sup> This is not universal statement, as the legacies of Indigenous involvement and consequences from twentieth century industrial development are nuanced and multifaceted. Some Indigenous individuals worked and contributed to industrialization (Boutet 2012, 2013; Venovcevs and Williamson 2022, 259), while others had their lives completely upended and destroyed without restitution (Wadden 2001; Loring et al. 2003; Cockerill 2004). Many Indigenous groups thus see twentieth century legacies as intrinsically harmful and destructive, interpreting the material left behind by them in terms of waste and

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dispossession (Rankin et al. in press). However, as such, it is in these northern, Indigenous, economically and politically marginalized areas that the durable materiality of certain things becomes sharply conspicuous (see Section 2.2). Rather than being material that can be easily cleaned up, unwanted and unsightly things linger on the land, acting as a source of constant neuralgia to those who must confront them.



## 4 Historical Background and Major Themes

### 4.1 Resource Peripheralization

The Kola Peninsula, Sør-Varanger, and western Labrador can be described as “resource peripheries” in relation to their respective states and in the broader twentieth and twenty-first century global economic network. The word “periphery”, however, often carries with it negative associations. It is seen as backward, outlying, rural, underdeveloped, and parochial (Svensson and Gardiner 2007; Svensson 2015; Venovcevs 2017, 34-37). Designating something as a “periphery” is a way to enforce difference and power structure by defining something as marginal from “the centre” (Svensson and Gardiner 2007; Niemi 2009, 434). This often takes on material connotations, as various power systems send their waste or other unwanted externalities to spaces that are designated to receive those negative by-products, while making political systems function as they do (Liboiron and Lepawsky 2022, 20-25). At the same time, “periphery” is a relative term, based upon one’s own positionality. Peripheries have their own peripheries, be it back in “the centre” or in more distant or localized “peripheries” (Venovcevs 2017, 34-37). Used uncritically, the word “periphery” can inadvertently reinforce harmful power structures or historical injustices. Thus, a certain amount of effort is needed to define what exactly is meant by the term “resource peripheries” as it used in this thesis. Here, I set the stage for how the peripheralization of places created the material traces discussed below, in each of the three case study regions.

Coming from economic geography, the concept “resource peripheries” can be defined as “regions at the intersection of natural resource extraction and the periphery (distance from the resource-hungry economic core). They are often remote regions with difficult to inhabit climates, perceived to be ‘sinks’ of raw materials” (Martinus, Loginova, and Sigler 2021, 88-89). Resource peripheries exist on multiple scales with local, regional, national, and global levels playing against each other to make them not always entirely powerless in these periphery-core relationships (Irrarázaval and Arias-Loyola 2021b).

In this conceptualisation, cores generally tend to be relatively more urbanized, possessing more robust infrastructure systems than their associated peripheries (Martinus, Loginova, and Sigler 2021). Infrastructures in resource peripheries, meanwhile, tend to prioritize things that aid and facilitate resource extraction over alternative means of development (Articles B and C). Peripheries may also lack full political representation within their related cores (Martinus, Loginova, and Sigler 2021, 89). For example, Labrador which, as the territorially larger, more resource-rich part of the province of Newfoundland and Labrador, lacks significant representation in the provincial legislature. This is also true for Finnmark, which is the least populated of Norway’s 19 counties<sup>46</sup> and was briefly amalgamated into the larger county of Troms, against the wishes of the population. In this relationship, Indigenous groups in both Labrador and Finnmark have a voice. The Innu Nation, Nunatsiavut Government, and NunatuKavut Community Council in Labrador, and the Sámi Parliament in Finnmark wield significant influence over how resources can be developed. This, of course, has not been the case historically and, even under the current systems, Indigenous control over resource development has been a contentious issue within neo-liberal nation states (Cameron and Levitan 2014; Kulchyski and Bernauer 2014; Dannevig and Dale 2018). Meanwhile on the Kola

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<sup>46</sup> Until 2018. In 2020, that number was condensed to 11 including Finnmark, which was merged with Troms county. However, at the time of this writing, the county of Troms and Finnmark is in the process of being split again into two separate counties.

Peninsula, regional development was decided from St. Petersburg or Moscow for a long time and Indigenous groups wield significantly less political power (Gutsol, Vinogradova, and Samorukova 2007; Koivurova et al. 2015; Vinogradova 2016). As such, many political decisions regarding the peripheries are taken by outsiders, minimizing local sovereignty, and exacerbating peripheralization. All the while, cores are reliant on their peripheries for materials that underlie their economies and lifestyles (Hayter, Barnes, and Bradshaw 2003). This reliance has grown increasingly prevalent over the last decades and centuries as economic, political, and cultural power has grown centralized in large urban areas whilst pushing industries to the edges (Section 2.4).

Being attentive to both historical and ongoing developments helps to denaturalize resource peripheries from the purely extractivist position of being drawn into a network of “extended urbanization” of the planet (Brenner and Schmid 2015). Instead of treating these regions as peripheries, it would be more useful to talk about them as being peripheralized through uneven historical, and ongoing contemporary, negotiations in which Indigenous inhabitants of these regions wield certain amounts of power and agency (Figure 37). Using a verb instead of a noun historicizes the ongoing colonial relations that came to exploit these regions for resources whilst entangling them in the economics and politics of larger centres.



*Figure 37: Two Sámi boathouses in Sandnes now protected as cultural heritage, May 2, 2021. Sandnes was predominantly a Sámi fishing and agricultural village located less than 2.5 kilometres away from the Sydvaranger iron mine in Bjørnevattn and down the fjord from the mine waste dumping area of the processing facilities in Kirkenes (see Article D). In recent years, Sandnes has become the centre of new housing development in the region. While economically rising in regional prominence, this has relegated the earlier Sámi heritage to the sidelines. These developments highlight the constant, ongoing negotiations within peripheralized spaces.*

Acts of resource peripheralization can be seen over the *longue durée* in the (sub-)Arctic. It began with fishing and whaling, then proceeded to trapping and forestry, mining, and the pursuit of oil and gas (Avango, Hacquebord, and Wråkberg 2014; Josephson 2014; Suutarinen 2015; Wråkberg 2019, 2). Each of these activities left lasting material traces in the landscape (Figure 38). At the same

time, it is important to remember that local and Indigenous groups and individuals were not, and are not, powerless in these encounters. They have asserted their own self-determination and sovereignty through participation, protest, refusal, and other statements of self-determination against moves to be peripheralized (examples include Genge 2008a; Wheelersburg and Gutsol 2008; Boutet 2012, 2013; Bjørsvik, Nynäs, and Faugli 2013, 194-197; Sandlos and Keeling 2016a; Dannevig and Dale 2018; Horowitz et al. 2018; Andresen, Evjen, and Ryymin 2021, 370-388).



*Figure 38: Material evidence of cycles of extraction of resource peripheries – a bridge along an unfinished access road to a cancelled gas refinery for the Shtokman gas field near the former Soviet fishing village of Teriberka, July 22, 2019.*

Peripheralization is thus always a shifting, contested act that depends on the person, the group, and their positionality. In this thesis and the articles, I talk about peripheries a great deal, but frame them, not as “peripheral”, but as “peripheralized” regions. This serves to signify that there is a core and an observer that are positionally and historically contingent. A great deal of my fieldwork took place within peripheralized regions and, despite my protracted engagements with these places, I was always looking at them from the outside (despite the best phenomenological intentions, see Tilley 2008). The “core” in my case, was a personal one, based at UiT: The Arctic University of Norway in Tromsø. At the same time, the national and regional political and economic cores relative to my case studies lay in places like Oslo, Murmansk, Moscow, St. Petersburg, St. John’s, Montreal, and Ottawa.

Meanwhile, within these peripheralized regions, attempts have been made to reframe the outsider’s gaze of peripheries into zones of contact. Such attempts include Labrador West’s tourism initiative “Gateway Labrador” and the repositioning of Kirkenes as the gateway to the Arctic, with logistical connections to Russia and China (Røyseland and Rø 2010; Dahlberg 2011; Wråkberg 2019). The latter may be shifting again, due to the ongoing war in Ukraine and the imposition of EU sanctions on Russia (Magnani et al. forthcoming).

Within peripheralized areas themselves, there are nested peripheralized areas playing off local cores and local peripheries within multiple, changing, and shifting local and regional scales. These shifts and interactions leave material traces that have drawn much of my attention and included quarries, survey camps, cabin areas, mine wastes, and defunct vestiges of transportation infrastructure (Articles C and D; Venovcevs 2022, 220-232; Venovcevs and Williamson 2022). These too are positional assessments as while they may lie peripheral to single industrial mining towns, leading me to build upon Arn Keeling's concept of "ancillary impacts of resource development" (Article C; Keeling 2010). Such impacts can lie in the centre of Indigenous territories and lifeways such as Innu hunting, camping, and travel grounds, which have become threatened by cabin development (Genge 2008a; Neilsen 2016), or the pastureland for Sámi reindeer herds that repeatedly gets pushed to the margins through ongoing mining expansions (Olsen 2014; Österlin and Raitio 2020; Fohringer et al. 2021).

This discussion of resource peripheralization, cores, positionalities, and shifts in meaning helps to frame the subsequent discussion, where I explore the historical background of the regions in question and then comment on their current state. This is something that could not be covered in sufficient depth in any of my articles. I also pull out the major themes that emerge from these comparisons. Limiting my discussion to one specific activity of peripheralization – mineral extraction – allows me to go deeper into a discussion on the history, major themes, and heritage that resulted from it. Alternative material stories also exist that relate to preceding and succeeding attempts at resource peripheralization as well as the multitudes of ways in which things, materials, and peoples resist such moves (for just a few examples see Pope 2004; Josephson et al. 2013; Josephson 2014; Avango, Hacquebord, and Wråkberg 2014; Avango 2021).

## **4.2 “Norges fjell skal betale Norges gjeld”**

The title for this section comes from a popular slogan from the 1880s to the 1920s – “Norwegian mountains shall pay Norwegian debt”. It captures the high-minded optimism and ambitions in the mining industry that characterized business and politics in Norway during this time, sparking a wave of mining activity across the country and, especially, in the north (Bøe 1986a, 7-8).

Mining in northern Norway dates back to the late 1700s and early 1800s, with mining in Rana in Nordland (Endresen 1986), copper prospecting in Repparfjord (Lund 2015, 74-76), and copper mining in Alta, which during the mid-1800s became the largest community in Finnmark (Drivenes 1986; Berg et al. 2016, 227-228). However, it was not until the late 1800s that the area exploded with speculative mining investment, namely coming from Germany, Sweden, and United States, along with some local capital. Rural areas became flooded with prospectors and engineers who had vastly varying degrees of mining expertise. During this period of 1880 to 1920, dozens of mines were constructed and hundreds of prospecting trenches opened (Bøe 1986a, b). Most of the mines that were built lasted between a few months to a few years before the vagaries of the local geology, the harshness of high mountain conditions, and the inexperience of running mining businesses ended these operations. Today, the collective impact of these smaller attempts at mining remains understudied and undervalued within Norwegian heritage discussions, even though they represent a widespread material legacy of the first, unsuccessful attempt to rapidly industrialize the mostly rural region of northern Norway.

Material that has received a bit more attention, though still relatively overlooked, were the larger, heavily financed industrial operations. These were not necessarily more successful – the iron

mining and processing site at Salangsverket in Sjøvegan (Figure 39), for example, shut down in 1912 after four years of construction and two years of regular operation (Bjørklund and Jensvold 2013; Berg et al. 2016, 287-288). An example of a more long-lasting industrial operation from this period is the Birtavarre copper mines in Kåfjord that collectively ran from 1898 to 1919 (Figure 40). Though relatively successful financially, the processing of sulfuric ores devastated the local ecology while creating what one newspaper report called “an industrial hell” for the workers and actively alienating the predominantly Sámi local community that lived near the shore (Drivenes 1986, 38-40; Berg et al. 2016, 227-236; Lyngstad 2019). The massive investments in facilities such as these correspondingly produces more buildings and therefore more ruins, thus generating its own form of “ruinenlust” that draws in engagement (DeSilvey and Edensor 2012; see also Pétursdóttir 2016). This is not unproblematic as such developments have often been positively framed as “*eventyr*” (“adventures”), glossing over the complex and challenging histories and material legacies left from such operations, including gruelling working conditions, financial loss, Indigenous disenfranchisement, and ecological destruction – themes that are still actual in resource extraction today.



Figure 39: Ruins of the coal fired power plant at Salangsverket, September 19, 2020.

Established in 1906 primarily with German and Swedish investment, the Sydvaranger mine in Kirkenes and Bjørnevatn was a contemporary of Salangsverket, Birtavarre, and dozens of smaller mines across northern Norway. It might have ended up like many of them if not for the geography and the politics that made this corner of the Norwegian state into a valuable geopolitical bastion. Sydvaranger, borrowing the older name of the municipality, Sør-Varanger or “South Varanger”, is in the extreme northeast of Norway, along the present-day border with Russia (Figure 41).

The territory that present-day Sør-Varanger occupies has for thousands of years been the traditional Sámi land. Starting in the Middle Ages, the larger European kingdoms of (Denmark-)Norway and Sweden, and the city state of Novgorod (later Muscovy and the Russian Empire) expanded their influence northward from the west, south, and east (respectively) for missionization



Figure 40: The ruins of the copper processing facilities at Ankerlia in Birtavarre with ground in the foreground scorched by acid rain from mineral processing, August 23, 2020.



Figure 41: Sør-Varanger municipality in relation to Norway and other northern European countries.

and tribute collection from the Indigenous Sámi that consisted of furs and fish (Hansen and Olsen 2004, 152-158). In Varanger in the sixteenth century, the Sámi were taxed by each of the three big powers. While most of the borders in Arctic Europe were established in the mid-eighteenth century, the majority of the Skolt Sámi territory, which includes present-day Sør-Varanger municipality, remained a common area. It was under nominal Russian administrative and ecclesial rule but taxed by both Russia and Denmark-Norway (Hansen and Olsen 2004, 261-282).

This arrangement continued until 1826, when the border between Norway and Russia was established along the Pasvik and Jakobs rivers (*Paččjokk* and *Vue'rjemjokk* in Skolt Sámi, respectively). The Sámi living in the area were told to choose if they were residents of the Norwegian or Russian state (Andresen 1989, 27-45; Andresen, Evjen, and Ryymin 2021, 125). The new border divided the territory of the Pasvik *siida*<sup>47</sup> longitudinally. The Pasvik Skolt Sámi, being of Russian Orthodox faith, chose to relocate to the Russian part of their territory, assuming that they would keep their rights to the entire region. Instead, they were given a six-year transition period after which the Norwegian side would be closed to them. Russia agreed to this arrangement, which embittered the Pasvik Skolt Sámi. The Pasvik Skolt Sámi were allowed to keep their rights to salmon fishing in Bøkfjorden and Jarfjorden, but even these rights were eroded over time. They were finally lost in 1924<sup>48</sup> in a deal made between Norway and Finland, without consulting the Pasvik Skolt Sámi (Andresen 1989). Meanwhile, some Pasvik Skolt Sámi kept returning to set up illegal winter residences, against the wishes of the Norwegian authorities (Farstadvoll, Figenschau, and Olsen 2020, 77-80).

The establishment of the border and its closure to the traditional Pasvik Skolt Sámi settlement, emptied the land for other groups, including the coastal Sámi and Finnish-speaking Kven settlers, who moved into the area in the mid-1800s. The migration of non-Norwegians into Norway's territory worried the government in Oslo so, starting in the 1860s, a major campaign was undertaken to encourage Norwegian settlers to move to Sør-Varanger. Enticements included generous government subsidies and major infrastructure projects that saw the construction of roads, churches, and schools<sup>49</sup> in the region (Grenselandsmuseet n.d.; Wikan 1980). The church in Kirkenes<sup>50</sup>, translated literally to

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<sup>47</sup> *Siida* is both a geographical territory and the group of people who belong to that territory. For a long time, this was the main way in which Sámi society was organized (Andresen 1989, 17).

<sup>48</sup> Complicating this story, from 1920 to 1944, the Petsamo area right across the border from Norway (in what is now Russia) was part of Finland. During this period, the region was subject to intense colonisation and industrialization by the Finnish state, which founded the nickel mining and processing community of Kolosjoki. Today, this is the Russian town of Nikel (Stadius 2016, 2021). Intense Finnish activity in this area was in part what prompted similar colonisation from Norway on its side of the border. The territory was ceded to the Soviet Union as part of Finland's peace agreement after World War II. During all this, the Finnish state generally discounted the rights and presence of the Skolt Sámi, ignoring them outright or seeing them as being doomed to extinction (Andresen 1989, 151-170; Stadius 2021). In 1944, the Skolt Sámi were relocated to Finland – first much further south and then, in 1947, in the vicinity of Inari. To this day, the area contains a large Pasvik Skolt Sámi community, not far from the Norwegian border (Magnani 2016, 2018; Magnani and Magnani 2018).

<sup>49</sup> The first of the assimilationist boarding schools (*internatskoler*) were built in Sør-Varanger which, according to Astri Andresen, Bjørg Evjen, and Teemu Ryymin was not accidental – having a large Sámi and Kven population on the border with Russia was seen as a threat to Norwegian sovereignty (2021, 170).

<sup>50</sup> Before the construction of the church, the area was known as *Akkolagnjargga* (Sámi) or *Pisselvnes* (Norwegian). The church is what gave Kirkenes its modern name.

English as “church headland”, was part of this wave to assert Norwegian authority over an ethnically ambiguous borderland.

Through such actions, the Norwegian state physically materialized the border as a guarded periphery (Figure 42) (see also Magnani et al. forthcoming). More perniciously was the imposition of the Norwegian *fornorskningspolitikk* (“Norwegianization politics”) that implicitly sought to destroy the Sámi and Kven cultures through assimilationist schooling, churches, and landownership laws (Andresen, Evjen, and Ryymin 2021, 157-217). This was especially poignant in Sør-Varanger which, in 1900, had a population that was 43% Finnish, 36% Sámi, and only 21% Norwegian (Lund 2015, 123).



*Figure 42: Materialization of Norwegian borders – King Oscar II Chapel in Grense Jakobselv right across the border to Russia, built in 1869 to reinforce Norway’s territorial claim of the area, July 22, 2020.*

It was in this context that the Norwegian state geologist, Tellef Dahl, discovered iron deposits in 1866 but at 30-35% iron content in the rock, he considered it too poor for serious exploitation (Wikan 2006, 21). That started to change in the succeeding decades as mass mining and magnetic separation of iron from its parent rock became more and more feasible (LeCain 2009). By 1902, extensive prospection of the area began and, in 1905, the Norwegian government granted the company A/S Sydvaranger rights to establish an iron mine on the border with Russia (Wikan 2006, 26-27).

From the beginning, the mine played into Norwegian settlement politics, as having a major mining enterprise would see thousands of people settling on the Norwegian border. Early on, the Norwegian government asked that all employees at the mine be “Norwegian-speaking Norwegian citizens”. This was unattainable, given that there were not enough Norwegian-speaking mining engineers in the entire country to run the operation. A compromise was made to limit worker jobs to



Norwegian and Swedish citizens<sup>51</sup>, with no requirements for engineers. Still, approximately 2/3 of Sydvaranger's workers came from Norway, greatly shifting the demographics in the region (Wikan 2006, 26-28; Lund 2015, 127-128). In 1926, after bankruptcy and financial restructuring, only Norwegian citizens were allowed to be hired as workers and lower-level functionaries (Wikan 2006, 147).

Sydvaranger's facilities came to be divided into the mine in Bjørnevatn and the processing, shipping, and administrative centre in Kirkenes. Two communities arose in these locations through a combination of private initiative and company investment. Mining was done in open pits by blasting rock with dynamite, then loading it with steam shovels onto trains that took the ore to be processed and concentrated in Kirkenes for export – first into iron concentrates or into iron briquettes and, starting in 1969, into iron pellets.

Conflict plagued the first years of the company. There was a small but not insignificant local community when the mine was built, leading to conflicts over reindeer pastureland within the 56 square kilometre area given to Sydvaranger (Wikan 2006, 35-36). At the same time, the dumping of mine waste into Langfjorden (something I discussed in more detail in Article D) caused the first environmental protest in July 1910 (Wikan 2006, 118). Most tumultuously, however, were the conflicts between the company and the vocal union "Nordens Klippe" that saw numerous strikes and lockouts in the first decades of mining activity (Wikan 2006).

World War II brought a new reality to the region. After Norway surrendered to the Germans on June 10, 1940, the community was occupied. Lying near the front lines to the Arctic front of Operation Barbarossa, it hosted 70,000 German soldiers – ten times the civilian population either before or after the war. This occupation has left significant traces on the modern topography of the community and the region (Figure 43). The strategic importance of the mine and the port also exposed the area to intensive Allied air raids that destroyed much of the communities and the mines (Wikan 2006, 184-185). When the area was liberated by the Red Army in October 1944, most of the local population hid in tunnels that had been constructed by mine workers within the territory of the Sydvaranger mine. The tunnels, along with Rørbua, originally a workers' bathhouse, that served as the headquarters of the first post-war civilian Norwegian administration, are protected under Norwegian heritage law (Riksantikvaren 2015; Berg et al. 2016, 292-293). Though, as they are on the territory of a mine, access to them is limited (Figure 44).

Following the destruction brought about by the war, in 1948, the Norwegian parliament decided to rebuild the mine with financing from Marshall Plan money. In reconstructing the Sydvaranger mine, there was a discussion on whether to continue with open pit mining or to move operations underground. The decision, which would have long-lasting consequences, was to continue with open pit mining by procuring the newest and most modern American technology (Wikan 2006, 198). This set the course for path dependency by continuing with open pit mining beyond what could be considered practical or sustainable over a longer term. While the prospect of underground mining was raised several times over the decades, and up to the present day (Wikan 2006, 244; Lund 2015, 141-142; Abarkach 2021b), it has never been implemented. Instead, larger and newer open pit mining equipment has been procured instead.

The resumption of mining at Sydvaranger under government ownership had both economic and strategic considerations. Iron was greatly needed for the post-war reconstruction of Europe and the

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<sup>51</sup> Regardless of primary language, many Finnish speakers managed to receive Norwegian citizenship in order to work in the mines (Wikan 2006, 28).



*Figure 43: Part of the Bunkerbyen (“Bunker City”) behind Kirkenes – WWII anti-aircraft installations. Flat-topped waste rock piles of the Sydvaranger mine can be visible on the horizon, July 25, 2020.*



*Figure 44: Rørbua on the Sydvaranger mine property. Renovated and protected as part designated heritage, it has been closed during every single visit to the site, July 25, 2020.*

mine proved extremely profitable through the 1950s and 60s (Wikan 2006, 203-223). Nonetheless, the old ethnic argument was also put forward about the need to have a large Norwegian community to secure the Norwegian border (Wikan 2006, 194-195), which, after the war was the only place where a NATO country shared a land border with the Soviet Union.

With the reconstruction of Sør-Varanger, Sydvaranger, now under government ownership, moved away from the pre-war-era wooden workers' barracks in favour of well designed, well heated buildings for workers and management (Dancke 1986, 405-408; Wikan 2006, 199). This was in line with the rest of Finnmark, which, having been destroyed by the retreating German army during the war, was rebuilt following modernist spatial and architectural logics to create modest but "timeless" homes (Dancke 1986; Bangstad 2019, 118-120; 2021, 90-92). Rectangular city grids, ample private and public green space, and uniform houses of rationalized home design were the method to create a happy, modern society<sup>52</sup>. These principles can best be seen today in the former workers' row houses in the centre of Kirkenes (Figure 45).



*Figure 45: Workers' houses in Kirkenes, July 18, 2020. These are designed as a cultural environment of national interest and are offered some degree of protection in the municipal plan.*

A "golden age" followed, but the fortunes for Sydvaranger started to turn in the 1970s. This was partly due to the difficulties of opening more areas for mining, due to the expense of clearing the overburden lying over the existing ore reserves. This would have generated more waste rock, which was already numerous and posed issues with storage (something I take up in Article D). In addition,

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<sup>52</sup> This was not necessarily limited to post-war Sør-Varanger or Finnmark. Earlier attempts at "garden city" industrial towns were attempted in other communities built by and for industries in Norway, Europe, and around the world. A shared characteristic in them is corporate paternalism and a break with local economic and architectural traditions (Hage 2003; Mrozowski 2005; Wakeman 2016).

the 1970s saw cheaper iron becoming available from South America, Africa, Australia, and Canada<sup>53</sup> (Wikan 2006, 243-244). In 1976, the same year it ran its first deficit, Sydvaranger transferred the responsibility for housing and services to the municipality which, until that point, administered Kirkenes, Bjørnevatt, and the small community of Hesseng as municipal extensions of itself (Wikan 2006, 247). Issues, however, continued to mount. A long and protracted battle ensued between the union, Nordens Klippe, and the local community on one side, and the Norwegian government on the other. In 1985 the Norwegian government decided to pull out of mine ownership, find new private investors, and diversify the local economy.

The next years were full of uncertainty and instability for the local society, as the mining workforce was downsized from 1,200 to 400 in under a decade. At the same time, the thawing Cold War conditions reduced the need to maintain a populated border outpost and the Norwegian government reoriented its interests toward creating a cultural and infrastructural node to the Arctic (Figure 46 and Figure 47). The town continued to have this image, until the 2022 Russian invasion of Ukraine and subsequent EU/Norwegian sanctions cast uncertainty into that styled image (Røyseland and Rø 2010; Henriksen 2018; Henningsen 2021; Magnani et al. forthcoming).



*Figure 46: Kimek ship wharf, established in 1986 as part of a Norwegian-Finnish partnership aimed at servicing and maintaining Russian ships, is one of the prime material examples of post-1985 economic diversification initiatives in Kirkenes, April 1, 2022.*

Economic restructuring and late attempts at underground mining did not save the mine from shutdown. It officially came to an end on June 19, 1996 and the equipment was sold in a two-day auction on August 13<sup>th</sup> and 14<sup>th</sup>, 1997 (Butcher 1997; Wikan 2006, 261). Nominally, the property was

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<sup>53</sup> In part from western Labrador (see next section) – one of the many smaller ways that my case studies are in dialogue with each other.



*Figure 47: The wayward “World’s Northernmost China Town” Pagoda from 2019 Barents Spektakelet culture festival stashed behind the disused firehall, July 18, 2020. The economic and cultural diversification that occurred after the main period of extractivism brought its own material deposits to the municipality, thereby adding new layers of used, disused, postponed, and wayward things. In the summer of 2022, the statue was donated to Barentshallene and transformed into a gate for a local park – though with all its orientalist elements removed.*

now owned by Varanger Kraft, which was the power subsidiary Sydvaranger established to provide electricity for the mining operation. It could be postulated that at that point the Sydvaranger mine entered what Alfredo González-Ruibal calls “the time of agony” – after the historicist succession of events and the archaeological movement towards ruin (2019, 132). However, a deeper look reveals how a site can be neither and both (Figure 48, Article E).

The shutdown of the Sydvaranger mine also did not mean the end of its history, as numerous attempts were made to either make the mine or its wastes valuable again (explained in detail in Articles D and E). This was realized in 2008 when the mine was restarted under the auspices of the Tschudi Group that saw the mine as part of a broader plan to turn Kirkenes into a major Arctic logistics centre (Tschudi 2010; Tschudi Kirkenes and Sør-Varanger kommune 2011). The new operations, under Northern Iron Limited, lasted for seven years when the mine declared bankruptcy once again. Afterward, Tschudi Group fully purchased the mine and maintained it in a mothballed state since then (Article E).

The former mining region, defined largely by the communities of Kirkenes and Bjørnevatn, that I encountered during my fieldwork is a complex and intermingled result of long intersecting histories of peripheralization, colonisation, and successive periods of resource extraction. The border makes itself physically manifest through things like churches, schools, roads, farms, WWII-era bunkers, and Cold War-era military camps. The Indigenous Sámi heritage, on the other hand, is toned

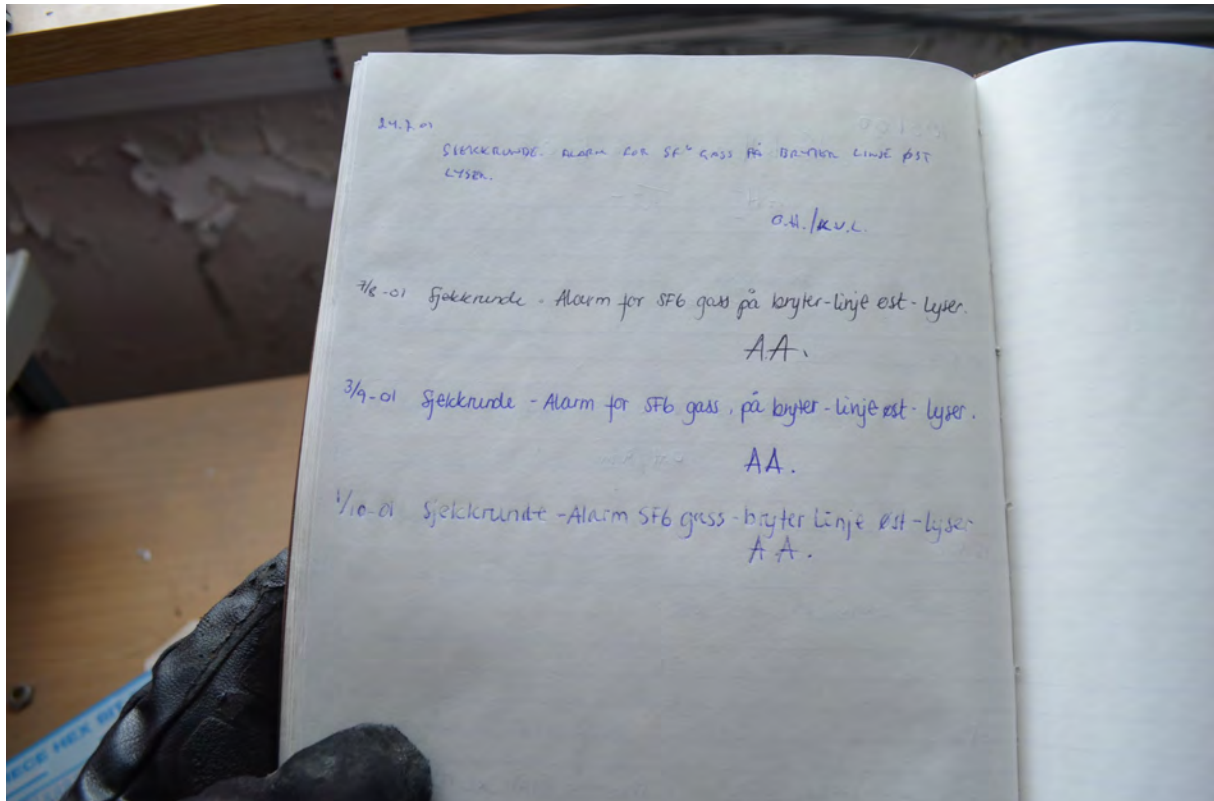


Figure 48: Electrical maintenance logbook, second floor of the Secondary Station building. It shows maintenance checks long after the mine shut down and equipment sold off – a life during and after history (cf. González-Ruibal 2019, 132), May 2, 2021.

down and pushed to the edges<sup>54</sup> (Figure 37). The recent industrial past, meanwhile, is conspicuous and omnipresent in the waste rock piles, the tailings fields, the built environment, and the concentrating plant that is visible from almost every corner of Kirkenes (Figure 49). Initiatives for economic diversification – from later enterprises (Figure 46) to abandoned cultural installations (Figure 47) – add their own layers to the community. Though on closer inspection, the past does not fit neatly into the present. This can be seen in such things as the assemblage of disused and semi-disused buildings and the expansion of parking spaces behind the workers' houses – when these places were built, car ownership was not a common phenomenon (Figure 50).

However, just like the built environment of the town, the idea of a community built around a single big industry has not disappeared. Despite the rhetoric that Kirkenes and Bjørnevatn have successfully deindustrialized, the feelings of loss and strong, but conflicting, emotions around the omnipresent industrial heritage still saturate the community – particularly from the older members, who retain mnemonic connections to the mining past that is reinforced everyday by the things around them (Espíritu 2009; Valestrand 2014; Wråkberg 2019; Abarkach 2021a). This desire to become a little of something that the town was ties into much of the recent, planned, unbuilt, and expected infrastructures that populate the region (examples include KILA in Article D; see also Magnani et al. forthcoming). In critiquing this preoccupation, Gunnar Sætra, the former managing editor of the Sør-

<sup>54</sup> At least, this is true among the standing structures on the industrially colonised borderland. Neiden, approximately 26 km west of Kirkenes, remains the only Skolt Sámi community in Norway and the Indigenous presence is very visible there. It is also visible in the multicultural family names on the tombstones in cemeteries around Sør-Varanger and in the many registered archaeological remains that highlight a deep Indigenous past.



Figure 49: A street in Kirkenes with the Sydvaranger plant on the hill overlooking the town, July 18, 2020.



Figure 50: Expanded car parking behind post-war workers' row houses, May 10, 2021.

Varanger Avis, stated that there are two types of architecture in Sør-Varanger “(post-war) reconstruction architecture and castle in the sky architecture”<sup>55</sup> (Sætra 2022). These reveal that the “past dependency” (Article B) of a resource peripheralized region remains a strong factor in its present imaginary.

### 4.3 Western Labrador and Modern Newfoundland

Similar to Norway in the late nineteenth/early twentieth century, the common theme of mineral extraction to economically diversify historic fishing and hunting territories can be found in Newfoundland and Labrador as well (Figure 51). European presence in Newfoundland, the traditional home of the Beothuk and the Mi’kmaq, dates back to the Norse and the short-lived settlement at L’Anse aux Meadows – where evidence of iron smelting was found, marking the earliest evidence of iron extraction and processing in the province (Ingstad 1977). As the name suggests, Newfoundland was one of the first regions to be actively exploited by Europeans, starting with the whale hunt and the cod fishery in the early 1500s by Basque, Portuguese, Spanish, French, and, later, English sailors (Pope 2004).

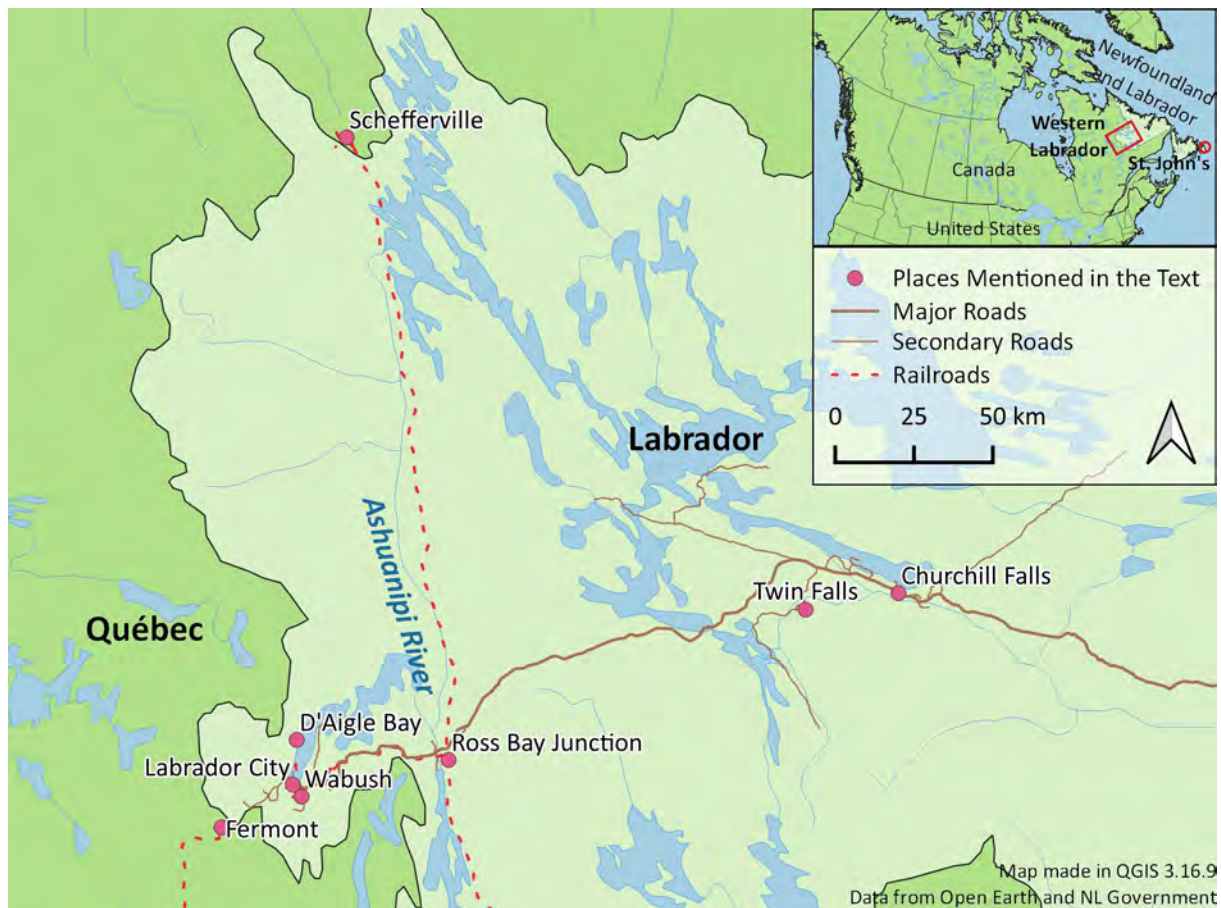


Figure 51: Western Labrador in relation to Québec and the rest of the province of Newfoundland and Labrador.

Permanent settlement on the island occurred slowly. The rocky acidic soils, cool short summers, harsh long winters, and, at times, hostile government policy discouraged permanent

<sup>55</sup> “Gjenreisningsarkitekturen og luftslottarkitekturen.”



settlement (Handcock 1989; Pope 2004, 65-78; Venovcevs 2017; Venovcevs and Gaulton 2018). Exceptions to this did occur, leading to both informal settlements by fishers and more formal colonies and supply stations established by merchants and royal charters. In the case of the latter, these were modelled after styles known in Europe – like the late-medieval style manor house built by Lord Baltimore at the Colony of Avalon in present-day Ferryland (Gaulton 2013; Tuck 2013). In these colonial ventures, the settlers often brought along mining and assaying tools with the expectation that the lands contained mineral wealth (Martin 1998, 6-8). Such optimism was rarely realized and, over the proceeding centuries, Newfoundland developed as a quasi-independent colony of the British empire. Its economy was built almost exclusively on the harvest and export of cod, which was vulnerable to the boom-and-bust cycles of commodity goods and the vagaries of an aquatic ocean resource that grew increasingly overexploited over time. Thus, from its earliest periods of European contact, Newfoundland developed as a resource periphery, tied to the broader European world.

During this time, Labrador, a mainland region of North America located to the northwest of Newfoundland, became a spot to offset some of the hardships faced on the island by serving as another resource frontier for Europeans and Euro-Newfoundlanders – seasonally attracting Newfoundland fishers for summer cod fishery on “the Labrador”. While traditionally the homeland of the Innu and Inuit, the region developed as an ambiguous contested borderland between the French and British empires and, later, their colonial descendants of Québec and Newfoundland (Rompkey 2003; Crompton 2014). The south coast of Labrador was eventually colonised by English speakers from Newfoundland and England, while the British government gave the northern coast to the German Moravian missionaries for Christianization (Rompkey 2003).

Starting in the late 1800s, Newfoundland’s economic base started to shift toward other resources including lumber and minerals. Just like in Norway, there was a boom in optimism, activity, and foreign investment in identifying and exploiting the region’s potential mineral wealth. In this case, too, it very rarely translated in long-term economic operations (Martin 1998).

World War II brought a major shift. Located part way to Europe, both Newfoundland and Labrador became incredibly strategic places for the Allied war effort. They hosted major air and naval bases for men and matériel on their way to Europe, while defending those supply lines with coastal military installations (Zimmerly 1975; Rompkey 2003). This continued into the Cold War with establishment of radar stations as part of the Pine Tree and Mid-Canada Lines – the more-southern and longer-lasting versions of the DEW Line (Hird 2016). The strategic importance and military investment brought unprecedented prosperity to the region, along with the introduction of new, foreign-made, disposable goods (Venovcevs 2018; Brenan 2019). This, along with Newfoundland joining Canada in 1949 and receiving large amounts of federal funding, set the stage for rapid industrialization of western Labrador.

Western Labrador was for millennia the traditional territory of the Innu, with the Ashuanipi River acting as a major travel route (Figure 51) (Brake 2007; Neilsen 2016). Commercial fur trapping in the area became a seasonal occupation for Innu, Inuit, and European trappers starting in the mid-1800s. The presence of iron was documented through the work of Innu guides with the missionary Fr. Louis Babel in 1870 and the geologist A.P. Low in 1892-1895 (Bradbury 1985, 355; Boutet 2012). These deposits were the result of precipitation of colloidal silica that formed iron-rich chert within a shallow marine environment 2.3 billion years ago in a 1,100 km crescent-shaped formation called the Labrador Trough (Rivers and Wardle 1979). The iron content averaged 25-30% and, at the time of discovery, this was viewed as too poor and too remote for commercial exploitation.

This changed in 1945. As mentioned in Section 2.3.1, the so-called “Iron Ore Dilemma” in the United States sparked fears over the perceived exhaustion of high-grade ores, which in turn was

interpreted as a national strategic weakness in case of the next big war. This led to the exploitation of lower-grade, taconite-based ores in the Great Lakes and moves to secure iron ore and other minerals from Arctic and sub-Arctic Canada, which was perceived as politically friendly and geographically closer nation than alternative sources in South America and Africa (Thistle and Langston 2016). Labrador ore suddenly became the centre of attention.

In total, five communities were built on the Labrador Trough – Schefferville (1954), Gagnon (1960), and Fermont (1974) in Québec, and Labrador City (1961) and Wabush (1964) in Labrador. Their creation was spurred on by their respective provincial governments seeking to provide jobs and settle the northern frontiers through offering large American corporate conglomerates generous land and tax incentives (Bradbury 1979, 1983, 1984, 1985; Ponte and Kowal 2015, 2016; Thistle 2016). To reach these regions and connect these communities with the broader market, hundreds of kilometres of railroad were built to connect them to shipping ports. The railroads themselves were massive undertakings. To facilitate their rapid construction, survey camps and runways set up in the middle of the boreal forest, territory that was previously occupied by hunting and trapping Indigenous groups (Venovcevs 2022, 220-227) (Figure 31 and Figure 52).



*Figure 52: Part of the mine survey camp in D'Aigle Bay, Labrador. This camp was occupied between spring and fall of 1958, but left behind lingering material traces – mostly a few tin cans, tarp fragments, and clearings defined by revegetating mountain alders, July 11, 2021.*

Unlike the boom towns of earlier centuries, with architecture characterized by shanties and demographics dominated by young single men, the mining towns in Labrador – and across Canada at this time<sup>56</sup> – sought to follow principles from the Garden City movement and “new town” ideas

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<sup>56</sup> According to Rosemary Wakeman, by 1953 there were 166 single-industry towns in Canada with a total population of 189,000 (2016, 61-62). This number would only grow in the next two decades as

(Buder 1990; Wakeman 2016). The guiding principle was to attract and retain workers and their families by creating a sense of permanence and stability. Thus, this development featured high degree of government and corporate planning as well as investment in engineering firms to design idealised communities for single family living (Schoenauer 1976; Bradbury 1983; White 2004; Keeling 2010). Design elements included curvilinear streets, large open spaces, ample amenities, and distinct separate zoning for housing, commerce, and industry (Figure 53). That is not to say they were identical as each followed slightly different design principles, Labrador City and Wabush, for example, were different from the earlier town of Schefferville, as they had denser town cores with clustered shopping and institutional buildings while Schefferville had a more spread out pattern (Schoenauer 1976, 10).

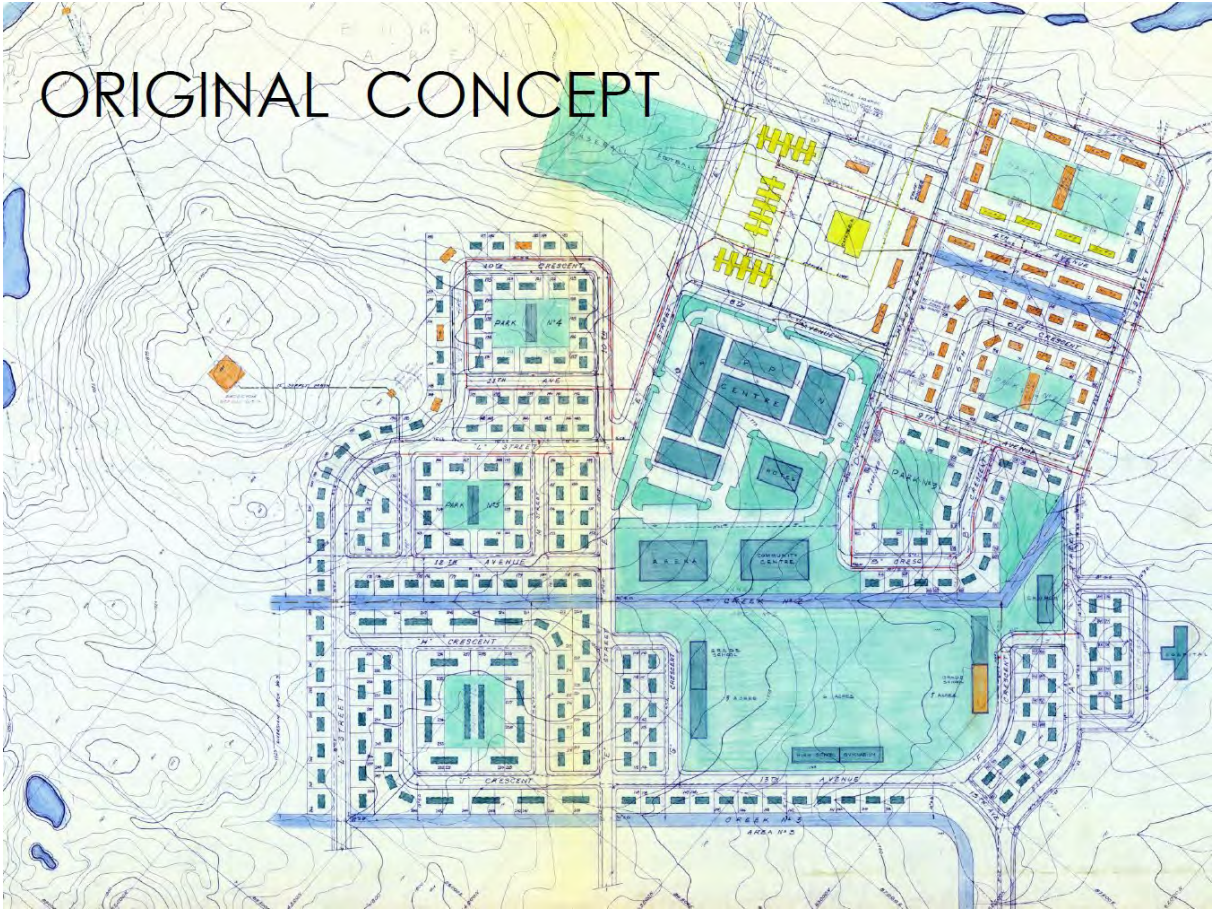


Figure 53: Original concept for the Town of Labrador City (map oriented eastward) with workers' barracks and cafeteria in yellow. In the centre are facilities like an arena, a shopping centre, and schools surrounded by green space. Family homes are on the outskirts. The mine is off the map to the east (Figure from Purves n.d.).

Early media accounts of the communities revelled at Labrador's "instant cities" where everything and everyone was new and yet contained all the conveniences of contemporary life like

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communities like Labrador City and Wabush were built. Imagining land as *terra nullius* was a planner's dream, as it created a perfect template to enact modernist planning principles. In some ways, this echoes what took place in Finnmark after it was destroyed by the retreating German army that literally emptied the land through scorched earth tactics. The towns that were reconstructed were those that existed before the war, but the architecture was different, echoing modernist architectural styles and the Norwegian government's ideas to create "timeless" building forms (Bangstad 2019, 118-120; 2021, 90-92).

stores, schools, hospitals, and recreation areas; where houses were modern, furnished, serviced, and had manicured front lawns; and where the towns appeared to be near-futuristic (The Northern Miner 1962; The Daily News 1963; The Newfoundland Journal of Commerce 1963, 1965; Perlin 1964; Pickards Mather & Co. 1964; Staebler 1965; Le Bastion 1965). Institutional buildings like schools, sports centres, and hospitals followed the high modernist architectural style of the 1950s and 60s in Newfoundland. Modernism sought to reject earlier vernacular styles and remodel the built environment of the province into a new “modern” form (Mellin 2011). For the brief years of construction, Labrador City and Wabush, lying 1,170 kilometres from the provincial capital of St. John’s, were the centres of experimentation for a new modern Newfoundland. They represented the ideal image of an affluent, contemporary, and suburban province that was vastly different from the ones that came before (Mellin 2011, 4-11).

Despite the wishes of the town planners, however, western Labrador was not *terra nullius* and its development violently overrode the pre-existing people and things. Most poignantly, this can be seen at Indian Point – a small peninsula on Little Wabush Lake in Labrador City. Oral testimony from the area indicates that an Innu community occupied the area at the time that mining developments started and may have consisted of between one and five families (Hynes 1990, 17; Maher 1992, 6; Marcil and Greene 1992, 9-11; Spracklin 1993; McLean 1995, 56). By 1969, they were told to leave but the traces of the Innu cabins lingered for at least a decade. In the 1970s, a garage was built on the property which resulted in soil contamination (Stantec 2010, 2011). As part of remediation, the area was capped by fill and three ballfields were built on Indian Point (Figure 54). While I did not discover any remains of the Innu settlement during my frequent visits to the site, I did not see any evidence that they were outright destroyed. Instead, in all probability the Indigenous past of Labrador City was buried under a layer of fill but not entirely eliminated (Venovcevs 2022, 232-234).

Elsewhere in Labrador, the provincial and federal governments were gradually eroding Innu autonomy in the region. After being mostly left alone in the Labrador interior through the 1940s, they became quickly re-entangled into the colonial world through the activities of European prospectors and surveyors after the war. The construction of the QNS&L Railway benefited from Innu porters and labourers while the mines and – especially – the hydroelectric reservoirs eroded Innu access to their traditional hunting and trapping grounds (Wadden 2001; Loring et al. 2003; Boutet 2013). This culminated in a series of coercive and subversive actions by the provincial and Canadian governments that circumscribed much of the traditional Innu way of life and forcing them to resettle – near Schefferville on the Québec side of the border north of Labrador West, and in Sheshatshiu in central Labrador (Tanner 1993, 89-93; Boutet 2012, 97-120).

In their place, Labrador started to become materiality transformed following the spatial logics of modernism. This not only included “Labrador’s instant cities” (Horwood 1965) but also the modes of how people travelled through the region, thus transforming people’s embodied relations with the landscape. This also included the Innu who incorporated the railroad into their mixed livelihood patterns (Boutet 2012, 84-97). Trains were used to ship people, goods, and cars into the mining communities while shipping out the ore. For personal trips, subsidized air travel was very popular. At the same time, all single industrial communities were designed in the style of the post-war car-dependent suburbs further south – even though highway connection only came decades later.

Despite all the possible conveniences of North American mobility, the feeling of isolation was (and remains) a common complaint among residents (Horwood 1965; Royal Commission on Labrador 1974a, 1125-1165; Decks Awash 1976; Various 1979; Brown 1984; Hammond 2010). Material evidence of ways to respond to isolation is visible in and around the communities. They show successive approaches to overcome the physical reality of distance as a necessity to conquer the space



Figure 54: Indian Point, Labrador City – during Innu occupation in the early 1960s (left), after Innu occupation in 1969 (centre), and today (right).

with technology<sup>57</sup>. These include the railroads and airstrips as well as the Trans-Labrador Highway, the first parts of which were built in the 1970s but were only fully paved to Newfoundland in 2022 and remain partially unpaved on the Québec side of the border (Figure 55). These also include a network of radio and cell phone towers, TV receptors, mobile boosters, satellite dishes, and buried internet cables – all of which highlight the perpetual work of battling isolation and connecting western Labrador to the rest of Canada (Figure 56).

At the same time, individualized modes of connection to the outside have proliferated with motorized vehicles. This is clearly represented in garages within Labrador City and Wabush. When the first sections of the communities were developed in the 1960s, planners designed communal garages behind housing lots, with space for one car per every two households. In Labrador City, this design was quickly abandoned as people preferred to walk less on the cold and snowy winter days. Subsequently, car ownership multiplied and driveways were built on the front yards (Figure 57). In Wabush, on the other hand, garages have lingered into the present, but they create their own challenges. In terms of separate ownership, garages were too few and not linked to home ownership; in terms of space, cars are bigger, households own more of them; and there has been a general

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<sup>57</sup> In his work on the Chaco, Gastón Gordillo (2014) refers to this compression of space-time as the need to create plasticity in geography through new infrastructure. I see similar events playing out in Labrador through trains and airplanes, through media like radio, television, and internet, and through highways. Each new technological innovation leaves its own material traces in the landscape while the heaviness of distance has a way of reasserting itself when those material networks break down (as discussed in Section 2.3.2).



*Figure 55: The Trans-Labrador Highway between Happy Valley-Goose Bay and Labrador City/Wabush, 524 kilometers of paved road with only the community of Churchill Falls (a company town with a population of around 700) in the middle, May 18, 2019.*



*Figure 56: Cell phone tower outside of Labrador City, the foundation of an earlier communications tower is visible on the right, August 18, 2019.*



*Figure 57: Trace of a former garage, Labrador City, June 18, 2021.*

proliferation of other recreational vehicles like snowmobiles, ATVs, and private boats. This has led to jumbles of makeshift and semi-permanent sheds in backyard communal spaces (Figure 58 and Figure 59). With this example, one can see how new town planning logics and modernist design principles became subverted over time. Communities built for 1960s-era material assemblages struggle under the multiplicity of things today that transform the urban fabric away from those envisioned by their planners.

Similar deviations from modernist planning principles can be seen in how the built environments evolved over time. Labrador City and Wabush developed stochastically, with streets or sections of streets being put up simultaneously linked to demands for labour that drove up housing construction. Old streets were never revisited for redevelopment and instead new sections of town were built. The expansion of the towns could be seen by the boom-and-bust cycles within the iron industry, generated thousands of kilometres away from Labrador West. It also lies in dialogue with what was happening in Sør-Varanger – namely, the rapid growth of Labrador West in the 1970s saw the decline at Sydvaranger, while the boom in the late 2000s/early 2010s can be seen at both places, with the influx of investment driving employment in the region before precipitating a dramatic drop.

Such stochastic developments in Labrador West have created a horizontal stratigraphy where the history of the town could be seen in the different housing forms (Figure 60 and Figure 61). Early architecture in both Labrador City and Wabush was built on site, often sourcing local materials like aggregates for fill, gravel, and lawn base directly from the region (see the discussion on the Wabush sand pits in Article C). Later iterations of housing were prefabricated homes that were shipped in by rail and put together on site – both types created a limited variety of forms and a housing stock of the same age.

The last boom period, from the late 2000s to 2015 saw the construction of a subdivision on the western edge of Labrador City. The ground was cleared and levelled, roads and utilities were put in, curb cuts were set, and a few houses were constructed (Figure 62). When the bust came, the money for



*Figure 58: An original 1960s garage in Wabush with original cedar plank siding that matched many of the original homes, July 13, 2021.*



*Figure 59: Proliferation of thing storage in Wabush, May 24, 2019.*





Figure 60: 1960s duplexes in Wabush, July 13, 2021.



Figure 61: Early 1970s preassembled homes in Wabush, July 14, 2021.



*Figure 62: Unfinished subdivision in Labrador City, May 24, 2019.*

new housing ended almost overnight, leaving the subdivision in a permanent state of postponement<sup>58</sup> (also see Article E). When I surveyed this place the first time in 2019, one of the owners came out to talk to me to see what I was doing. He thought I was from the town but, to his enormous disappointment, I informed him that I was an archaeologist. He told me how he was waiting for the development to be finished since the underpressurised pipes were prone to freezing and breaking in the winter while the cleared land was a popular spot for kids on motorized recreational vehicles, making it extremely loud in both summer and winter. He lived in expectation of a future to materialize out of market conditions determined by a globalized resource economy.

The example of the unfinished subdivision is just the most recent example of the material tensions that arise around communities tied to the extraction and processing of a single resource. Since the construction period of the early 1960s, the demand for labour outstripped the supply of housing. This was compensated through reliance on trailer homes. Ironically, trailers were originally developed to serve American middle class mobility but have since then attained a certain pariah status as homes for America's less privileged. They are also seen as quick, semi-permanent housing in distant, impermanent professions like those that characterize the resource-extraction industry (Caraher et al. 2017). Built for summer, they also require winterization in harsh climates (Caraher et al. 2017, 276-278). In Labrador, winterization was achieved from heavily-discounted electricity from mining company-built hydroelectric plants (Venovcevs and Williamson 2022).

Trailer camp neighbourhoods were present both in Labrador City and Wabush at the start of construction, but efforts were made to replace these temporary accommodations with permanent homes. This was partially successful in Labrador City, where the first trailer camp disappeared by

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<sup>58</sup> Another interesting case study is the Jean Lake subdivision in Wabush with roads/utilities installed in the 1970s and houses only built in the 2010s; I discuss this in Venovcevs (2022, 238).

1970. However, a boom in construction associated with the expansion of the pellet plant called for more workers. This led to 511 mobile homes being built in 1975 in a completely separate area of town called Harrie Lake (Geren and McCullough 1990, 321; Gallant 1992, 24-25; Maher 1992, 11-12). This was a whole new region of town that briefly had its own shop, school, church, and playground. With narrower roads, no sidewalks, and smaller lots, Harrie Lake represented a complete reversal of the new town ideas that characterized the rest of the community.

This temporary solution, however, became permanent as the demand for housing never subsided in the 47 years since its initial construction. Only recently have banks been willing to offer a mortgage for homes in Harrie Lake and, to this day, the locals refer to the subdivision as “the trailer park”, even though the place attained certain degrees of permanence and affluence. In fact, since its inception, the subdivision has expanded with new streets and new rows of trailers being added. Meanwhile, homes on the older streets were modernized. Old trailers were removed and new ones put in, creating a multitemporal fabric that is very different from the earlier part of the community. The older trailers occasionally end up as cabins in the woods around western Labrador (Venovcevs 2022, 228-229). Limits on storage and living space, imposed by the tight nature of mobile homes, also lead to an explosion of vernacular styles, as people sought to modify their standardized homes to make them more spacious (Figure 63 and Figure 64).



*Figure 63: Variety of homes in Harrie Lake subdivision, Labrador City, May 23, 2019.*

As such, Harrie Lake mirrors the observations posited by Bjørnar Olsen and Svetlana Vinogradova (2019, 7-8). Much like Soviet Khrushchyovkas that had a life expectancy of 25-30 years, only to be “fossilized as a seemingly permanent option” (Olsen and Vinogradova 2019, 7), the trailers in Harrie Lake and a similar, smaller, trailer park in Wabush are temporary housing solutions made permanent, affecting the mental geography of the people who reside in these communities. However, their materiality – size, shape, mobility, construction material, etc. – makes them much easier to modify, transform, and move than concrete Soviet panel block apartments in Russia.



*Figure 64: Trailer home with a side room expansion, shed in the back, overhang protected area, and a massive garage with an upstairs living area, Harrie Lake subdivision, Labrador City, June 28, 2021.*

A major disruption in western Labrador's history came in the early 1980s with a crash in the prices of iron ore. Just as this same event contributed to government disinvestment in Sydvaranger, the corporate paternalism in western Labrador was greatly destabilized. Mining in towns on the Québec side of the border, like Schefferville and Gagnon, were shut down; operations in Labrador City and Wabush were greatly curtailed. Thousands of employees were laid off, leading to a massive exodus from the region. The population went from a high of 15,000 in 1976 to 9,000 in 2006 (Bradbury 1979, 1983, 1984, 1985; Mulroney 1983; Geren and McCullough 1990, 326-328).

Despite this difficult period, mining in Labrador City and Wabush did not cease and continues to this day (with a brief shutdown in Wabush from 2014 to 2018 following the crash that led to the last shutdown of the Sydvaranger mine). However, the relationship between the community and the mining industry has changed. Whereas the relationship in the early 1960s was built upon new town principles and corporate paternalism, today, the relationship between the communities and the mines is often uneasy. Rather than being part of a permanent settled northern frontier, they are linked to the global market, "riding the resource roller-coaster" (Wilson 2004; Rodon, Keeling, and Boutet 2021). Labour-saving technologies and flexible workforce practices dominate mining while minimizing opportunities within the communities (Thistle 2016; Irrázaval and Arias-Loyola 2021a, 8-9). This has led to the addition of a new set of urban forms to the townscapes of Labrador City and Wabush – namely, housing for fly-in, fly-out workers employed by the mining companies and the large variety of contractors. Although very different, these large apartment complexes look more similar to (post-)Soviet apartment blocks on the Kola Peninsula than to the single-family homes that characterize the early settlement stage of Labrador West (Figure 65).

From this historical overview, one can see how Labrador City and Wabush are prime examples of mid-century North American modernism, as enacted in the Canadian province of Newfoundland and Labrador, and what became of it – communities with single-family homes, front



Figure 65: Fly-in, fly-out worker residences, Labrador City, August 20, 2019.

lawns, and car-dependent suburban design that overrode, or perhaps rather consumed, the land that came before them. They were one attempt out of hundreds to create ideal communities in the north, a colonised region based on resource extraction (Piper 2009; Ponte and Kowal 2015). In so doing, the communities came to look no different from suburbs in more southern, more populated regions of Canada. To quote Rosemary Wakeman’s work on new towns – “if you’ve seen one new town, you’ve seen them all” (2016, 10).

It is perhaps for this reason that, on multiple occasions during my fieldwork, several people have asked if I considered researching the town of Fermont instead. Fermont, lying on the Québec side of the border, 25 kilometres from Labrador City, was a later iron mining community built in 1974. Its most iconic feature is *Le Mur-écran*, “The Wall”, a multistorey building that houses public amenities including the grocery store, liquor store, shops, restaurant, pub, police station, school, swimming pool, municipal office, hotel, and temporary workers’ accommodations, all while blocking the northern winds from the residential area of single-family homes and residential roads specifically designed to calm traffic (Figure 66). Fermont is the quintessential artifact of Québec’s mid-century colonial ambitions in the northern reaches of its territory. It is also the only representative of its kind, as the crisis in the iron ore market and a shift to flexible labour arrangements came only a few years after it was completed (Ponte and Kowal 2015). It has been subjected to multiple studies over the years due to its unique urban design (Schoenauer 1976; Ponte and Kowal 2015, 2016; Gudd and Pons Braley 2020). On first encounter, Fermont is remarkably striking compared to the everyday dullness of Labrador City and Wabush.

This is why I chose to focus on Labrador City and Wabush instead, precisely because of the original encounter where they appeared so ordinary and banal – a placeless middle class, Canadian suburbia transplanted into the middle of the boreal forest. The communities are “significantly insignificant” (Olsen and Vinogradova 2019) exactly because they portray a former period of transplanting North American new town planning models for industrial settlement into northern

Indigenous homelands. They treated an imagined *terra nullius* as a testing ground for new town planning ideas. Through redeveloping those regions with new buildings, facilities, and infrastructures, they were meant to create feelings of familiarity for workers in harsh climates while also serving as propaganda pieces for their respective governments to showcase the wonders of progress and modernity. These developments were short-lived as the companies' need for labour, first rapid – then flexible, overshadowed early high-minded planning ambitions. As such, one can think of places like Labrador City and Wabush as aged utopias – vestiges of grand designs and bold planning that now have to contend with a life dependent upon the vagaries of commodity prices from a single resource and a corporate climate interested in automation and flexible labour practices.



Figure 66: “The Wall” in Fermont, May 19, 2019.

#### 4.4 Kola Peninsula and the Soviet North

My last case study is the Kola Peninsula, specifically focusing on the town of Monchegorsk. The Kola Peninsula takes up most of the present-day Murmansk Oblast and is located in the northwest corner of Russia, near the border with Norway (Figure 67). As such, the Kola shares many of the same early historical trends as Finnmark to the west. The biggest difference is that it remained relatively unsettled by Russia until the Soviet period, when it mirrored and greatly exceeded the rapid development seen in Sør-Varanger and on the Labrador Peninsula.

Much like in Norway, Russia's influence spread northward during the Middle Ages. Traders, settlers, and fishers from the Russian city state of Novgorod travelled along the White Sea coast from Arkhangelsk. Their interactions with the local Indigenous people were limited to trade and tribute taking for their principdom; Muscovy, a rival city state and the predecessor of modern Russia, later overtook these obligations in the late 1400s (Hansen and Olsen 2004, 155-161).

The next century witnessed an influx of Orthodox missionaries to the Kola, with monasteries being established around the peninsula including into territories claimed by the Sweden and Denmark-

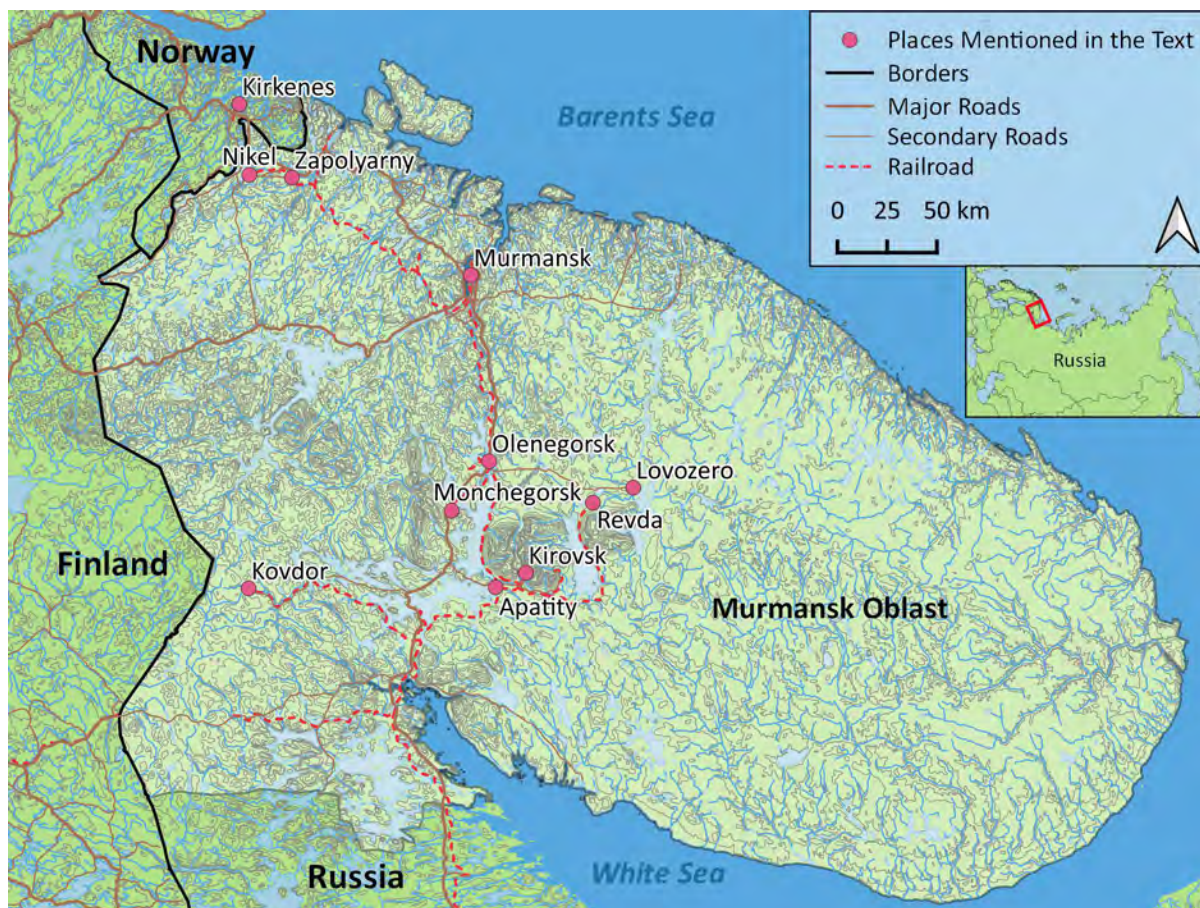


Figure 67: Murmansk Oblast within Russia. The Kola Peninsula is delineated from the northwest corner of the White Sea northward toward the Barents Sea and thus encompasses most of the Murmansk Oblast.

Norway. The Orthodox Church helped to establish Russian hegemony over the peninsula by acting as a religious force, as a resource extractor<sup>59</sup>, and as a tribute collector for the Russian state (Hansen and Olsen 2004, 221-222; 238-240; Wheelersburg and Gutsol 2008, 82). However, until the late 1800s, Sámi livelihoods on the Kola Peninsula remained largely unaffected, consisting of a mixture of fishing, hunting, and small-scale reindeer husbandry. So long as the tribute was paid, the Russian Empire maintained an ambivalent attitude to the region and to the people who lived there (Gutsol, Vinogradova, and Samorukova 2007, 16-23; Wheelersburg and Gutsol 2008, 83-86; Vinogradova 2016, 84-85), an approach similar to imperial Russia's Siberian provinces (Bruno 2016, 33-34). The glaring exception to this was the establishment of the Russian-Norwegian border through traditional Skolt Sámi territory, discussed in Section 4.2.

Things started to change in the second half of the nineteenth century with calls by Russian politicians and intelligentsia to develop the Kola Peninsula in a similar manner to that of neighbouring Finnmark. Laws were passed to encourage settlement but had limited effect. The Russians, Finns, and Norwegians who moved into the region primarily settled along the coast (Bruno 2016, 34-37). In the 1880s, the migration of some Komi and Nenets families from the eastern side of the White Sea to the Kola Peninsula proved to be a major disruptive event for the Sámi. The Komi, while numerically limited, had much larger herds of up to 5,000 animals per family group, which impinged upon traditional Sámi grazing lands. At the same time, their methods of raising reindeer were seen as more

<sup>59</sup> Primarily salt processing and salmon fishing.

“efficient” by the Tsarist and, later, the Soviet administrations, and were thus emulated in the reindeer collective farms (Gutsol, Vinogradova, and Samorukova 2007, 24-25; Allemann 2013, 37-41).

However, it was infrastructure that brought the initial long-lasting transformations to the region. The construction of the telegraph line from Kandalaksha, on the southern Kola, to present-day Murmansk in the late 1800s was the first piece of infrastructure to impact Indigenous residents in the interior of the peninsula. Some of them even shifted their settlement patterns to provide commercial transport for the telegraph stations (Wheelersburg and Gutsol 2008, 84-86). At the same time, Russian administrators and bureaucrats started to advocate for the construction of the railroad northward to build and connect an ice-free port in the Arctic while encouraging colonisation of the region’s interior. This did not start until the First World War when the blockaded Russian Baltic Sea ports demonstrated the need for an alternative shipping route for Allied supplies. The railroad was built at record-breaking speed – in 16 months – by throwing tens of thousands of workers together with tens of thousands more POWs and Russian army deserters to build a railroad through the forests and marshes from Petrozavodsk in the south to the new town of Romanov-na-Murmane (later renamed Murmansk) on the coast of the Barents Sea in the north (Bruno 2016, 44-57). Later, the Soviet regime would replicate on a national scale this massive force mobilization of men to achieve industrial goals (Bruno 2016, 26-27). This, in addition to the adaptation of Komi strategies of reindeer husbandry on the Kola highlights the continuation of Tsarist managerial legacies in the Soviet Union.

For their part, the Sámi negotiated this new development, first, by working as porters, labourers, and shopkeepers during these construction projects and then, later, by shifting their settlements to take advantage of the transportation links and the people that it brought (Wheelersburg and Gutsol 2008, 89-90; Bruno 2016, 50-51). At the same time, the railroad represented the first major barrier to reindeer herding (Allemann 2013, 41). These interactions highlight how the Indigenous people, while peripheralized, minoritized, and, later, resettled in their own native territory did not act as unwitting victims of colonisation but rather interacted with the newcomers and their infrastructure in a variety of nuanced and complex ways<sup>60</sup>.

A few months after the railroad was constructed in late 1916, the Russian monarchy was deposed, first by a liberal government and then by the Bolsheviks. Following the Russian Civil War, the new communist state inherited the Kola Peninsula along with its new railroad. While the new regime was eager to get rid of much of the past, it eagerly adapted the legacies of Tsarist infrastructures, like the railroad, to serve as the staging ground for rapid transformation of the region.

Whereas limited geological studies were carried out on the Kola Peninsula in Tsarist times, they multiplied exponentially in the first few decades of Soviet rule (Bolotova 2014, 42-43). As Soviet geologists scoured the region for valuable resources, they quickly identified one area that would serve

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<sup>60</sup> Jean-Sébastien Boutet made similar observations about the Innu-Naskapi in western Labrador in relation to development of the Québec North Shore and Labrador Railroad and the town of Schefferville (2012, 2013). In fact, it is because of the Innu that Schefferville survived as a community after the mining stopped in 1986. The Québec North Shore and Labrador Railroad north of Ross Bay Junction (where the railroad splits to go to Labrador City and Wabush) was taken over by three Innu-Naskapi nations. This made it the first railway in the world to be owned and operated by Indigenous peoples (Boutet 2012, 263-264; Transport Ferroviaire Tshiuéti Inc. 2018). Coincidentally, the railway follows a traditional Innu travel route (highly recommended in all this is Caroline Monnet’s beautiful documentary short film *Tshiuéti* (2016), available here – <https://vimeo.com/409546824>). The cases of these railroads highlight the complex, non-linear relationships people have with infrastructures over time and space.



as a proving ground for subsequent Soviet development of the peninsula – a southern portion of the Khibiny Mountains that had sizable apatite reserves, a mineral that could be processed into phosphorous fertilizers. The development of the Apatit trust in the early 1930s was brutal. It required tens of thousands of volunteers and tens of thousands more “special settlers” – repressed peasants, mostly from Ukraine and southern portions of Russia, who were arrested and forcefully resettled to provide cheap labour for early Soviet industrial ambitions (Bruno 2010; 2016, 73-120; Josephson 2014, 147-149). Much early mining was done with hand tools and living conditions were abysmal, but the work ultimately established the mine as well as the mining town of Khibinogorsk (later renamed to Kirovsk) (Figure 68).



*Figure 68: Excavated side of a mountain above the village Kukisvumchorr, mined out by hand by the first labourers in Kirovsk region, July 25, 2019.*

The story of the Apatit trust and the town of Kirovsk, the Murmansk railway, and, later, the Severonickel plant and the town of Monchegorsk highlights a major difference between developments on the Kola compared to those discussed in western Labrador and Sør-Varanger. Whereas Canada and Norway had access to technology and masses of machinery (often supplied by the United States), Soviet Russia primarily had masses of people. Its ability and commitment to mobilize both willing and non-willing labourers paved the way for much of the early twentieth century towns and enterprises that still exist within the country<sup>61</sup>.

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<sup>61</sup> A similar observation has been made by Kate Brown (2013) in her discussion of the reliance on gulag labour to construct Soviet Union’s first plutonium enrichment plant in Ozersk. The most technologically advanced facility in Europe in the late 1940s was built with shovels, picks, and wheelbarrows – tools that would not have looked out of place in the early Iron Age. This echoes

Kirovsk provided the cornerstone for industrial development on the Kola Peninsula. It showed that rapid development of large-scale industry was feasible in the region, thereby paving the way for more development (Bruno 2016, 114). Kirovsk was also the region's first monotown, setting the template for what was to come across the Kola Peninsula.

A monotown (*monogorod* or *моногород*, or alternatively referred to by some scholars as a mono-industrial town), is the Soviet alternative to the company towns in the West and were reproduced on a more massive scale in terms of size and quantity. Just like elsewhere, monotowns in the Soviet Union were built by and for industrial enterprises (owned by the state) to house workers who would operate one or several related industries. It was asserted that monotowns were categorically different from chaotic bourgeois towns of capitalist nations because monotowns were the most rational way to extract resources, manufacture goods, and, ultimately, create the “New Socialist Man” that would be suited to a socialist way of life (Josephson 2014, 238-239; Wakeman 2016, 66-68; see also Buchli 1999, 23-62). Thousands of monotowns were built in the Soviet Union and the broader Eastern Bloc. Each performed one or a series of related roles and was interlocked with other monotowns in the region and nation to function as a single unified system.

Despite high-minded ambitions to build happy, productive cities for new socialist citizens, it was rarely realized. In part, as Andis Cinis, Marija Drémaitè, and Mart Kalm have pointed out (2008), monotowns were meant to fulfil national strategic targets first. Economic and social infrastructure for the benefit of the people was not a priority. On the edges of the Soviet Union, they also acted as instruments for settlement and integration by importing Russian-speaking workers to peripheralized regions (Cinis, Drémaitè, and Kalm 2008; see also Storm 2014, 75-99). Ambitions for monotowns were also curtailed by the use of forced labour (particularly in the Stalin period), inefficient management, brutal production quotas, second and third-rate resources used in construction, and planning by remote teams of specialists who were unfamiliar with the local environment and conditions – drawbacks that were most visible in early projects like Kirovsk and Magnitogorsk (Kotkin 1997; Bruno 2010; 2016, 89-97; Kalemeneva 2019). It was only in the second half of the twentieth century that monotowns started to live up to some of their original promise by offering better paying jobs, better housing, better services, better selection of goods, and better planning. This was due in part to the decline of forced labour systems and the realization that proper incentives needed to be offered to create stable and well-functioning societies in distant regions with strategically-vital industries (Brown 2013; Wakeman 2016, 174-187; Kalemeneva 2019).

Even though Soviet planners proclaimed the monotown to be a novel invention of socialism, they in fact borrowed<sup>62</sup> ideas from paternalistic company towns in the United States, along with many

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Alfredo González-Ruibal's argument (2019, 127-131) that the present is characterized by heterochrony, where materials and technologies from multiple time periods are jammed together to create the present. Nowhere in my case studies is this more apparent than in Soviet Russia.

<sup>62</sup> Kate Brown (2013) demonstrates how the plutonium enrichment town of Ozersk took from the United States, not just methods of how to enrich plutonium and make an atom bomb, but also knowledge on how to organize a plutonium-enrichment society. By learning about the plutonium enrichment plant in Richland, Washington via espionage, the Soviet leadership understood that it could ensure loyalty by providing the town's residents with better services than much of the country. The model was then exported to other closed, or strategically vital, communities around the country. Likewise, the famous iron producing monotown of Magnitogorsk, and its associated plant was built on the model of Gary, Indiana with the help of Arthur McKee and Co. of Cleveland, Ohio (Kotkin 1997,

of the Garden City ideals and new town principles used to design them. Recognizing the new Soviet city as a highly stratified place, sociologist Alla Bolotova (2012, 2014) divided it into three distinct zones – industry, city, and non-city (i.e. “nature” or *priroda*). The latter being an incredibly complicated place that includes forests, lakes, and rivers but also human-built objects like *dachas* (recreation homes) (Bolotova 2012, 662-665), along with access roads, disused industries, and other vestiges of industrial development (see Article C). As for the city, the initial architecture could be haphazard and sometimes dangerous, consisting of poorly insulated tents, sod houses, or *shalmany* (structures built of boards and roofing fabric) (Bruno 2010). Later, wooden barracks or dormitories were built. Last came the permanent (and expensive) grand structures of socialist realism, which were prioritized for the Soviet elites. It was not until the late 1950s that Soviet mass housing began in earnest, creating the well-known cityscapes of mass-produced panel-block apartments made from prefabricated materials (Khrushchev 1954; Reid 2009; Meuser and Zadorin 2015).

Returning to the discussion of early twentieth century developments on the Kola Peninsula and its effects on its Indigenous inhabitants, the attitude of the Soviet state toward the Sámi changed drastically in the first decades of communist rule. After securing power in the 1920s, there was an attitude of patronising indoctrination – while reindeer herds were collectivized, a written Cyrillic language was developed for the Sámi and the semi-nomadic lifestyle was accepted to the point of establishing “Red Chumi”, cultural/ideological institutions adapted for the semi-nomadic form of life (Vinogradova 2016, 85-87). This approach shifted to a much harder line under Stalin, with forced (re-)settlement, curtailment of semi-migratory life, elimination of private reindeer, and arrest and/or execution of those who resisted (Allemann 2013, 72-77; Vinogradova 2016, 87-88). Following World War II and a brief period after where Sámi communities were left untouched (Vinogradova 2016, 89-90), resettlement began in earnest with Sámi communities being forced to move, sometimes several times, to meet the needs of the military and industrial construction, as well as to develop even larger collective farms. Most Sámi were ultimately forced to settle in the town of Lovozero (*Lujavv’r*) along with Komi, Nenets, and Russians (Gutsol, Vinogradova, and Samorukova 2007, 27-43; Vinogradova 2016, 90-91; Andresen, Evjen, and Ryymin 2021, 399-403). As argued by Lukas Allemann, this displacement was an intrinsic part of Stalinist terror and collectivization; it consolidated the population and emptied the land for Soviet industrial projects (Allemann 2020, 289-290).

It is in this context that Monchegorsk emerged. Monchegorsk is located on the shores of Lake Imandra, northwest of the Khibiny Mountains, and was home to the Ekostrovski and Babinski pogosts<sup>63</sup>. The construction of the telegraph line, and then the railroad, affected their settlement patterns and movement through the area, although they remained as coherent settlement units until approximately the 1940s (Wheelersburg and Gutsol 2008). The area that would become Monchegorsk itself was occupied by the Arhipov family from the Ekostrovski pogost. They played a critical role during the mineral exploration of the area – acting as guides, hosts, porters, and even saving one expedition from near-certain death (Лукичев 1993, 8-11; Позняков 1999, 10-18; Bruno 2016, 177). It is around their houses that the first industrial settlement began to coalesce in what is now the southern end of Monchegorsk (Дежкина 2015, 4-10). Despite the Sámi family’s importance to the settlement of

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42-54). Thus, modernist industrial communities in the Soviet Union developed in concert with those in the West, while often exceeding them in scale and scope.

<sup>63</sup> *Pogost* is a Sámi community organization that is common on the Kola Peninsula. It is similar to the *siida* used elsewhere. A *pogost* was also a term for a village where the Sámi would congregate in the winter (Wheelersburg and Gutsol 2008).

the region, they are only mentioned in local histories to emphasize how a modern new Soviet city replaced the traditional Sámi presence (Лукичев 1993, 48; Позняков 1999, 18). The construction of Monchegorsk, as well as the social upheaval caused by forced resettlement and collectivization, scattered the Sámi from Ekostrovski and Babinski. They were forced to relocate to Lovozero or assimilate within the communities of Monchegorsk, Kirovsk, and Apatity (Wheelersburg and Gutsol 2008; Allemann 2013, 84-86). The only sign that Monchegorsk was Sámi land is in the name – *monche* is the local Sámi word for beautiful.

The first scientific Russian expeditions arrived in the area in 1922, followed by an accelerating rate of expeditions from 1929 onward (Лукичев 1993, 7-20; Позняков 1999, 7-19). Their interest was nickel, an anti-corrosive alloy needed for military applications. In the 1930s, 98% of the world's nickel was supplied by Canada (Bruno 2016, 185-191). It is for this reason that in April 1935, before the full extent and nature of the ore deposits were known, the People's Commissar of Heavy Industry in the USSR ordered the rapid development of the mines and smelting plant of Severonickel. The goal was to produce nickel, copper, and cobalt from the local sulphur-laden ores.

Similar to previous megaprojects on the Kola, the Soviet authorities threw masses of people at the project. Out of 10,000 workers at Severonickel in 1935, 6,000 were gulag labourers. The number reached more than 14,000 by 1940, all managed by the NKVD, the precursor to the KGB (Bruno 2016, 183-186). To make matters worse, the early deposits of nickel were not as rich as originally thought (Позняков 1999, 39-40). This, along with poor performance by a mass of forced labourers, experimentation with new smelting techniques on sulphuric ore bodies, and the arrest and execution of the entire leadership committee in 1937 (Josephson 2014, 249-250; Bruno 2016, 183-184), delayed the start of production until 1939.

Despite the havoc of the construction site, the founders of Monchegorsk wanted to avoid the mistakes made in Kirovsk and build a true “garden city”<sup>64</sup> (Лукичев 1993, 37; Позняков 1999, 45-47). As such, the “socialist city” (*socgorod* or *соцгород*), what would later become the core of Monchegorsk, was sited upwind from the smelter. Once the site was chosen, some old growth forest was preserved in what would become the main city park while greenbelts were designed both around the city and down the central avenue (Позняков 1999, 23-24; Bruno 2016, 180-181) (Figure 69). The original plan functioned well as, in 1971, Monchegorsk was awarded the prize for the best planned and constructed city in the Soviet Arctic (Лукичев 1993, 91).

Despite the well-laid plans, the garden city had growing pains for much of its early history. As in the rest of the Soviet Union, there was a massive housing shortage in Monchegorsk with early residents having approximately six square meters of space in poorly heated tents, wooden barracks, and *shalmany*. Nicer wooden houses built before the war were reserved for higher ranking staff (Лукичев 1993, 38-42). Large Stalinist houses located in the centre of the town were built after the war by German and Finnish POWs, as well as repressed women from the gulag system (Лукичев 1993, 69-73). Ironically, it was the mass-production of the present-day drab, grey panel block apartment buildings of the Khrushchev and Brezhnev eras that helped to alleviate many of the issues with the older housing stock of the 1930s and 1940s, the very buildings that give the central avenue its grand impressive quality (Figure 70 and Figure 71).

Meanwhile, not everybody got to live in the “socialist city”. Instead, 16 different settlements sprouted up around Monchegorsk and the Severonickel plant. In addition to housing gulag prisoners, “special settlers”, and POWs, these settlements performed a variety of functions including

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<sup>64</sup> Translated literally from *gorod-sad* (*город-сад*).



*Figure 69: Sidewalk by the central park in Monchegorsk, July 20, 2019.*



*Figure 70: Post-war Stalinist apartment buildings built by POWs and Gulag along the central street in Monchegorsk, July 20, 2019.*



*Figure 71: Five-story panel block apartment from the 1970s, July 20, 2019.*

construction tasks, mining, operating parts of the smelting plant, quarrying, railroad operation, and production of agricultural products (Дежкина 2015). Life in many of these was far different from the garden city ideals. They featured poor housing, low amenities, harsh climactic conditions, and were often located dangerously close to the industrial facility – the closest settlement being just 200 meters away from the cobalt processing plant (Дежкина 2015, 77-78; Bruno 2016, 201). Many of these settlements were relocated in the 1960s and 1970s as a way to address the human health conditions that arose from living too close to sulphur-producing factories (Лукичев 1993, 86-91). Other settlements were abandoned as the ore reserves dried up, workers' settlements became redundant, or collective farms closed. They created a landscape of vestigial ruined settlements that linger as ancillary impacts of the resource extraction industry (explored more in Article C). During this period of resettlement, thousands of people from the surrounding region moved into Monchegorsk proper.

The story of Monchegorsk's lost villages highlights a crucial limitation as to how this garden city was realized. As Paul Josephson commented, the treed environment of Monchegorsk gave "only a temporary distraction from the tumult of the massive central factories that employed many of the city's residents" (2014, 241). However, considering that, until the 1970s, a large portion of the region's residents lived next to the walls of the central factory upon the sulphur-burned landscape that formed around it, the Soviet Arctic garden city did not even universally provide this modicum of benefit to all its residents until 40-50 years into the city's existence.

Yet these relocations were necessary as the ecology around Monchegorsk began to rapidly transform. The mountains around Monchegorsk had fewer rich nickel and copper deposits than originally expected and, by the 1950s, the supplies of rich ores started to noticeably dwindle. To feed the needs of such a large facility, ores started to be imported from the recently-acquired mines in Nikel and Zapolyarny, close to the Norwegian border (Позняков 1999, 39-40; Bruno 2016, 200). As the last mines around Monchegorsk shut down in 1969 and 1974, more and more ore was brought in for smelting from both Nikel and Zapolyarny and from Norilsk in Siberia (Bruno 2016, 204-208). These

ores contained much more sulphur. Highly sulphuric ores, along with a rapid increase in production, led to the environmental dead zones that did not start to subside until the 1990s and 2000s when there was a decline in production and subsequent modernization of technology (Figure 72) – something I discussed in more detail in Article B.



*Figure 72: Looking upwind to the Severonickel plant, July 26, 2019.*

Ideas on how to reduce sulphur dioxide emissions were proposed early on – like capturing the gases and turning them into sulphuric acid – a usable industrial compound. Unfortunately, bad planning and management delayed the sulphur condensation plant until 1967 and its work would always lag behind production of sulphur dioxide. At the same time, there was not enough need for sulphuric acid in the Soviet Union to utilize all the sulfuric acid that it could have been produced<sup>65</sup> (Bruno 2016, 181-213). This circles back to my larger point, raised in Article D, that the desire to manage waste and turn it into something useful constantly runs into problems on managerial, economic, and material levels. Waste always escapes management practices, blurring the line between waste and non-waste. Unlike the examples given in Article D, however, people inhaled the waste from Severonickel as sulphur dioxide gas or felt it as acid rain.

Most recently, due to the closure of the smelting plant in Nikel and transfer of all its industrial capacity to the Severonickel plant, along with the increasing demand of nickel and copper for high-end electronic technology, Severonickel is becoming the largest nickel and copper refining facility in

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<sup>65</sup> Similar tension between the desire to turn mine processing waste into something useful, and the inability to do this due to drawbacks in planning, bureaucracy, and demands of production, took place in Kirovsk with nepheline, a byproduct of enriching apatite into phosphorous fertilizers. The idea was to turn nepheline into aluminum, but the process was viewed as too burdensome and expensive given bauxite deposits found elsewhere in the Soviet Union. Instead, nepheline was dumped into the waterways, leading to massive pollution (Bruno 2018).

the world (Nilsen 2018, 2021a, b). How that will affect the ongoing and accumulating legacy of industrial pollution remains uncertain. However, the ongoing use and expansion of the plant – 50 years after it exhausted most of its economically viable ores – speaks to the “past dependency” that I defined in Article B. It mirrors the ongoing desire to use and reuse the mine and the wastes at Sydvaranger (Articles D and E). There is a gravity in some things that Gastón Gordillo, following Levi Bryant, calls “bright objects” – objects that have the ability to more strongly influence other objects and turn them into satellite objects (Gordillo 2014; see also Bryant 2012). This is most visible in the Sydvaranger mine and the Severonickel plant, where their sheer existence continues to attract desires for use and reuse beyond the political, historic, economic, and material logics that once underpinned their construction.

The residents of Monchegorsk thus must live with the heritage of Soviet planning and industry and continue to reinforce it with further expansions of the industrial operations at Severonickel (see more in Article B). While lower sulphur dioxide output has allowed some vegetation to come back, they have to live with its ongoing ecological legacies of the plant (Moiseenko et al. 2018; Razinkova 2019). The population has fallen from 72,500 in 1993 to 42,000 in 2018. In the list of Single Industry Municipalities of the Russian Federation, Monchegorsk is listed as a community that is at risk of diminishment in its social and economic quality of life (Лукичев 1993, 105; Правительства Русской Федерации 2014, 11; РОССТАТ 2018).

At the same time, the environmental damage that is clearly visible from the highway outside of Monchegorsk, is quietly hidden when one is inside its urban section. The Soviet architecture, consisting primarily of Stalin-era houses along the central promenades and Khrushchev and Brezhnev period homes on the edges, effectively block views of the outside. The homes, much like elsewhere in the Soviet Union, were developed following a *microrayon* style with tall residential apartment enveloping large central courtyards with kindergartens, schools, green spaces, and other amenities (Humphrey 2005, 52-55; Meuser and Zadorin 2015, 145-159). This further exacerbates the feeling of “insiderness”, or being separated from the rest of the environment beyond the residential area (Figure 73). Given the strategic placement of the town upwind from Severonickel, the effects of processing are not seen inside the residential area. Thus, the garden city lives up to its ambitions by being a garden while the tundra outside of it is despoiled by industrial pollution. The waste is externalized from the day-to-day existence that its production affords.

During first trip to the Kola Peninsula, I visited most of the single industrial towns in the region – Nikel, Zapolyarny, Kirovsk, Revda, Olenegorsk, and Monchegorsk<sup>66</sup>, as well as the regional centre of Murmansk, the academic/industrial town of Apatity, and Lovozero – the Sámi, Komi, and Nenets community. During the trip, I was asked if all the places were starting to blend in my head – in reference to ubiquitous Soviet architecture and city design. I said no – luckily, I kept very good fieldnotes – but the question points to a broader issue of the placelessness of Soviet cities (a topic I return to in Section 4.6). Surprisingly, however, Monchegorsk stands out, as it has been often

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<sup>66</sup> Not counted here are many smaller single-industrial workers’ settlements, like Koashva and industrial towns I have not visited like Kovdor (but see Bolotova 2012, 2014; Suutarinen 2015). There are currently 313 industrial monotowns in Russia with a combined approximate population of 13.5 million people (Правительства Русской Федерации 2014; Shastitko and Fatikhova 2015, 5).





Figure 73: Monchegorsk from the southeast, July 19, 2019.

compared by its residents and its visitors to a “miniature St. Petersburg”<sup>67</sup>. While the comparison to St. Petersburg invokes certain non-place imaginaries<sup>68</sup>, it is partially rooted in the Stalinist neo-classical design of its buildings and the green spaces along the town’s main artery. It is also rooted in people’s aspirations for status, recognition, and the privileges that a connection to one of the most important cities provides. The panel block apartments on the edges of Monchegorsk may also look like those in St. Petersburg, but they look like buildings in other parts of the country as well.

The construction of identical-looking apartment buildings was functional and utilitarian in the need to quickly and cheaply house a rapidly-urbanizing country emerging from the devastation of World War II (Khrushchev 1954; Meuser and Zadorin 2015). However, the drive to urbanize and industrialize the country, while populating it with single-industrial communities, was a prerogative from a strict subscription to one version of a Marxist ideology that assumed that socialism would arise in an advanced industrial, urbanized society – even if that society was north of the Arctic Circle (Josephson 2014, 239-240). As such, the Soviet Union eagerly adopted a deep affinity for technical and scientific progress embodying “an exaggeration of modernity” compared to what was going on in the west (Josephson et al. 2013, 2; see also Scott 1998). The design of Soviet cities followed suit – lands were emptied of their original inhabitants and imagined socialist utopias were materialized everywhere that central planners saw a need (Wakeman 2016, 174-187). Land, topography, and climate rarely mattered in town design and great effort was put into subjugating it to the requirements

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<sup>67</sup> See the Monchegorsk Museum website (<https://mig.org.ru/malenkiy-peterburg>) or the recent interviews gathered by the Murmansk-based artist group, Friday Milk (<https://nolandars.space/projects-monchegorsk/>)

<sup>68</sup> See Marc Augé’s discussion on how certain places exist as “imaginary places: banal utopias, clichés” (Augé 1992, 77).

of Soviet space (best exemplified in the Soviet coal-mining town of Pyramiden on Svalbard, see Andreassen, Bjerck, and Olsen 2010).

As such, one of the key differences that sets Monchegorsk and monotowns on the Kola Peninsula apart from those in Labrador and Sør-Varanger is one of scope rather than of kind. The nations in all three case studies emptied the land of its original inhabitants, or more accurately, imagined it as empty whilst planning the regions and the communities within them. To some extent, all nations relied upon what Paul Josephson called “brute force technology” (2002) to achieve their goals – throwing technology, science, and human bodies into the creation of brand new cities in (sub-)Arctic environments. However, the Soviet Union took it to a much larger degree, throwing more men and more resources into turning the Kola Peninsula into the most industrialized, the most urbanized, and the most polluted region of the Arctic today.

Despite all this, the Kola remains a peripheralized region of Russia, much as it was during the Middle Ages when it became a tributary of Novgorod and Muscovy. The tribute-taking continues, though this time it is minerals, fish, and electricity<sup>69</sup>. What remains are monotowns whose residents have started to call these places home and to rethink their place in the larger world. A poignant example of this is the Inversia arts festival that was run by the Murmansk-based artist collective Friday Milk<sup>70</sup>. The stated goal of this festival was to rethink the place of the Russian Arctic within the global network. The name itself speaks to its purpose, which was to invert the dominant south-to-north power relations, thus turning the periphery into the centre.

However, having outlined the historical developments in Sør-Varanger, western Labrador, and the Kola Peninsula, I will stay with the theme of peripheries for the remainder of this section and address some of the broader themes that emerge across all of them. These include the militarized/militarizing presence that led to their creation, the idea of non-place in their design, and the ways in which non-placeness gets subverted through vestiges that emerge from the curtailed and unfulfilled ambitions of fully settled (sub-)Arctic frontiers.

## 4.5 Military-Industrial Borderlands

It was a hot Labrador day in mid-July and with the sun out and the trees blocking the wind, the temperature was climbing to over 25 C, making me extremely uncomfortable in my field clothes. I was surveying the remains of an airstrip associated with the construction of the Québec North Shore and Labrador Railway (QNS&L) on the banks of the Ashuanipi River, near present-day Ross Bay Junction (Venovcevs 2022, 220-224). Locals I had spoken with earlier had suggested that there might be “a few old cabins” in the woods around the airstrip. I felt the need to check them out. Later, I would surmise that this was Labrador West’s first runway, built in 1957, with the goal of establishing

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<sup>69</sup> Paul Josephson (2014, 318-320) offers another powerful example of peripheralization through communications technology. From the 1930s onward, the region had atrociously bad telephone and telegraph connections. In 1944, Murmansk had one phone per 1,000 residents, while Monchegorsk had four phones for a population of 16,000 people. Telephone lines were made of iron wiring – all this from a region that produced minerals necessary for telecommunication technology. Josephson concludes by saying “to put it bleakly, modern telephone service came to the Kola Peninsula only in the twenty-first century with mobile phones” (2014, 319).

<sup>70</sup> <http://www.fridaymilk.com/>. After the political situation changed in Russia in 2022, the festival was shut down and moved abroad.

Labrador City and Wabush. It served as a junction for workers and materials to build the rail spur going to the new worksites, until another runway was built at Duley Lake in 1959 (Hynes 1990, 44).

The survey was turning out better than I could have possibly imagined. Following the alders<sup>71</sup>, I had located traces of a water line, foundations for fuel containers, and concrete footings of buildings. Upon closer examination, objects emerged from the underbrush – an Esso aviation oil container, oil drums, glass bottle bases, buckets, radiator parts, electrical wires with porcelain plugs – and that was when I saw it, partially buried by wood scraps and caribou moss – three tin cans and six partially exposed glass bottles (Figure 74). Instinctively, from over a decade of experience in historical archaeology, I reached for a glass bottle knowing that it had the most potential to offer diagnostic information (Figure 75). The bottle had cubic centimetre measurements on the side, going up to 45 CCs, suggesting a pharmaceutical purpose. Flipping the bottle to look at its base, it read “4 F • <D>” (Figure 76). The bottle was made in November-December 1944 by the Dominion Glass Company in Pointe-Saint-Charles, Montréal, Québec (Lockhart, Schriever, and Lindsey 2015).



Figure 74: Cache of tin cans and glass flasks at the Ashuanipi Airstrip site, July 15, 2021.

The World War II-period bottle found in a camp dating to 1957 was stunning. Going into the field I knew, for example, that the construction of the QNS&L was done with the help of a massive airlift of men and supplies to points along the railroad route. Many of the pilots and planes had served previously in World War II (Canada's Aviation Hall of Fame 2022)<sup>72</sup>. The same could be said about many of the men who worked on the railroad and the planning skills used to organize them. Finding a link to the war in a small glass bottle in one of their former camps drew the war materially much closer than it had been in the background literature I consulted before the survey.

<sup>71</sup> See Section 4.7.2.

<sup>72</sup> See also <https://youtu.be/2VhXnBcRPHk?t=941>



*Figure 75: One of the glass flasks in profile, July 15, 2021.*



*Figure 76: The base of the glass flask, July 15, 2021*

Later I learned that it was possibly a container of war surplus bug repellent, which has been documented as being used through the construction of the railroad (Gzowski 1963).

While I did not set out to search for remains of conflict and war in my case studies, they constantly emerged to find me. These frequent material encounters, sometimes kilometres and decades away from the front lines, demand attention as they have potential to say something about both how the regions of my study were envisioned and how they become structured through the things that were brought and left behind. In so doing, they serve to highlight how contemporary conflict and contemporary industry are interconnected and entangled (Saunders 2004; González-Ruibal 2008, 2019; Breithoff 2020), serving as material witnesses to both real and expected conflicts far from warring parties or zones of conflict.

Of the three case studies, western Labrador lies furthest from any frontlines. Yet, as discussed in Section 4.3, it was the perceived shortage of iron after the two world wars that brought together the constellation of political, economic, human, and material capital to construct railroads into the interior of the Labrador Peninsula. As the bottle demonstrated – excesses of matériel and human skills from the war contributed directly to the opening of the Labrador Peninsula for resource extraction.

Labrador is also located in a vital geostrategic location on Canada's northeast coast. One of the legacies of this strategic importance is the Canadian Airforce Base in Goose Bay, 440 km east of Labrador West, which was founded as a World War II airbase and continued to serve as a major NATO installation into the early 2000s (Zimmerly 1975; Hollett 2005; Brenan 2019). Further out along the Labrador coast, another legacy is the American radar stations that operated in the 1950s and 60s as part of the Pinetree and Mid-Canada Line defence systems, while the region was used for numerous Cold War wargames and military training exercises (Wadden 2001; Rankin et al. in press). Cold War-era security reached western Labrador as well when a radar booster station was built 10 kilometres from the QNS&L railway. While today it is used for telecommunications (Figure 56), it contains the remains of a concrete foundation for the station and a small underground bunker for the crew that operated it (Figure 77).

Switching regions, the overt Russian militarization of the Arctic has been widely discussed both during the Soviet times and, sadly, during the present (Kikkert and Lackenbauer 2020; Kjellén 2022). Some of the most brutal fighting of World War II occurred along the Litsa River, 50 km northwest of Murmansk. Additionally, as mentioned in Section 4.4, the closure of the Barents Sea coast by the military was one of the contributing factors to the forceful relocation of the Sámi (Allemann 2013, 84-86).

However, what is rarely emphasized in these discussions is the softer, but no less militarizing power of resource extraction. The necessity for nickel as a military alloy is what prompted the rapid development of Monchegorsk through the allocation of (mostly human) resources for its construction. From the outset, the nickel industries in Monchegorsk, Omsk, and, later, Nickel<sup>73</sup> were incorporated into the Soviet national defence complex and used to produce the massive stocks of Soviet armaments before, during, and after the war (Bruno 2016, 185-187).

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<sup>73</sup> As mentioned earlier, Nickel began as an industrial-colonial community, Kolosjoki, with collaboration between the Finnish government and the International Nickel Company of Canada (INCO). During World War II, Germans took possession of Kolosjoki as they were heavily dependent on its nickel for their arms industry (Stadius 2016, 152-153). It was only after the region's surrender to the Soviet Union in 1944 that Kolosjoki was rebuilt and renamed Nickel for the mineral it produced.



Figure 77: Cold War-era bunker in western Labrador, August 18, 2019.

As Andy Bruno has further argued, modernization and militarization of the Kola Peninsula went hand-in-hand (2016, 272-273). The strategic importance of a region with an ice-free Arctic harbour, a border shared with a NATO country, and several important mineral sources cannot be overemphasized. However, the construction of cities, the importation of population, and the establishment of governmental institutions also served to materialize geopolitical power in this key outpost of the Cold War. The blend of overt militarization and city building transformed an outlying outpost of the Russian Empire dominated by Indigenous communities, into a bastion of the Soviet state.

The materialization of borders through settlement is also conspicuous in Sør-Varanger in Norway. As discussed in Section 4.2, Norway in recent times has not been a traditional military power, relying instead on non-military objects to solidify and negotiate its borderlands. As early as the mid-1800s, Norwegian settlement politics tried to bring settlers from southern Norway into Pasvik Valley in order to establish a Norwegian identity in a region occupied by Sámi, Finns, and Russians. Other attempts to territorialize the region included churches (Figure 42), schools, and other governmental institutions. The establishment of the Sydvaranger mine, the construction of the communities of Kirkenes and Bjørnevatn, and the successive government interventions to bail out and rebuild the mine all play major roles within this history. Only in the mid-1980s, when the thawing politics of the Cold War shifted to discussions of economic connection and collaboration<sup>74</sup>, did the

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<sup>74</sup> While economic collaboration increased since the 1980s, political contact had deeper roots going back to the 1952 unveiling of the Liberation Monument in honour of the Red Army soldiers who liberated Sør-Varanger from Nazi occupation. The monument served as a node for political collaboration between a NATO country and its Soviet neighbour, acting as a bridge between the two countries into the present (Myklebost and Markussen 2021).

government pull out of mine ownership and heavily invest in reorientating Sør-Varanger's economy towards Russia<sup>75</sup> (Henningsen 2021).

However, that is not to say that the Norwegian border is demilitarized. Heritage from World War II litters Kirkenes and the Pasvik Valley owing to the strategic importance the region played in the German Arctic front (Figure 78). Given the unsuccessful German attempt to capture Murmansk in 1941 and the protracted three-year deadlock between the German and the Red Army along the Litsa Valley in Russia, Sør-Varanger became the major Arctic hub for supply delivery, healthcare facilities, and recreation in the service of the German army (Olsen 2018; Farstadvoll, Figenschau, and Olsen 2020; Holtsmark 2021b, a). Because of this, German soldiers came to greatly outnumbered the civilian population and Kirkenes was completely destroyed as a result of extensive Allied bombing. The dearth of pre-1945 buildings in the area marks another material feature of a militarized border.



*Figure 78: Remains of an anti-aircraft position overlooking the Sydvaranger plant in Kirkenes, July 31, 2019.*

While the Cold War saw a limited number of Norwegian border guards stationed in Sør-Varanger, this did not necessarily limit material traces of militarized presence within the border towns. Bomb shelters are highly conspicuous within and around Kirkenes and Bjørnevatn, as they are

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<sup>75</sup> An interesting discussion that cannot be avoided as I sit and write this in November 2022 is the ongoing Russian invasion of Ukraine and the EU and NATO sanctions directed to curb it. Given the current reality, there are speculations that further sanctions will ruin cross border traffic and the maintenance and mooring of Russian boats in Kirkenes, depriving the community of valuable income. In response to this, the current owners of Sydvaranger have been advocating for low-interest government loans to help restart the mine, arguing for the need for this historical cornerstone industry. If this were to happen, the mine would once again serve to harden the border region.

elsewhere in Norway<sup>76</sup>. These include tunnels within the Sydvaranger mine (Figure 79), and a Cold War-era bomb shelter next to the house of Sydvaranger's manager – likely to house the manager and his family in case of a war (Figure 80).



*Figure 79: Tunnel inside the Sydvaranger mine, July 25, 2020. This is adjacent to the famous 1944 tunnel where much of the Kirkenes and Bjørnevatn population hid during the liberation of the area. This lesser acknowledged tunnel, originally for storage, was reinforced with concrete in the event of a future war. Thus, it is another marker that the mine continued to be seen as a vital place for protecting the local population.*

Observations from my three case studies reveal how peripheralized regions also became militarized, both with military presence and with militarized industry that have left material traces on the heritage of these places. Buildings, bunkers, and “resources for freedom” (or socialism) (The President's Material Policy Commission 1952) have transformed these places into what they are today. (Sub-)Arctic urbanism itself, built following Garden City ideas, acts as a soft tool for military power by representing the ideals of their respective national entities. As Rosemary Wakeman has argued, new towns crossed the traditional Cold War east-west divide controlling, modernizing, and militarizing territory with a caveat that, as I will further argue in the subsequent section, this was not a uniformly unidirectional operation but rather produced a myriad of regional differences, features, and discontinuities (Wakeman 2016, 9).

As such, I would argue that, when trying to understand Cold War heritage or conduct Cold War archaeology (Hanson 2016), it is necessary to expand the definition of Cold War remains to all of the new towns and buildings that were established to secure national borders while establishing what was thought of as ideal, modern, places for people to live on national frontiers (for a particularly pronounced case see the Soviet town of Pyramiden in Andreassen, Bjerck, and Olsen 2010).

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<sup>76</sup> From the end of World War II until 1998, approximately 20,000 of them were built in Norway (Noer 2018), creating a distinct Cold War heritage (Hanson 2016).





*Figure 80: Emergency shelter near the former residence of Sydvaranger's manager in Kirkenes, April 2, 2022. During my fieldwork the shelter was open and revealed a once fully stocked facility with a workroom, sleeping quarters, central halls, showers, bathrooms, kitchen, and air filtration and heating system.*

## **4.6 Building and Subverting Non-Places**

The previous discussions have illustrated that the towns built to secure resources and frontiers employed architectures and geometries that borrowed from the larger southern population centres of their respective countries. This is most radically seen in the case of Monchegorsk which I explored in Article B, arguing that its socialist architecture and monuments are what affords it its “past dependency”, where the past gets reused and reassembled for the future through the Soviet built environment of the place. Similar observations have been made by Andreassen, Bjerck, and Olsen (2010, 63-68) and Olsen and Vinogradova (2019) posing the question of whether former Soviet communities, much like other new towns of the twentieth century, can be considered some sort of “non-places” by their uniformity. While it is true that the reproduction of centralized “formal structures” (Yurchak 2003, 481) has created broad regional uniformities and excesses in housing stock (Lahusen 2006), the ascription of “non-place” to many of these locales in the former Soviet Union and, for that matter, mass-designed housing in industrial towns in Canada and Norway, needs to be interrogated further to see how far the concept can be stretched before a non-place becomes a place.

To expand on the discussion regarding non-places (Augé 1992) and placelessness (Relph 1976; Freestone and Liu 2016) started in Sections 2.2 and 2.3.2, I shall look more closely at these two concepts specifically in the context of my case studies. For Marc Augé, non-places are central to supermodernity which, he argues, created them. Augé defined non-places as space that cannot be defined as relational, historical, or concerned with identity. They are there to be passed through, do not create roots or relations, and are more prone to generate solitude and similitude (Augé 1992, 83). In contemporary archaeology, non-places have become a popular concept taken up to describe such varied things as video games and theme park experiences (Harrison and Schofield 2010, 249-278),

clandestine detention centres (Zarankin and Niro 2009, 65-66), homeless encampments (Crea et al. 2014), rural roads (Soto 2016), and places of purposeful forgetting (González-Ruibal 2008, 255-256), in addition to Arctic Soviet resource towns (Andreassen, Bjerck, and Olsen 2010, 63).

Placelessness, on the other hand, is a phenomenological experience of a location – a condition where “it is less and less possible to have a deeply felt sense of place” or a feeling of authenticity (Relph 1976, 80). This topic of authenticity vs. inauthenticity is central to Relph’s work. Drawing on Heidegger (Heidegger 1962), Relph saw authenticity as “an openness to the world and an awareness of the human condition” (Relph 1976, 80), while inauthentic places lacked awareness of “deep and symbolic significance”, “no appreciation of their identities” and thus were “seen only in terms of more or less useful features, or through some abstract *a priori* model and rigid habits of thought and behaviour” that makes experiences of them “casual, superficial, and partial” (1976, 82). This assessment echoes strongly with the city planning carried out within single industrial mining towns that comprised my case studies. The communities and houses in Sør-Varanger, the Kola Peninsula, and western Labrador were all industrially planned and designed by distant planning and architectural firms on abstract assumptions and government-stipulated ideals on what good communities and homes should have<sup>77</sup>.

The work of Edward Relph is less used in archaeology (but has been highly influential within other disciplines, for example see Freestone and Liu 2016), but his perspectives deeply resonate within my research, specifically on the issues of industrialization and community planning in the framework of placemaking. According to Relph, industrial revolution is about standardization, gigantism, and destruction whereby “steel mills, oil refineries, light engineering works, quarries, waste disposal sites, all have an appearance that is quite independent of location”; their sheer scale is what obliterates “authentic” places through excavating, burying, flooding, or building over them (Relph 1976, 109; see also Venovcevs and Williamson 2022 and Article D). For example, in her work in studying deindustrialization in the Norwegian hydroelectric power generating community of Rjukan, Inger Birkeland employed the ideas of Edward Relph to outline how industrialism produces placelessness through the destruction of distinct natural places and the creation of standardized landscapes (Relph 1976; Birkeland 2008)<sup>78</sup>.

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<sup>77</sup> The fact that Edward Relph attributed a strong central authority as one of the other drivers for a growth in placelessness also resonates in my research (Relph 1976, 114-115).

<sup>78</sup> It should be noted that this assessment stands in contrast to what Mary Beaudry and James Symonds said regarding how the design of industrial towns and cities is influenced by their respective industries and the distinctive characteristics of their surrounding hinterlands (Beaudry 2005, 309; Symonds 2005, 43-46). For Beaudry and Symonds, industrial towns come to embody a bit of the environment that surrounds them – i.e., they are not placeless but industrially unique. While industries are, in fact, location-specific, deriving their industrial potential from the vagaries of climate, geology, and geography (Keeling and Sandlos 2009), the design and construction of twentieth-century industrial communities share striking uniformity. The difference in disagreements here might stem from the fact that Beaudry and Symonds are talking about the first stages of the industrial revolution from the mid-1700s to the late-1800s where the features of a place – access to water and steam power, proximity to labour and infrastructure – played a larger defining role in creating unique looks for early industrial communities. Later industrial pushes, like the ones studied in this thesis, had the technological, material, political, and economic capital to disentangle from many of these necessities, while still being circumscribed to some key features like access to concentrations of ore and water.

Marc Augé's "non-places" and Edward Relph's "placelessness" complement each other. The former is a material construction or an assemblage that denies location whereas the latter is an experience, a phenomenological lack of sense of place as felt by an individual. As concepts, they do slightly different things. Whereas non-places invite us to look at the material dimensions of built environments, placelessness invites consideration into how the feeling of place can be made and unmade (Liu and Freestone 2016). As noted by Relph himself, the 1976 work was a retort to the destructive mid-twentieth century modernity he was witnessing around him at that time by the construction of geographies dominated by what Augé would later conceptualise as "non-places" (Relph 2016, 20). In fact, Relph's book could be seen as a near-contemporary critique of the planning logics that created the single industrial mining towns and regions discussed in this thesis – attempts at erasure and the creation of placeless geographies in (sub-)Arctic regions.

However, since the publication of Relph's 1976 book, there has been a "... release of heterogeneity into an interconnected world. Places everywhere, no matter how big, small, new, or old, have begun to evolve into hybrids of local distinctiveness and globally shared sameness" (Relph 2016, 26). This rise of hybrids, where unique places are everywhere but only exist within certain acceptable limits (Liu and Freestone 2016; Relph 2016), mirrors Augé's idea that non-places offer experience but not sociability<sup>79</sup>.

Rodney Harrison and John Schofield have argued that one of the main purposes of non-places is the attempt at making the experience of foreign locations feel less alienating by offering familiar, reproducible, and navigable environments (Harrison and Schofield 2010, 255-257). Though in the reproduction of such familiar experiences, one should consider who is the target of the experience. On one hand, the built environments of my case studies can be considered as placeless to the Indigenous people who occupied the territories before their construction, to the global traveller (or academic), and to the modern fly-in fly-out workers who rarely experience the community beyond the work camp gate. On the other hand, they could be seen as attempts to make built environments in (sub-)Arctic regions appear more familiar to the original workers coming from the south, in order to foster familiarity in an otherwise different and difficult climate.

As discussed in the previous sections, transportation and communication infrastructure, a key component that makes supermodernity possible (Augé 1992, 28), was heavily employed to help flatten the differences created by distance, as an act of necessity to counteract the feelings of isolation (cf. Relph 1976, 92). The people who came to settle in single industrial mining towns often came from

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One of the main differences here could be between modernity in the cases of Beaudry and Symonds and supermodernity in the cases of Birkeland, Relph, and me (see Section 2.3.2).

<sup>79</sup> Just like with Augé's famous airport example (Augé 1992, 1-5), Relph contends that immigration, tourism, and mass communication has made it so that "everywhere has become to some degree, a microcosm of everywhere else" (Relph 2016, 27-30). Here, I would disagree by asking "for who and for where?" It is cheaper to fly from St. John's to London across the ocean than it is from St. John's to Wabush in the same province. International travel is even more expensive and more uncommon if you are from Labrador. Equally so, the flows of immigrants are uneven – focused mostly around large, multiethnic population centres – whereas northern internet and mobile coverage remains marginal at best. While northern single industrial mining towns are more connected than ever before, they remain less hybrid than other locations, offering a less hybridized sense of place. This speaks to my earlier point regarding "weak" theorizing and being attentive to what examples one uses to make present one's observations (Section 2.1). Things work slightly differently on the margins than at the centres of economic, social, and political power.

elsewhere and intermixed with others without any prior relational and historical roots to the place. For some early settlers (and some workers today), it was a place to pass through – like a larger version of Augé’s airport (Augé 1992, 1-5). This is best exemplified by the town of Fermont, which did not come with a maternity ward or a cemetery at the time it was built (Gudd and Pons Braley 2020, 3; Rodon, Keeling, and Boutet 2021, 8). Even though the town had a new school and kindergarten, nobody expected to be born or die there. To some degree, this is true in Soviet Russia as well where workers were promised housing further south after working several decades in the Arctic – though the communities there were equipped with cemeteries and maternity wards with the assumption that these places would become permanent, new, socialist cities (Kalemeneva 2019).

The creation of a familiar space in an unfamiliar environment for work, transit, and entertainment had a certain degree of success. Reflecting back on my own personal experiences, one of the things that drew me into studying this topic was the peculiarity of seeing Texas-style suburbs (see Section 6) in the middle of the boreal forest when driving into Labrador West (for Walmart and McDonalds), in juxtaposition to the more haphazardly designed Happy Valley-Goose Bay where I lived (for more on the history of Happy Valley-Goose Bay see Zimmerly 1975; Brenan 2019). The peculiarity continued into Russia where versions of my Soviet-era home neighbourhood in Riga seemed to rise out of the taiga on the Kola Peninsula (Grava 1993; see Section 1.1).

While the towns may have been created for fostering familiarity and moving people through, one of the powers of the archaeological gaze is to subvert non-places, and possibly even the feelings of placelessness, by providing texture and depth to the materiality of certain locations (González-Ruibal 2019, 158). As outlined previously, the redefinition of space on the Kola Peninsula, Sør-Varanger, and western Labrador took place, in part, because the land was emptied of its previous Indigenous occupants to create space for modernist and industrialist projects. However, this emptying was not a totalizing act, as material vestiges of past occupancies continue to linger and Indigenous peoples continue to reside in these regions.

While access to land was necessary for the creation of rationalized and divisible space (Brown 2001; Cinis, Drémaitè, and Kalm 2008; Mellin 2011; Wakeman 2016), it was enacted differently in the different areas. The Canadian resource network, for example, was diverse, fragile, and intertwined – containing a mixture of private and public capital, long transportation networks, and a variety of actors (Keeling 2010, 233-234). In contrast, the Soviet system functioned more like an organ – solid but vulnerable to systematic collapse. In this sense, operations in western Labrador could be discontinued or mothballed more readily, leaving behind vestigial operations, while on the Kola Peninsula, the systemic shock of Soviet Union’s collapse led to the unravelling of entire regions (Article C; Venovcevs 2022; Venovcevs and Williamson 2022). Sør-Varanger, on the other hand, acted as an industrial anchor for Norwegian state sovereignty that only weakened when its use seemed less relevant, but it retains the potential to become remobilized, given the state’s interests in the strategic region.

Extending the gaze to the history of built environments, another interesting aspect that emerges – despite the claims to their rigidity, permanence, and “stickiness” (Olsen 2013b, 185-187; Olsen and Pétursdóttir 2016, 41-42) – the Soviet built environment in Monchegorsk can be seen as more dynamic than that of either Labrador West or Sør-Varanger. Comparing satellite imagery of Monchegorsk from 1971 and 2022, one can see at least 151 residential buildings demolished in the western section of Monchegorsk, to be replaced by later panel block apartments (Figure 81). This is reflected in municipal histories that note the gradual replacement of early wooden structures with more permanent concrete ones (Лукничев 1993, 91-100). In addition, and contrary to initial appearances, the concrete mass-produced houses were not the same as elsewhere in the former Soviet



Figure 81: Monchegorsk in 1971 and 2022.

Union. As discussed by Philipp Meuser and Dimitrij Zadorin, panel block houses were specifically designed to withstand a wide variety of climatic, seismic, and ground conditions, given the broad range of climate and seismic zones that were present in the Soviet Union (Meuser and Zadorin 2015, 34-45). Meanwhile, looking at the orthoimagery from Labrador City from 1969 and satellite imagery from 2022, the original downtown core has remained the same with few additions and changes (Figure 82)<sup>80</sup>. It can therefore be argued that the built environment in Monchegorsk was much more dynamic than its Canadian counterpart<sup>81</sup> and goes against what has been previously suggested about socialist city design, where old buildings were left to accumulate and pile on each other (Grava 1993, 14). This situation has shifted slightly since 1991. While major housing construction has continued in Labrador West and Sør-Varanger, much of the construction in Monchegorsk has been done on a smaller scale, for private houses, done primarily by private individuals.

The constant evolution of new cities and industries during the Soviet period, such as Monchegorsk, highlights one of the big differences between single-industrial projects in the former Soviet Union and its western counterparts. Soviet cities and industries were always future facing, embodying a dominance over natural forces and the expectant coming of full communism. The future was just around the bend – communism was being built, but was not quite there yet. Whereas in Canada, the future was there, ready-made in the present, exemplified by newspaper stories celebrating “town(s) of tomorrow” (Staebler 1965; see also Relph 1976, 103-105 on futurisation). This creates differences in the material reality that forms the present. Whereas the former Soviet Union bears the traces of a latent, unrealized, indefinitely postponed tomorrow (Figure 83), in Canada, tomorrow has already come and went, leaving behind an aged<sup>82</sup> utopia (Figure 84). People in both must live with the things of what has come before.

This focus on things and their pastness is ultimately what situates archaeology to say something on both the non-places of twentieth-century single industrial mining towns and the experience of placelessness in general, as put forward by Edward Relph (1976). Going back to contextualize Relph’s original work, it is interesting to note that he was working and writing from Toronto in the 1970s, which was then experiencing some of the most brutal mid-century urban redevelopment (for example see Schopf and Foster 2013). For Relph, it was the nineteenth century rural and urban landscapes of southern Ontario that were seen as authentic places – like his example of old vs. new roads (Relph 1976, 90-92). However, this same area was, over the century prior, described as “bare of scenic interest”, “tame and domestic”, and a “beautiful monotony” (McIlwraith 1997, 3-4),

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<sup>80</sup> In fact, this has led me to suggest that the area should be protected as a historical built environment (Venovcevs 2022, 251).

<sup>81</sup> A similar observation can be made about Kirkenes. Compare the beautiful 1956 aerial image and work done by Geir Wollmann in *Hvem var Hvor Kirkenes 1956* (2017) and today and it becomes clear that much of the original architectural core of Kirkenes has remained unchanged since the post-war reconstruction. The entire premise behind the book – identifying who lived where in 1956 – presupposes that the built environment has changed little since that time.

<sup>82</sup> See Lowenthal (2015, 206-288) on the topic of aging. In the communities I discuss here, there is both a feeling of aversion and affection, though not formally codified ones. Aversion comes across among some younger people for whom the utopian dreams of their parents and grandparents for nice lives in nice communities have not materialized. Affection comes from older generations who have dedicated their entire lives to living and working in the mining towns, along with those who see historical value of that accomplishment. Aging is used here to imply the passing of unfulfilled ambitions and the ambiguous existence of having to live with those material consequences.



Figure 82: Labrador City in 1969 and 2022.



*Figure 83: A common feature in post-Soviet towns – an unfinished housing development in Olenegorsk, an iron-mining community near Monchegorsk – a relic of an indefinitely postponed promise of a communist future, July 21, 2019.*



*Figure 84: The “school of tomorrow” in Wabush referred to Edna Staebler in a 1965 news article; now 60 years old and serving as a middle school for both Labrador City and Wabush, July 14, 2021.*



stemming from Victorian planning logics that gridded the terrain into even lots and concessions for an idealized bucolic countryside of recently-colonised and settled land (see McIlwraith 1997 about European settlement in Ontario; Ferris 2009 provides an excellent discussion of Indigenous responses to it). It was a modernist project from the nineteenth-century that became naturalized over time to become “authentic” for people like Edward Relph.

My point here is not to critique of Relph’s ideas but rather to contextualize<sup>83</sup> them to advance my own point on how placemaking can occur. In addition to design and human intention (see the contributions in Freestone and Liu 2016; for subverting non-places see Soto 2016), I contend that placemaking also happens through breaks and aging. With the former, the breaking, collapse, and ruination force things to become noticed and “present-at-hand” (*vorhanden*), as opposed to when they are withdrawn from view, or “ready-to-hand” (*zuhanden*), via our practical involvement (Heidegger 1962; Olsen 2010, 68-121; Pétursdóttir 2014, 346-347; see Section 5.2). As such, breakdown and ruination can be a creative and generative act (Olsen and Pétursdóttir 2014a; DeSilvey 2017) that provides texture, allowing places to emerge out of non-places (Articles C and E).

With the latter, aging – or “living with” (see the contributions in Venovcevs and Bangstad 2022) – can also generate placemaking affordances as people start to naturalize, identify with, and customize things that previously stripped a sense of place from a given location. Looking at the growth, evolution, and decline of the regions I studied reveals that while it could be asserted that they were built as a form of non-places through demolition of original landscapes and creation of new forms of spatial order (especially those in Russia and Canada), characteristics of place re-emerged over time. Children and grandchildren of the original settlers, those who stayed, created their own sense of place by developing relations, history, and identity as the location aged (for similar reflections see Hammond 2010; Bolotova 2014; Hynes 2021). Mine waste too (as discussed in Article D and mentioned briefly in Article B) has contributed feelings of place to these locations by imbuing them with aesthetic characteristics of leaking tailings and towering waste rock piles. As such, placemaking can be seen as an emergent property that occurs through ongoing engagement with persistent things, with buildings, streets, and landscapes that become familiar over time, gathering memories and creating belonging.

An example of these emergent places can be seen in the Labrador City and Wabush cemeteries, where burials were not common until the 2000s, marking the passing of the children of the original settlers who came and grew up in the community and who consider no other community to be their home (Venovcevs 2022, 240-241). Fermont too, finally got a cemetery after 50 years without one (Rodon, Keeling, and Boutet 2021, 8). There are few stronger markers of belonging than choosing to be buried in a particular soil.

Thus, as remarked upon by both Marc Augé (Augé 1992, viii) and Edward Relph (Relph 2016), non-places, placelessness, and places are not absolute terms but rather conceptual tools that allow for thinking through varying degrees of sociality, hybridity, and placeness. In my case studies, whose initial development occurred slightly outside of the range of human memory, one can see how non-places, defined by placeless design and mass-produced architecture, and intended for passing

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<sup>83</sup> Contextualization is also important into how each project, each set of ideas, each scientific study is situated in a unique place and time (see Section 3.1).

though, have given rise to feelings of permanence and place over succeeding generations<sup>84</sup>. In the subsequent section, I will continue to build on this idea of how western Labrador, Sør-Varanger, and the Kola Peninsula have become more “place-like” over time through vestiges and wastes that have accumulated and now comprise an integral part of these respective regions.

## 4.7 Patches of the Anthropocene

### 4.7.1 Vestiges, New Towns, and Unevenness

Vestiges play a central role in Article C, which explores the accumulation of former ancillary industries around Labrador West and Monchegorsk. The article calls into question whether all places can be considered as comprised of fragmentary compositions made up of vestiges and asynchronous things (see also Olivier 2001; Farstadvoll 2019c; Hopper 2020). What is peculiar about this idea, in this context, is that modernity seeks to create radical breaks from the past creating new towns in new configurations. The construction of new towns in Sør-Varanger, western Labrador, and the Kola Peninsula may be seen as attempts to create places unhindered by the past, unhindered by vestiges.

If so, this was not completely successful, as demonstrated by descendent Indigenous communities and the surviving archaeological remains from their past, despite both the explicit and implicit attempts to erase them (Loring et al. 2003; Cockerill 2004; Farstadvoll, Figenschau, and Olsen 2020, 77-80; Venovcevs 2022, 232-234; see also Sections 4.2, 4.3, and 4.4). At the same time, new vestiges within and outside single industrial communities developed over time. I demonstrated this through the focus on quarries in Article C and hinted at it in Article B, with the observation that “each part of the past has value (or lack of it) in each successive present”.

Vestigiality can therefore be seen as an emergent property that comes as a result of the passage of time, as well as the tension between the things’ resilience to be completely removed and their propensity to fall out of use. Similar to this, and as explored in Article D, is the issue of mine waste that accumulates over time to become one of the main aesthetic characteristics in single industrial mining regions and an assemblage of recalcitrant objects in its own right that refuses attempts to be turned into something useful. Much like with the quarries, awareness of mine wastes evolves over time as the wastes gradually call attention to themselves. Meanings may then get ascribed or changed from a threat to a resource or to a valuable building surface (most exemplified in the case of Sydvaranger, see Article D). Whilst the construction of new towns could relegate the unwanted components of the past to certain “away places” (Harrison 2021, 35; Liboiron and Lepawsky 2022, 71-76), this separation grows more and more untenable as the past piles up through ongoing life and extraction.

Vestiges, in addition to natural topographic and environmental idiosyncrasies, are thus what gives these (no longer) new towns texture while helping to subvert their placelessness. The accumulating piles of mine waste, the overgrowing quarries, and other tell-tale signs of extraction are material reminders that one is somewhere designated for industry. It is for this reason I became

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<sup>84</sup> One development that goes against this trend of placemaking is the growing reliance of fly-in-fly-out labourers and other contract workers. For this demographic, the workcamps and single industry towns can still be seen as a form of non-places to be passed through in order to earn a living for a life that is elsewhere. Thus, non-places and places can be seen as existing simultaneously, depending on the viewer and their relationship to that space.

preoccupied with iron pellets (Figure 33), the main tradable commodity produced in Labrador City from 1970 to the present, and in Kirkenes from 1969 to 2008 (see Article D). In the surface surveys I conducted in Labrador City in the summer of 2021 (Venovcevs 2022, 242-250; Article D), most of the material recorded represented expected objects of contemporary consumption – beer cans, coffee cups, fast food containers, zip ties, socks, lottery tickets, etc. – materials that could also be found elsewhere in Canada. Yet this collection also contained two iron pellets – objects that are specifically unique to Labrador City, which exists exclusively to produce them for export. Thus, archaeological attention to vestiges big and small helps to further establish a place out of a non-place and differentiate between “the elsewhere and the here”, an exercise that Marc Augé posits as becoming more difficult within supermodernity (1992, xix).

It is with vestiges in mind that I return to the notion of a “patchy Anthropocene” (Tsing, Mathews, and Bubandt 2019) that was introduced in Section 2.3.3. The present is full of vestiges that are constantly accumulating and stubbornly lingering to create textures in spaces designed to exist without a past and outside of history. By seeing the present as inherently patchy, archaeology can contribute to its study by finding and expanding upon locations where the Anthropocene manifests itself unevenly. Instead of seeing the Anthropocene as a viscous, delocalized “hyperobject” (Morton 2013), it is perhaps more useful – especially from an archaeological point of view – to seize on an idea of the Anthropocene that is comprised of ordinary things in the here and now that, while universal, are unevenly distributed. While knowledge of rising global temperatures and polluted lands and oceans is indeed assembled through the work of millions of devices performing millions of scientific measurements around the world, our experience of the Anthropocene is inherently localized and embodied. Studying graspable things that comprise the Anthropocene – the mine wastes, the iron pellets, the disused hydroelectric plants, the barely-refurbished Khrushchyovkas, and the long drives on empty highways – makes archaeological knowledge relevant to understanding the present while also laying the groundwork for how the universalizing imagine of the Anthropocene can be subverted through interventions within localized, uneven possibilities (something I explored towards the end of Section 5.1).

#### 4.7.2 Alders – Growth in the Patches

One such localized, uneven possibility are shrubs. It may seem strange to include a separate section on shrubs in an archaeology thesis (though not without precedent, see Farstadvoll 2019a; b, 59-76). However, shrubs, specifically the speckled alder and the mountain alder (*Alnus incana rugosa* and *Alnus viridis fruticosa*)<sup>85</sup>, played such a pivotal role in my work in Labrador. Therefore, they deserve their own section<sup>86</sup> to discuss what can grow in the patches left over by the rapid rise and decline of the resource extraction industry as well as how that can carry methodological and theoretical implications for contemporary archaeology, as operationalized in my research (Figure 85).

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<sup>85</sup> *Alnus incana rugosa* and *Alnus viridis fruticosa* are both North American species that are shrubs. They are not to be confused with the European grey alder *Alnus incana incana* which is more tree-like than its North American counterparts. While European rewilders exist, this section primarily focuses on North American alders because they reappeared time and time again during my field research in Labrador, playing a significant role as my guides.

<sup>86</sup> “Shrubsection”?



Figure 85: Alders in the Wabush sandpits, July 6, 2021.

Alders appear in the sand quarries behind Wabush (Article C), are used to help stabilize mine tailings at the IOC plant in Labrador City (Article D), and dominate the area of the former reservoir, work camp, and town site at Twin Falls (Article E; Venovcevs and Williamson 2022). They also appear throughout other sites of recent human activity both in western Labrador (Venovcevs 2022) and elsewhere in the region (Nielsen and Brenan 2018; Brenan 2019). The reason for their ubiquity is their small root nodules, which host nitrogen-fixing bacteria from the genus *Frankia*, who turn nitrogen in the air into ammonia (Mitchell and Ruess 2009; Lantz, Gergel, and Henry 2010; Lalancette et al. 2019; Gagnon et al. 2020). This property means that alders do not need nitrogen in the soil to grow, making them well-suited to take over anthropogenic environments.

What makes them unique in the contexts of this study is that, as a ruderal species – one that is well-adapted for growing in the rubble of human disturbance (DeSilvey 2020, 294-296) – they are local plants that spill out from their traditional constraints of dry river beds, shorelines, marshes, and other interstitial zones to take over human ruins. They do so without deference to human care, interests, or management practices (cf. Bartolini and DeSilvey 2020; DeSilvey 2020, 2021). They are not necessarily attractive or valuable but rather are seen as weeds that come to populate the hollows and interstitial areas left behind through human use. Eventually they create vast single-species shrub forests – “feral landscapes” par excellence (Tsing 2017).

As such, the alders served as a useful guidepost in my fieldwork by helping me identify and survey archaeological remains of recent human activity in western Labrador. Patches of alders often contained traces of former structures, activity areas, or discarded objects from the mining period and beyond (Figure 86). Yet, as a thicket-forming, broadleaved plant, they also make work difficult, in one case, requiring the use of a drone to fly above the alders in order to map Twin Falls (Venovcevs and Williamson 2022). In addition to mapping the remains of the former settlement, the drone work inadvertently recorded the alders that fleshed out the former water reservoir, work camp, and



Figure 86: Alders growing over a buried water line at a former camp at the Ashuanipi runway site, July 15, 2021.

settlement area, left cropmarks following the old roads, and hugged the edges of the concrete foundations, making them very visible in the imagery (Figure 87).

In addition to being guideposts for archaeology, alders play an ambiguous role in Labrador being seen both as a chronological marker of time and a mediator of memory. For example, during a tour of Wabush, a local informant kept commenting on how big the alders have gotten, underscoring the passage of time since he was younger (Figure 88). Meanwhile, at Twin Falls, alders are seen as obscurers of the past (Parsons 2008) – literally hiding the remains of the former community leading to some former residents to assert that there is not much there to see<sup>87</sup>.

The final characteristic about alders is that they are intolerant to shade – meaning that successive generations of leaf depositions will facilitate the growth of taller trees such as spruce that will eventually crowd out the smaller shrubs. As such, all things being equal and climate change notwithstanding, alder clearings will eventually disappear, making past vestiges in the terrain less recognizable<sup>88</sup> though not completely invisible, given the landscape-scale alterations and material things left over in these places. In this way, alders are a finite form of material memory (see Olsen 2013a; Bangstad 2019; Figenschau 2022) that grow in the absences created by the Anthropocene patches of use and disuse. Rather than being the leftovers of something purposeful, directed, planned, or planted (cf. Farstadvoll 2019a), alders are, rightfully, the “feral proliferations” (Tsing, Mathews, and Bubandt 2019) of uneven development in resource peripheralized regions. It is from thinking through alders, thinking through patches, that I came to understand the regions that I studied. Therefore, by following the patches, I modified my field methodologies accordingly.

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<sup>87</sup> Gathered from reading the “Twin Falls, Labrador” Facebook page and conversations with some of the group’s members who are the former members of the community.

<sup>88</sup> See recognizability discussion in Article C.

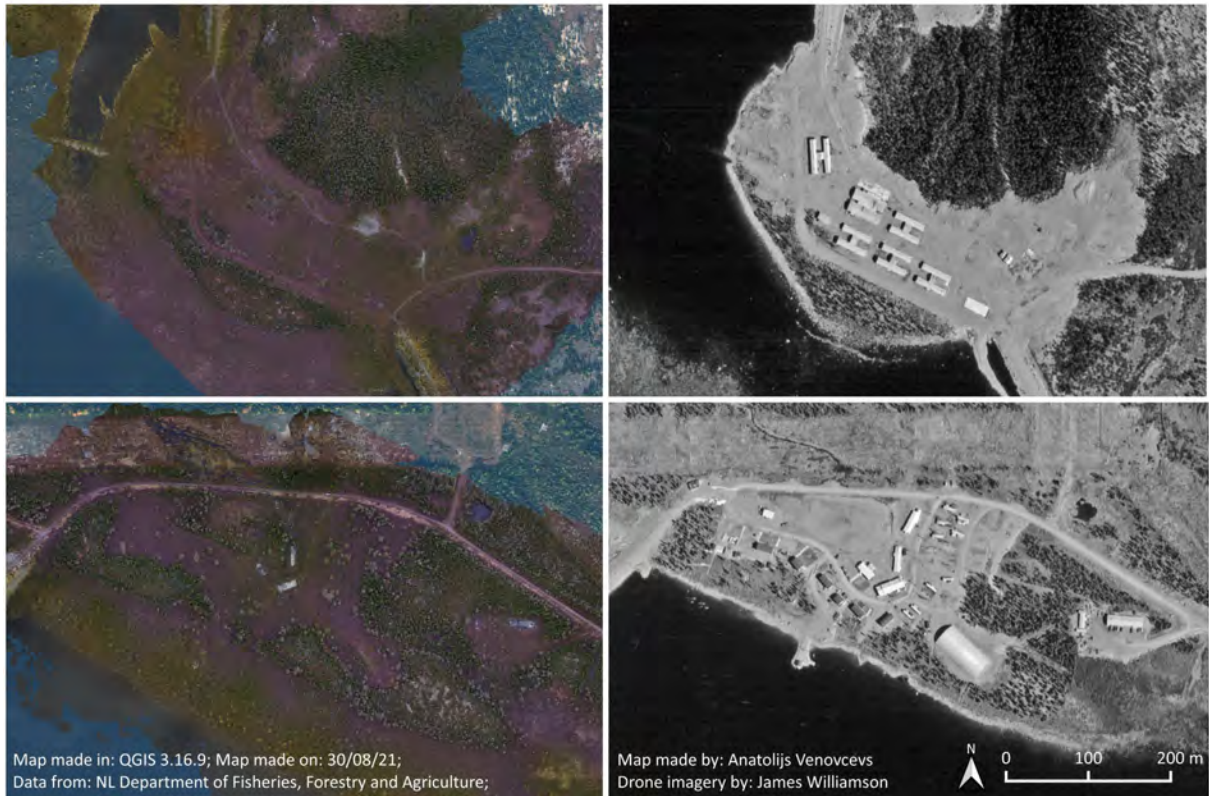


Figure 87: Drone imagery from Twin Falls in 2021 and orthophotography of the same area in 1972, the purple and light green areas on the left are all the alders (Image reproduced from Venovcevs and Williamson 2022, Figure 9).

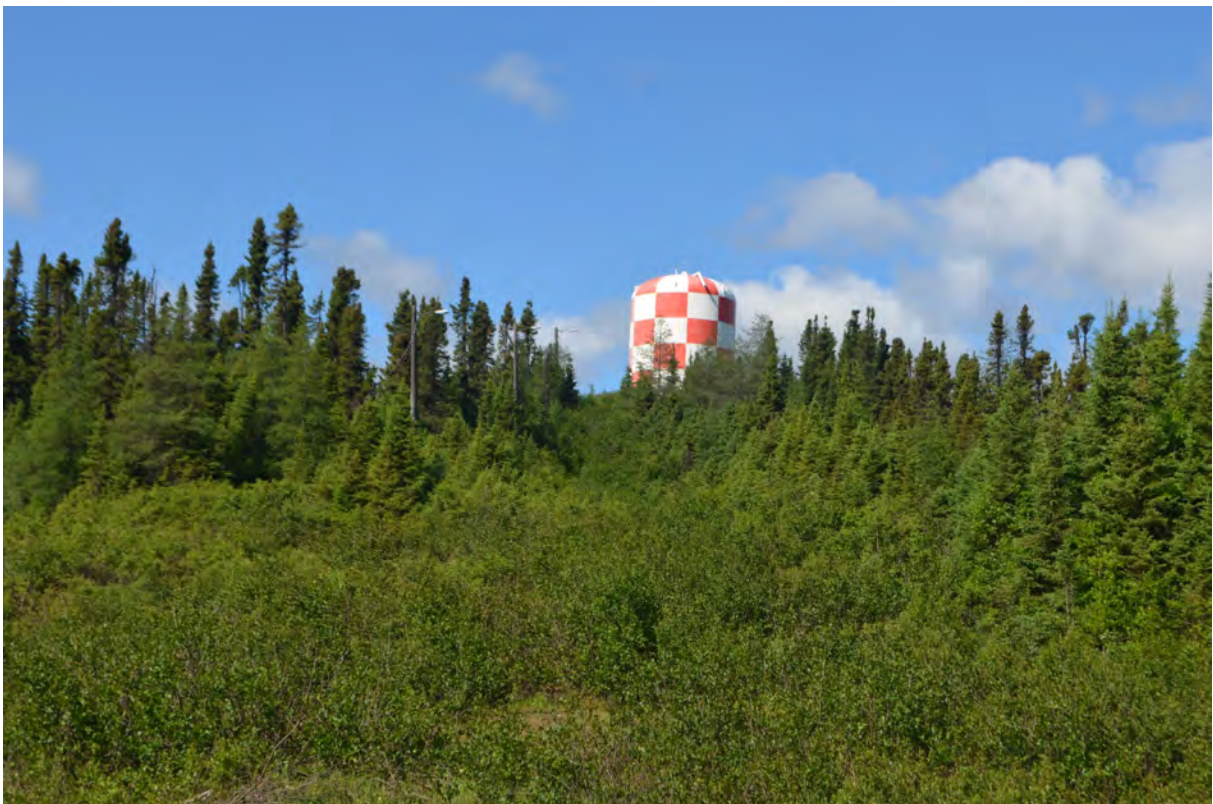


Figure 88: Former ski hill in Wabush delineated by alders, note the streetlights that would have illuminated the ski slope, July 8, 2021.

In the final major section of this thesis, I will bring the subsequent parts of the thesis together to outline the main contributions to knowledge that I have produced through my main research aim, which was to archaeologically understand (sub-)Arctic regions transformed by twentieth-century northern industrial colonisation, while addressing the main questions of my thesis:

- Q1: To what extent did material legacies emerging from a period of significant government interest and investment in the regions survive into the present and how do they continue to persist in a time where investment into social services has declined and industrial labour has become more flexible?
- Q2: What tensions arise when things from this prosperous past find new purposes in the present or remain recalcitrantly redundant?
- Q3: What does the urge to give things from the past “usefulness” tell us about the temporal and geographical boundaries of the resource extraction industry in the (sub-)Arctic?
- Q4: How does one do an archaeology of non-abandoned sites?





## 5 Contributions to Knowledge

### 5.1 Pasts in the Present

In Article C, I explored the concept of “vestige” as used in scholarly literature and my application of it to the quarries on the outskirts of Wabush and Monchegorsk. I operationalized the term to refer to an object of the past that has the ability to be remobilized and continue to serve new purposes in each successive present, thereby exceeding original human intentions and planning. Following this definition, I chose to title my thesis as “Vestiges of a Previous Industrial Age.” The title acknowledges things of the past (the single industrial mining regions and the things that comprise them), from a previous period of industrial colonisation of (sub-)Arctic peripheries of Canada, Norway, and Russia, that continue to be remobilized in the present even though colonisation has shifted form to no longer include the construction of new single industrial mining communities. Peoples and environments must live with these industrial pasts.

One way of conceptualising these pasts in the present is the concept of *Nachleben* which I briefly introduced while discussing the topic of vestiges in Article C. *Nachleben* was coined by Aby Warburg and developed further by Marek Tamm (Tamm 2015, 9-10; Tamm and Olivier 2019, 5-6). Translated, it simply means “afterlife” but, as Tamm explains, it is not another life after this one but rather...

*a continued life, the past that becomes actual in the present, or the past that haunts the present. Therefore, instead of the traditional “afterlife”, a more appropriate translation might be “survival” or even “revival.”* (Tamm 2015, 5)

It could be postulated that the emphasis here is on the “life”, with “after” being equally stressed, so that the past carries on into the present but in a haunting form where the past comes back through “distortions in successive interpretative acts of remembering” (Tamm 2015, 5). It could even be said that, in my case studies, the life of industry never ended in the sense that would invoke an “afterlife.” Rather there is a “survival” – a life after the “Golden Ages” of settlement and stable, well-paying jobs<sup>89</sup> – that must contend with the material memories of better days. This life never died, never disappeared, but remains materially omnipresent. Bjørnar Olsen echoes a similar situation – of being confronted with material memories of better days in the built environments one occupies with his reworking of *Wirkungsgeschichte*, or “effective history” as coined by Hans-Georg Gadamer, to an “effective archaeology.” In this, the surviving material pasts continue to bear weight on the minds and actions of the present-day people and environment (Olsen and Vinogradova 2019, 7; Olsen 2022, 14-15).

*Nachleben* and “effective archaeology” lead to my own concept of “past dependency”, a play on “path dependency”, that I introduced in Article B, where successive accumulations of Soviet pasts accumulate on top of each other in Monchegorsk and thus propel it forward as a single industrial community that has outlived the planned economic system of the Soviet Union. Similar developments can be observed in western Labrador and Sør-Varanger, where communities have developed mining

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<sup>89</sup> At Sydvaranger, there is literally a period remembered as *Gullalderen* (“The Golden Age”) from the restart of mining in 1952 to approximately the late 1970s with the mounting deficits leading to 1985, when the Norwegian government decided to pull out its stake in the mine and diversify the local economy (see Wikan 2006, 203-243).

town identities that impact plans, ideas, and imaginaries of economic diversification. Past dependency is seen most explicitly in Labrador City and Wabush, where economic diversification has been limited and the economies are still reliant of resource extraction. In fact, the entire region has been, and continues to be, perceived as a place for resource extraction (Article A). Likewise, in Sør-Varanger, past dependency can be seen in Gunnar Sætra's scolding editorial critique of the municipality's preoccupation with attracting large industrial projects as a way to fill the gap left over by the resource extraction industry (Sætra 2022).

As such, the past within the resource peripheralized regions of the (sub-)Arctic keeps being revived in new ways. At the same time, when a facility is permanently closed (Article C) or temporarily mothballed (Article E), it often continues to invite reuse and revisitation (Figure 89). Thus, past dependency is not a rehash of historical determinism (as suggested by one of the peer reviewers for Article B). Rather, it is an acknowledgement that the past has a tangible, material impact on the present that both mobilizes material forces for its own continuation (Articles A, B, and D) and sets the groundwork for alternative becomings after certain pasts stop being actualized – though in ways that do not easily overcome the material traces of that past (Articles C and E). It is an exercise in placemaking with full acknowledgement that the designed physical dimensions of a non-place cannot be easily overcome. In this way, resource extraction and processing in communities like Monchegorsk, Labrador City, and Wabush is seen as the main and most important driver of the future. Simultaneously, on their outskirts, discontinued ancillary industries are in the process of becoming something else within the physical imprints of those former industries, while also expanding those physical dimensions (Article C).



*Figure 89: Julienne Lake deposit at the tip of Javelin Road in western Labrador, July 11, 2021. This area contains significant iron ore deposits and, in the late 1960s/early 1970s, this place was thought to become a third single industrial mining town in the region. The area was extensively mapped and cut lines bisect the region; this field was grubbed off in preparation for mining (see *Engineering and Mining Journal* 1977; Conliffe 2013). However, that never materialized and now this region attracts fishers, hunters, joy riders, and waste (Venovcevs 2022, 230-232).*

At the same time, there is a tension between living with an industrial past that was designed as new, modern, and colonising and living with a present that is now aged, faded, and problematic<sup>90</sup>. As such, it makes a perfect place to explore the question of what happens to an industrial past that is both present and altered, thereby challenging clear chronological distinctions between past, present, and future and deepening understandings of what it is to live with industry.

Returning to the discussion of *Nachleben*, the “after” life of things is a regular topic of concern among scholars who study deindustrialization, ruination, and abandonment. However, relatively few have theorised upon it. Notable exceptions to this have focused on the continuation and endurance of objects (Pétursdóttir 2018a, 97-98; Farstadvoll 2019b, 11), their wasted complicated legacies (Martínez 2018, 2021), their affects and affordances (Gordillo 2014), their utility in memory work and reanimation (Orange 2015b), and their ongoing movements and developments (Reno 2015). In this sense, an “afterlife” can be understood as a second life or a reoccurrence<sup>91</sup>.

Afterlife stands in contrast to another common term – “aftermath”. Sometimes, rather uncritically, aftermath and afterlife are used interchangeably but they carry slightly different meanings, as “aftermath” is a consequence of a thing or an event. One can proceed from the other when the aftermath of factory closure can lead to its ongoing afterlife as a delict building. An interesting theorisation is offered by Stein Farstadvoll (2019a, 181), who traces the etymological roots of the word as the incidental second crop of plants after the original harvest. It can therefore be postulated that the rewilding species and things at a place like a landscape garden (Farstadvoll 2019b), a quarry (Article C), or a disused pile of mine waste (Article D), present some sort of a second harvest – a bumper crop of things and weeds.

In general, however, the concepts of afterlife and aftermath fit awkwardly within my case studies since there is little “after” to speak of – at least in the material and operational senses of the word. Most of the industries and communities have changed little, even though the world around them has. Equally so, discussions on industrial heritage offer scant guidance as they concern themselves with this “after” – a *post*-industrial position focused on questions such as the reanimation of human memories, stories, identities, and spaces (Orange 2013, 2015b; Rhatigan 2020), lingering and ambiguous identities within industries and built environments (Cater and Keeling 2013; Storm 2014, 2021), hybrid nature-culture ecologies (De Sousa 2014; Bartolini and DeSilvey 2020), challenges regarding the completeness of mine closure (Keeling and Sandlos 2017; Beckett and Keeling 2018; Sandlos et al. 2019), and nuances associated with industrial commemoration and restart (Valestrand 2014; Wråkberg 2019)<sup>92</sup>.

Thus, *Nachleben*, with its focus on survival and enmeshment of the past in the present offers a better framework for moving towards an understanding of the continuation of twentieth-century single industrial towns “riding the resource rollercoaster” (Wilson 2004; Rodon, Keeling, and Boutet 2021) of new political and economic realities. Yet, within this continuation there is also an embodied entanglement within the industries, buildings, infrastructures, wastes, and their disused components

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<sup>90</sup> A topical issue as we try and adapt industrial heritage to sustainably address the Anthropocene (see Birkeland 2017).

<sup>91</sup> Though not universally. As Þóra Pétursdóttir emphasized, it is we who happen to things and not the other way around (Pétursdóttir 2017, 97-98; 2018a, 192-193). This reframing implies that, when it comes to the lives of things, it is the human engagements with objects that follow one another, but only occasionally, as things live just fine for much of their existence without humans.

<sup>92</sup> Though see Storm and Olsson (2013) for a discussion on how to use an ongoing mine as a potential “cultural tool” for promoting shared memories.

and counterparts that have rapidly changed life within these industrial regions over the last one hundred years (a topic I outlined in Sections 4.2 through 4.4). It is an “alterlife” of being both present in, and altered by, the accumulated legacies of development.

The term “alterlife”, coined by the Métis scholar Michelle Murphy, captures a life entangled within “community, ecological, colonial, racial, gendered, military, and infrastructural histories that have profoundly shaped the susceptibilities and potentials of future life” (2017, 497). Originally, the concept targeted at chemical relations that over time have restructured humans and communities in the past, present, and future (Murphy 2017, 2018). However, the concept holds relevance on the embodied level since chemical relations can be infrastructural as well (Lerner 2010; Nixon 2011). As Murphy puts it, “infrastructures are physically present inside of us” (2018, 116), which can be interpreted both in a molecular sense (Figure 90) and also in a material one. This echoes Henri Bergson’s concept of habit memory and being, moving, and working in the world that is structured by hard, physical, human-built infrastructures (Bergson 2004). As explored in Article D, there comes a point when the chemical and structural aspects of industry<sup>93</sup> are flattened and intermingled, both becoming the other and coming to impregnate local acts of living. In the words of the Labrador City artist and iron miner, Tanea Hynes – “There is enough iron in your body to make a fairly large nail” (2021, 8).

The concept of alterlife has strong relevance for archaeology because humans have been entangled with infrastructures for thousands of years (Wilkinson 2018). Moreover, archaeologists always come to a place that has been altered by time, by decay, by non-human actors, and by previous, subsequent, and ongoing human, non-human, and material activity. The latter is situated in Alfredo González-Ruibal’s observation that “we see too late, but we see more” (2019, 79). This “postwitnessing”, to use González-Ruibal’s term, offers archaeology a powerful advantage of seeing more – the consequences, wider outcomes, and trajectories not available to those who were present in those pasts. At the same time, alterlife acknowledges that archaeologists arrive to a past that has already been transformed and incorporated into the present before they even got there. As such, when I came to western Labrador, Sør-Varanger, and the Kola Peninsula, I came to places already altered by industry long before I was born, and it seemed too much to disentangle all the many threads through which those alterations took place. Hence, there was a need to rely on fieldwalking to survey the surfaces of the regions in their completeness while employing photography to capture those surfaces in the present.

I must also acknowledge that I came to my studies as somebody already altered by industrial processes from elsewhere. When I arrived, I was wearing industrial clothes, employing industrial medical components in and on my body, traveling by industrial means, transported on industrial roads, geared with industrial equipment (with elements, perhaps, originating in the very soils that I was visiting), and supposedly belonging to a “post-industrial” society (Section 2.4). In alterlife, we carry the physical legacies of industry with us both geographically, as we move around the world, and chronologically, as our industrial past dependencies follow us into the future. This assessment builds on Article B, where I focused on this entrapment (as presented by Hodder 2011, 2014), and on the work of myself and my colleagues who postulated ways of living with involuntary pasts (see Venovcevs and Bangstad 2022 and the contributions in that special issue). However, the adaptation of alterlife as a heuristic tool offers a potentially stronger concept to understand single industrial mining

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<sup>93</sup> Here it would be useful to flatten the distinction between “industry” and “infrastructure” as industry can serve as a type of infrastructure – both as a way of creating jobs in single industrial communities and as a way of supplying resources to make things in our everyday lives that we take for granted.



Figure 90: Sign on the gate leading to Twin Falls power house, August 17, 2019. A similar one was attached to the other side of the gate in Inuktitut and Innu-aimun (the languages of the Inuit and Innu, respectively). A copy of these two signs also hung by the gate to the Twin Falls intake station. PCBs were commonly used for insulators at Twin Falls and there was a massive spill while the power station was still in operation. During fieldwork at the site, these signs made me and my team distrust the water all around us, making us go to great lengths to procure water that we felt was safe enough for drinking, washing, and cleaning (Venovcevs and Williamson 2022, 272). All the same, PCBs and other petrochemical compounds are present in virtually all humans around the world (Murphy 2017; Liboiron 2021, 86-94).

regions since alterlife encompasses both the “enmeshment and enfleshment in infrastructures” (Murphy 2017, 498).

This may paint a bleak view – after all, how can we think of something else when industries are literally enfleshed into our bodies? However, according to Murphy, alterlife also offers room for affirmation and becoming “alter-wise” (Murphy 2018, 121-123). The concept allows for both becoming and unbecoming with others and with infrastructures grounded within the dual survivability and transformation of the past contained within the concept of *Nachleben*. Alterlife nuances environmental violence by refusing to subsume complex pasts into simple narratives, thereby compelling “speculation about futurity and potentials of being otherwise” (Murphy 2018, 122). The lives of humans and non-humans are thus inexorably intermingled within large regions of resource extraction – and the world in general – but there is also a constant opportunity for alternatives, room for altering the past into something different than it once was (for a brilliant example see LeClerc and Keeling 2015). Archaeology of a patchy Anthropocene, with all its vestiges and unevenness, allows us to bear witness to how alternatives become materially manifested in order to attain better understandings of the multiple ways human and non-human beings live with the challenging legacies of the past within a complicated present. Keeping this in mind, I move on to my next research contribution – on the relationship between things that are working just fine to those that are broken, and the tensions that arise when certain materials from the past are reused for new purposes.

## 5.2 The Working Fine and the Broken

The difference between living with things that are working fine and living with the stranded, ruined things of modernity has been a recurrent theme in all my articles (especially Article B) as well as my contention at how placemaking can occur inside modernist industrial communities (Section 4.6). At the same time, several articles (Article C and D) have dwelled on the tension between the capacity of things to be reused for alternative purposes and the resistance inherent within things to enact alternative becomings. To reiterate a debate that I pointed out in Section 2.2, there is a gradient between durable and flowing materialities and we should not be quick to claim one over the other, especially in light of tensions that arise in our handling of old things. This draws partially from Henri Bergson's idea of habit memory, where familiarization with things through motor skills makes objects fade into the background while the body learns to navigate tools, facilities, buildings, and cities (Bergson 2004). This also draws from Martin Heidegger's distinction between *zuhanden*, the "ready-to-hand", when things withdraw in our practical involvement with them, and *vorhanden*, the "present-at-hand", when they become conscious to us due to break down, malfunction, or are lost (Heidegger 1962; see also Olsen 2010, 68-121; Pétursdóttir 2014, 346-347). But, what happens when this distinction is blurred, when things that are still "ready-to-hand" and withdrawn from view are also, simultaneously, slowly beginning to show their age and untimeliness?

Some of this tension has been explored elsewhere, under the auspices of effective archaeology or material hauntology offered by Bjørnar Olsen (Olsen and Vinogradova 2019; Olsen 2022). There, it was posited that the material debris from the past – "the view from the windows, the sounds and smells from stairwells and corridors, façades and arrangements of apartment blocks themselves" (Olsen 2022, 18) trigger ghostly recollections of the Soviet past. It is a non-abandoned, lived with past, a past that does not offer a present, let alone a future with the clear breaks and newness as promised by modernity. Instead, it is a functional, faded past that carries on with a heavy existence and habit memory as echoed in my father's words at the beginning of this thesis – "*Ну, мы так и живём*" ("Well, that's just how we live"). Dramatic breaks in economic, social, and political continuity, while placemaking, may inevitably cause social and moral detriment to those experiencing a sudden ruination of the social and physical infrastructures that they have long taken for granted (Humphrey 2003, 91-93). Yet, without such breaks, there is the day-to-day reality of tacitly accepting life "as it is".

The acceptance of life as it is, within the useful but untimely past moves past the dichotomy between useful and redundant things. Instead, it points to how things can be both useful and superfluous (cf. Harrison 2021). In the office of the Director of Planning and Development for Labrador City, I was once shown a map of known ore reserves in the region, their expected impacted areas, and how they stretched under half of the town, including the recently built hospital. The town was useful but also ultimately finitely circumscribed and redundant<sup>94</sup>. If any of the mines that I studied here were to begin today, they would be built as workcamps and not communities, as attested by the proliferation of workers' barracks that I documented on the edges of the towns. The concept of alterlife can be valuable here as well since it flattens the difference between the working, the broken, and the not-yet-broken by recognizing human and non-human entanglements within various

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<sup>94</sup> The inevitable consumption of Labrador City by its associated mine is a common theme around the world. Mines often make their communities superfluous and devour them. The case of Kiruna, Sweden is well-known, but see also works by Storm and Olsson (2013) and Leech (2018).

industries, regardless of their status. Life has already been altered by these facilities, will continue being altered, and must continue to exist within altered states.

However, it is noteworthy that, as observed in my research, the scope of alterations only “lights up” (Heidegger 1962, 102) when there is a break, an emergent problem, or an excess that becomes too much to ignore. As demonstrated in Article D, for example, concerns regarding mine waste in Sør-Varanger did not come to the fore in the local newspapers until the system was on the verge of changing its operations (like moving tailings disposal from Langfjorden to Bøkfjorden) or until the mine shut down entirely (as with the waste rock). It was only then that the material was perceived as excessive or threatening and that concerns grew to address it. This is, of course, not universal. The (mostly Indigenous) communities living deeper into Langfjorden and not directly involved in the mining and processing, were concerned about mine waste from Sydvaranger as early as 1910 (see Section 4.2).

Transformations under alterlife can become normalized, laying the ground work for more alterations even if it may lead to further environmental degradation and decay (for a similar argument see Wråkberg 2019 on how pre-existing brownfields enable further development). When the Wabush mine shut down in 2014, it was the lack of noise and dust that was uncomfortable. The return of dust with the mining in 2018 was a visual stimulus of things working fine again (Article D)<sup>95</sup>. As Alfredo González-Ruibal reminds us – how the end of the world looks differs from community to community (2019, 29).

However, on a long enough timeline, ruined and disused things can become normalized in the landscape. This is seen with the aforementioned mine tailings field in Langfjorden, where in recent years the discourse has shifted from it being a threat to the fjord to one of a potential, albeit unwieldy, economic opportunity. Meanwhile, it has also become a destination, both for occasional hikers and occasional reindeer (Figure 91), who view the place in their own unique ways. Parallels can be drawn to the vestiges of ancillary industrial operations, where their original functions have been disarticulated from their current uses (Article C) and where gentrification of industrial spaces displaces both the former industrial workers and “alternative” users that arrive in the wake of deindustrialization (Storm 2014, 127-151; Schofield and Rellensmann 2016). In my research, this is most visible in the “sand pits” behind Wabush, as even the toponymy of the place disassociates them from what they were before. Their current post-industrial states are such that they enfold people into alternative alterlives with few overt mnemonic hints as to what was there before leaving it to the archaeologists to recognize them for their previous uses. As argued by Lars Frers, it is the sudden absence of a former presence that is noticed (2013, 434) – it is the end of industry that comes as a shock. Half-life of deindustrialization notwithstanding (Linkon 2018), on a long enough timeline former industrial operations fade and transform to become something else that eventually becomes familiar.

To avoid the shock of shutdown, and as a way of prolonging things’ existence within the grey zone between working fine and ruination, objects can be mothballed (Article E). Living with mothballed things opens new tensions, like the slow forgetting of how to keep things at hand and the things’ eventual decay and releasement (discussed more in Article E). At the same time, mothballing

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<sup>95</sup> This lies in contrast to the dust that blows off the Wabush mine tailings which can be thought of as both a consequence of things working fine and the waste management system being broken (Article D).



*Figure 91: Reindeer tracks on mine waste, intermingled with pellets from the Sydvaranger plant, July 27, 2020.*

serves as a vector for cruel optimism (Beer 2016), leaving things supercharged with expectation. This was seen in Sør-Varanger, where parts of the community were expecting the mining to return. Yet this indefinite waiting can become the default state of things – a normalized indefinite postponement that is both withdrawn and untimely.

In light of this discussion, we must acknowledge that all industry is temporary and temporal in nature. The world is constantly going through industrialization and deindustrialization as industries are built and dismantled, while the forces of production are shifted around the globe (Orange 2015a). This is especially poignant for single industrial towns that have been described as a “phase” to economically colonise outlying regions (Storm and Kasperski 2017, 43). Mining too has been framed as a temporary land use, meaning that, ultimately, all mines will close and conditions must be set to deal with their legacies (Keenan and Holcombe 2021). Considering the ongoing “green” shift that requires much more “critical minerals” such as lithium, nickel, and titanium for batteries and high-end electronics (European Commission 2020; Government of Canada 2021; Applegate 2022), and increased calls for underwater and asteroid mining to meet those demands (Chen et al. 2019; Perissi and Bardi 2021, 139-143; Butkevičienė and Rabitz 2022), it can even be postulated that the age of mining has only just begun.

However, as seen in this study and the work of many other scholars (for example, see Robertson 2006; Hoskins 2015; Berg et al. 2016; Ureta 2016b; Baeten 2017; Keeling and Sandlos 2017; Sandlos et al. 2019; Avango 2021), legacies of past mining continue to linger and exert their effects unto the landscape. Likewise, it cannot be said that, just because single industrial towns were built as a “phase”, they no longer exist or have transitioned into new economic arrangements (cf. Storm and Kasperski 2017, 43-44). The single industrial towns in my case studies are a testament to this. They continue to exist on the political peripheries of states and entangle regions into resource extraction and further alterlives.



This is not done perfectly. As demonstrated throughout my research (Articles B and C; Venovcevs 2022, 234-241), vestiges accumulate and linger in resistance to modernist aspirations to create a clean slate, a *terra nullius*. Old things do not easily fit into the new presents. For example, the disused hospitals in Labrador City and in Kirkenes that have both struggled to find alternative owners and alternative uses (Figure 92 and Figure 93). Imperfect transitions continue to carry effects, as shown by infrastructures that, even if unbuilt, postponed, ruined, or unfinished, carry with them the potentials for actions and reanimations (Peyton 2011, 2017; Wakefield 2018; Sizek 2021). Within alterlife, infrastructures happen to humans by entangling them in their works, rather than the other way around. Regardless of their original design, pasts – even broken and ruined ones – affect humans and non-humans and force them to respond.

This ultimately poses a new question that I have pondered since the start of my PhD research project – where does the usefulness of a thing stop and alternative uses take over? When can a thing or industry be considered abandoned? And ultimately – how does one do an archaeology of abandonment? I tackle this question in the next and final section.

### 5.3 An Archaeology of Non-Abandonment

In an early article from 2004, Gavin Lucas asks the question –

*Does the archaeological context not have to be, by definition, dead? Archaeology as autopsy. Consider this: even if archaeologists decided to pay attention to the very surface of an urban site – the tarmac, the service pipes, the concrete – why should it stop there? (Lucas 2004, 116)*

Lucas then proceeds to imagine an archaeology as a lifecycle – from the excavation of the very deep past, to the construction in the present, to the use of the building, and to its eventual destruction. In this sense, I tried to do what Lucas called for, while further questioning the traditionally limited role to the power of the archaeologist – why does archaeology have to be about the study of superfluous things? While I did not have a life’s worth of time to do a PhD on the full life cycle of single industrial communities, I performed a multi-sited archaeology on an assemblage of used, disused, and reused places and installations within resource peripheralized (sub-)Arctic regions in three different countries, where legacies of industrial modernity were still ongoing but uneven.

In so doing, I approached my case studies in a similar fashion to what Gavin Lucas calls for – treating everything from the ground up as heritage worthy of archaeological attention. In studying this material, I adopted the definition of heritage from the *Unruly Heritage* project. Here, heritage is the material residues of all pasts accumulating in the present, regardless of their perceived historicity, value, (in)significance, or human interest (Olsen and Pétursdóttir 2016; Pétursdóttir 2017; Olsen and Vinogradova 2019; Figenschau 2019; Farstadvoll 2019b, 2022). The choice to apply this definition was not a critique of alternative conceptualisations of heritage (for examples see Smith 2006; Storm 2014; Harrison and Sterling 2020; Harrison et al. 2020; Holtorf and Högberg 2021), as those perspectives are also valuable. Rather, it was chosen to capture *all* things within single industrial mining communities as part of doing an archaeology of them – especially since very few things in my case studies are formally designated or conceived of as valuable and significant heritage.



Figure 92: Disused former hospital in Kirkenes, currently waiting for new use, July 19, 2020.



Figure 93: Disused hospital in Labrador City, also currently waiting for new use, June 19, 2021.

This expanded definition allowed me to better examine the past and its ongoing impacts in these regions than the alternative definitions of heritage since, under those definitions, the ascription of heritage value to things hinges upon them being defunct, disused, and superfluous as opposed to changing, ongoing, and undergoing transformations (Storm and Olsson 2013, 702-703; Farstadvoll and Nilsen 2020). Formal heritage designation in those circumstances, as for example at the Sydvaranger mine, has focused on the notion that heritage and ongoing industrial operations are diametrically opposed to each other and that most industrial buildings cannot be called heritage since mining could restart (Arvola 2004; Berg et al. 2016, 293; but see also Valestrand 2014). Therefore, a more democratic turn to things was needed where *everything* in some way constituted the heritage of the past, the present, and the unfolding future.

However, this pivot toward including non-dead things in my study proved a major challenge in the early days of my research. As noted by Lucas, archaeology is almost always an autopsy and archaeologists (myself included) are trained to comfortably operate with dead things<sup>96</sup>. This is demonstrated, for example, with Michael Schiffer's classic work, which separated material between the systemic context of human behaviour and the archaeological context of things (Schiffer 1972)<sup>97</sup>. More recently, Alfredo González-Ruibal asserted that archaeology starts where history ends – i.e., after the site has been abandoned<sup>98</sup> (2019, 132). While this is changing, in large part with incorporation of oral accounts (for examples see Harrison and Schofield 2010, 75-78; Orange 2015b; Dawdy 2016; Caraher et al. 2017), it was still difficult to wrap my mind around how to archaeologically deal with large communities and regions with thousands of people that were constantly in motion. How does one do an archaeology of living, breathing industrial communities?

Some work has been done on the archaeology of becoming. For example, the above-mentioned work by Rodney Harrison on surface assemblages lays the theoretical groundwork for an archaeology “in and of the present” and “for the future” (2011, 158-160; see also Harrison 2016). While theoretically foundational, the article is less specific on how to methodologically deal with materials that are always in the process of reconstituting themselves – especially for a discipline that is built upon measuring, counting, photographing, and documenting things that are assumed to have laid static for hundreds and thousands of years (or even since yesterday, as much of contemporary archaeology started with sorting, counting, and measuring garbage from a consumer society, see Rathje and Murphy 2001). The short photo essay by Hilary Orange on *kojo moe*, the industrial night-time tourism in Japan, is of use here as it captures an everyday ongoing fascination with the industrial sublime of night-lit factories (Orange 2017; for night-work and daycentrism see Orange 2018). While there was little tourism in my case studies, except for once running into some southern Norwegian tourists by the Sydvaranger mine who asked me and a friend where they could take pictures of “some big machines”, the work of trying to understand everyday engagements with contemporary industry is inspiring. Another way forward is the work of “process recording”, put forward by Richard Hayman and Brian Malaws, which calls for archaeologists to record industrial and social processes within

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<sup>96</sup> Or at least on the assumption that things are dead.

<sup>97</sup> Though to be fair, much of Schiffer's later career has been devoted to “living” things (Skibo and Schiffer 2008; Schiffer 2017).

<sup>98</sup> A similar idea has been recently put forward by Hein Bjerck. He contends that things enter the archaeological realm when they are disentangled from humans (Bjerck 2022, 149). In this thesis, I function on a different assumption – namely that things can remain archaeological even when they remain within the human realm.

ongoing industrial operations in order to better understand human and industrial conditions within factories in the past (Hayman 1997; Malaws 1997; see also Symonds 2005). Machines and buildings were seldomly used as drawn or designed. Rather, they often required nuanced forms of human-machine interaction on the factory floor (Hayman 1997, 72-73). Both Hayman and Malaws contend that understanding such subtleties and having “objective” historical documentation of function would provide valuable research tools to future researchers.

Part of the results in my research could thus be considered a form of process recording by undersatnding single industrial towns (Article B), ongoing activities within vestigial industrial operations (Article C), spilling and leaking wastes (Article D), and mothballed operations (Article E) from “inside of the event” (Symonds 2005, 39; Tilley 2008). Thick descriptive accounts are of use here because they capture these places as they are at the moment for the assumed benefit of future researchers to come (Venovcevs 2022; Venovcevs and Williamson 2022). At the same time, as all the places I visited do not lie within a closed (i.e., buried) context, parts of them were experiencing rapid processes of becoming and unbecoming. This is perhaps best exemplified in my revisits of the Wabush sand pits between 2019 and 2021, where numerous fire pits, jumping ramps, and car wrecks have disappeared while others emerged (Article C) (Figure 94). It can also be seen in the litter surveys between early and late summer of 2021, where I documented materials emerging, moving, and disappearing on the edge of Little Wabush Lake, creating a type of “material respiration” that is in parallel to other mine waste in the region (Article D; Venovcevs 2022, 242-250).



*Figure 94: A pile with a car, snowmobile, several appliances, associated parts, and brush within the Wabush sand pits, August 20, 2019. This had disappeared when I revisited the site in 2021.*

While similar such quantitative studies could not be carried out in other places, due to time and visitation constraints, it was enough to document rapid movement among these material assemblages (for similar observations see Pétursdóttir 2014, 348-352; Farstadvoll 2019c). These observations stand in stark contrast to ideas that the archaeological past is somehow frozen or static –

apart from a few human and non-human “disturbances”. Rather, as pointed out by numerous scholars (Harrison 2011; DeSilvey 2017; Pétursdóttir 2017; Farstadvoll 2019a; Harrison and Sterling 2020; Bangstad and Pétursdóttir 2021), the past (i.e., heritage) is always in the process of assembling and reassembling itself, often without deference to human wishes, desires, or controls. This, however, happens at different temporalities – objects move more quickly than buildings, which remain recalcitrant for longer despite the wishes of their users and occupants. These circumstances make the concept of a dead past that is subject to autopsy increasingly untenable even within more traditional subdisciplines of archaeology. In this light, my archaeological examination of living, breathing communities may not seem so alien. All places subjected to archaeological attention are in a sense living and breathing, if not for the simple fact that they encased in a living, breathing matrix we call “soil” (de la Bellacasa 2015; Salazar et al. 2020).

If the past is in the process of constantly reassembling itself, where does this leave archaeological interventions? It strikes me that those interventions, be they surface survey or excavation, fieldwalking or aerial reconnaissance, will always happen at one point in a long continuum of a site’s transformation (Figure 95). The same site, visited at a different time, will inevitably look more or less different given the ongoing nature-cultural forces at play. It does not matter if a site is on the surface or buried, recent or ancient. Things are not merely resting where they were deposited but are subject to “drift” (Pétursdóttir 2018a). Thus, the site will always appear different when it is observed at one point or another. If I were to return to Labrador City this year and resurvey the areas I visited, I would document slightly different assemblages. Likewise, if today I were to excavate the sites I excavated years ago, like for example those that I studied during my Master’s thesis (Venovcevs 2017), the assemblages would be slightly different due to decomposition, plant and animal activity, and developments within archaeological tools, techniques, and attentiveness (to say nothing of my own personal growth as an academic).

In this context, my worries from the early days of my project on how to do an archaeology of active communities were unfounded as the constant motion of people and things affects all sites, not just contemporary surface ones. No site is truly dead. No site is truly devoid of human and non-human interactions. Acknowledging this taps into a theme that I bring up at the end of Article E – is there such a thing as an abandoned site? To return to a topic elaborated in that article, coming from French, the term “*a bandonment*” refers to the negation or relinquishment of control – largely in a legal sense (Boschman and Bunn 2018, 8-9). However, the concept of abandonment has grown incredibly untenable, given the ongoing, unbroken relations to so-called “abandoned” places by Indigenous communities (Colwell-Clanhaphonh and Ferguson 2006; McNiven 2017), the affective power of ruins and disused places (Gordillo 2014; González-Ruibal 2017), the shifting emphasis on the ecological and material successions of place (Farstadvoll 2019a, 2021), the more-than-human agency of disused things in their afterlives (Pétursdóttir 2014, 2017), as well as protracted postponement under mothballing (Article E) and socio-political acts of active neglect (Martínez 2021).

Is it time to abandon abandonment? That is indeed my argument in Article E. While maybe not in a legal sense, as the relegation of legal control and authority is certainly something that happens<sup>99</sup>, shelving abandonment as an uncritical shorthand for a site devoid of human activity and a place for archaeological attention (a la Schiffer 1972) can provide a valuable heuristic tool to

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<sup>99</sup> Though it should be noted that legal abandonment probably happens much less often than we would like to believe, given cases of protracted mothballing, ongoing relations to formerly occupied places and things, and different understandings of relinquishment.



Figure 95: Detail of moss growing over the concrete foundations of the former machine shop at Twin Falls, slowly subsuming the objects left behind on top of it, June 10, 2021. How would this look different if I had arrived 50 years earlier or 50 years later?

understanding the *Nachleben* and alterlives of things (for more on this see Article E). Humans and non-humans must constantly move and negotiate their lives around large and accumulating assemblages of used, dysfunctional, defunct, useful, valued, and dejected things. Being attentive to these movements and negotiations is what gives archaeology (and its neighbouring disciplines like heritage studies, anthropology, and geography) its political, social, economic, and scientific relevance. There is a sharp critical edge to moving past dead, superfluous things.

The non-abandonment of things, and the need to constantly negotiate with their existence, is perhaps extra poignant in what I studied as part of this thesis – single industrial mining towns and regions. This is because of the argument that mines never really run out of minerals but rather run out of viable concentrations of ore, which leads to cycles of mothballing and reactivation with changing economic and technological circumstances (LeCain 2009). Dead mines always have the power to come back (Keeling and Sandlos 2017). With this in mind, it can be argued that it is the various concentrations of minerals moving, concentrating, corroding within the heterogeneous body of the earth's technic plates that intersect and get reactivated with human and non-human agents from time to time. Economically valuable concentrations of minerals are never abandoned. Rather, humans dig into them on occasion during a long continuum of the earth's geologic trajectory. To extract that metal, humans have sometimes built slave communities or shanty villages, at other times they have built company towns or work camps. Yet, since the start of extractivism in the Stone Age and its expansion through the Copper Age, the Bronze Age, the Iron Age, and the Petroleum Age, human entanglement with the minerals from the earth has only grown – and increased exponentially within the last few hundred years. Today, humans are entangled with these minerals more than ever, but not homogeneously. This leads to spatial and temporal continuities and discontinuities, especially on the edges of (super)modernity where much of the extractivism happens. Tuning into these heterogeneities

opens the door for better ways of living with this unruly heritage in this period that many have now started to call the Anthropocene.





## 6 Conclusion

Since I started the introduction text of this thesis with my father, it seems fitting to end it with my mother who currently lives in an early-2000s<sup>100</sup> suburb near Fort Worth, Texas (Figure 96). While Fort Worth and Labrador West are 3,300 kilometres away from each other, there is something familiar in their design – a Garden City plan (Section 4.6) that can create a phenomenological experience of placelessness through uniform planning, a repeating sequence of limited housing forms, and kitsch – many of the same things Edward Relph critiqued in 1976 (Relph 1976). The details are different – most houses in Labrador West are built of wood and prefabricated components rather than brick, instead of air conditioning they have heating, instead of sprinklers they have snowblowers, instead of pomegranates and persimmons in the backyards they have black spruce and alders (Section 4.7.2). Yet the wide driveways, large vehicles, drive-throughs, strip mall shopping plazas, and rapidly built homes share an aesthetic based on similar planning principles<sup>101</sup>.



*Figure 96: My home from 2003-2006, where Larisa and Clayton Kale (my mother and stepfather) currently reside, January 5, 2014.*

These places are also connected by economics and politics. As I outlined in Section 4.3, it was the need for iron in the United States that gave rise to the single industrial mining communities in western Labrador. If western Labrador is a resource peripheralized region, then the suburbs of Texas

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<sup>100</sup> 2003 to be exact – we watched as the house was built. At 19 years old, the house has become part of my own lived with and experienced heritage (for family archaeology see Ulin 2009; Bjerck 2014, 2022; Brake and Brake 2016, 2017, 2018; Gjerdrum 2021).

<sup>101</sup> Note the similar feelings evoked through a connection between Riga and the Kola Peninsula, and the legacies of Soviet planning in both (see Section 1.1).

can be one of the places where the resources flow into. You might not recognize them as such since those resources come processed as ready-made products in the form of nails, joists, cars, surgical steels, and a variety of other items. By that point, the concentrations of iron-rich chert formed by colloidal silica laid down 2.3 billion years ago (Rivers and Wardle 1979) would have traveled many times across the earth and been transformed several times from mineral concentrations in crushed rock, to iron fines, to pellets, to steel, to a variety of usable products. They may have mixed with metals from other regions – like the iron from Sydvaranger (before it was shutdown in 2015) or smelted copper and nickel products from Severonickel – thus making the things no longer identifiable with the landscapes of western Labrador, Sør-Varanger, and the Kola Peninsula.

This is one of the “god tricks” (Haraway 1988, 581) of modernity – turning everything into commodities, upholding distance between the origin and the destination while simultaneously flattening physical distances through travel and communication infrastructures (see the pellet discussion in Article D and in Section 4.7.1). One of the aims of contemporary archaeology, therefore, is to expose these simplifications. This involves showing and documenting the complexity in the transformations of the present (González-Ruibal 2019, 161-162), and analyzing the textures that are accreting through the accumulations of vestiges in spite of desires to create clear lines of separation between the past and the present.

In this PhD project, I set out to do just that. The aim was to archaeologically understand three (sub-)Arctic regions in Norway, Canada, and Russia that have been transformed by twentieth-century northern industrial colonisation through the resource extraction industry. Despite ambitions to create prosperous, settled frontier regions, these colonisation efforts were truncated and imperfectly carried out because of wider economic, social, and political changes. However, the towns and sites established through this colonisation remain and the regions often linger on as resource peripheralized regions (Section 4.1). Rather than being in a state of vivid flux (Ingold 2011, 2012), their materiality can be described as “sticky” (Olsen 2013b, 185-186) in regards to the possibilities they actually afford. While certain things, smaller objects, are constantly moving around, the physical environment of resource extractive regions remains stubbornly recalcitrant (Article D).

As such, this thesis addressed four major questions:

- Q1: To what extent did material legacies emerging from a period of significant government interest and investment in the regions survive into the present and how do they continue to persist in a time where investment into social services has declined and industrial labour has become more flexible?
- Q2: What tensions arise when things from this prosperous past find new purposes in the present or remain recalcitrantly redundant?
- Q3: What does the urge to give things from the past “usefulness” tell us about the temporal and geographical boundaries of the resource extraction industry in the (sub-)Arctic?
- Q4: How does one do an archaeology of non-abandoned sites?

In order to address these questions, I relied heavily on fieldwork, but also used archival work and selected interviews, all joined together within the framework of multi-sited archaeology and perspectives from new materialist thinking.

I addressed Q1 in my articles by paying attention to past and ongoing economic arrangements (Article A), the heaviness of built environments and city planning (Article B), the unexpected afterlives of ancillary impacts of resource development (Article C), the difficulties of finding reuse, repurposing, and management of mine waste (Article D), and the indefinite waiting for mothballed

things to find use again (Article E). In Articles B, C, and D, I tackled Q2 by showing how things from the past do not always fit neatly into the present – through the imperfect reuse of buildings and monuments (Article B), the new lives of disused quarries (Article C), and the unfulfilled ambitions to make wastes useful (Article D). This is echoed by the focus on mothballing in Article E, where the expectation of a different, more prosperous future forces industrial enterprises to simply sit there, waiting, often becoming increasingly obsolete. For Q3, I addressed how the footprint of industrialization continues to spread itself chronologically and geographically through past dependencies (Article B) and vestiges (Article C), while questioning if things could ever be abandoned (Article E). This speaks to the constant possibility of reactivation and reanimation of things. Finally, I tackled the last question in all my articles, by working with a non-abandoned past that continues in the present and seeing how it can be understood with the means and methods of archaeology.

I have used this introductory text to work through several conceptual spheres of knowledge, including chronological concepts (Section 2.3), an archaeology of contemporary industry<sup>102</sup> (Section 2.4), multi-sited archaeology on traditional Indigenous land in the period of the COVID-19 pandemic (Section 3), and archaeology of non-places and placelessness and the ways they become subverted through patches and vestiges (Sections 4.6 and 4.7). I have also offered extensive descriptions of the historical developments in the three case studies I investigated (Sections 4.2, 4.3, and 4.4). In addition to this, my original contributions to knowledge have been summarized and developed through the themes that I have called “Pasts in the Present” (Section 5.1), “The Working Fine and the Broken” (Section 5.2), and “An Archaeology of Non-Abandonment” (Section 5.3).

To take these in turn, “Pasts in the Present” addresses both Q1 and Q2 by tying Marek Tamm’s development of the concept of *Nachleben* (Tamm 2015; Tamm and Olivier 2019) with Michelle Murphy’s notion of “alterlife” (Murphy 2017, 2018) to show how the industrial past literally becomes enmeshed and enfolded into the present – which is true everywhere but is especially relevant within single industrial mining regions. While this may sound somewhat dismal, through Murphy’s notion on acting “alter-wise” (Murphy 2018, 121-123) and my own conceptualisation between “The Working Fine and the Broken”, I show how the patchy, uneven Anthropocene also creates room for imagining and enacting different futures among the heavy impacts of a present past. With this second theme, I speak to Q2 and Q3 by rejecting the dichotomy of useful and superfluous things, showing instead how they occupy a spectrum. There is often a tacit acceptance of material influence or a hegemony of the past, as pointed out in the story of my father (Section 1.1), an acceptance that has elsewhere been framed as an “effective archaeology” (Olsen 2022). One possibility for archaeology, then is to pry open these taken-for-granted realities to allow for alternative imaginations of things in the present. Finally, I respond to Q4 by rejecting the long-standing notion and my own disciplinary training that archaeology is about autopsy by outlining “An Archaeology of Non-Abandonment”. It is the durability of things that allows them to deviate and disturb while also containing difference, resistance, and the potential to be (re-)mobilized in future assemblages. This leaves room to contemplate the continuity of places – how things in the present develop in the footprints of the

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<sup>102</sup> The main intervention of an archaeology of contemporary industry is not a focus on what becomes of human things after they exit our use but rather a focus on regions where things are produced or the resources for them are extracted. This draws on the fact that most waste is created long before things enter human use and longer still before those things are discarded (Liboiron and Lepawsky 2022, 35-39).

past<sup>103</sup>. Ultimately, this leads me to reject the idea of abandonment as a useful archaeological and heritage concept because I do not think it serves a useful purpose anymore. By rejecting abandonment as an uncritical shorthand, we can create a more powerful heuristic understanding that opens new ways of developing archaeological interpretations about how the past carries on in the present.

While I feel like I addressed several points of knowledge that would be of interest to scholars in many disciplines, the most important part of this project for me has been the fact that my work was deeply situated within my personal life history (see the Acknowledgements and Sections 1.1 and 6), within the period I was working (Section 3.1), and within my methods of studying and exploring my case studies (Section 3.2). In a sense, all archaeology is situated, arising as a product of complex interactions between the researcher, the place, the time, the things themselves, and the multitudes of life events and encounters that lead up to that moment (Bjerck 2022). Being explicit about this radical situatedness makes archaeology more interesting, more compelling, and more capable to comment on the present. Ultimately, I too am the “unruly heritage” of Soviet and North American modernity while this thesis is becoming the heritage (or the vestiges?) of the Norwegian welfare state. The constellations of industrially-produced things around me, things of iron, nickel, and copper, stand out as I write these final words of this thesis – constantly involved in and witnessing the process of being enmeshed and enfleshed in the “alterlife” of the Anthropocene. How do we become “alter-wise” (Figure 97)?



*Figure 97: Being “alter-wise”, a bench among some ruderal species within the never-abandoned Rizh-Guba quarry, July 19, 2019.*

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<sup>103</sup> A “past dependency” (Article B).

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## Abstracts: Articles A, B, C, D, and E

### Article A

Venovcevs, A. 2020. "Extracted Frontiers: A Call from the North." In *Deterritorializing the Future: Heritage in, of and after the Anthropocene*, edited by Rodney Harrison and Colin Sterling, 311-317. London: Open Humanities Press.

From microchips to smartphones to electric cars, humanity's dreams of techno-salvation are built on the crude materiality of extracted metals and minerals. This extraction conveniently avoids large population centres in affluent Western democracies and instead clusters around the world's social peripheries. This slam poem, first presented as a spoken performance at the 8th Winter School of the Estonian Graduate School of Culture Studies and Arts in Tallinn, represents a call from the north – one of the largest frontiers for modern mining activities. By drawing on a few examples of past and present extractive landscapes, it aims to highlight the Arctic's physical, environmental and social costs for our technological transcendence. New ways of understanding humanity need to be rooted in the real material costs and consequences of our new and future technologies.

### Article B

Venovcevs, A. 2020. "Living with Socialism: Toward an Archaeology of a Post-Soviet Industrial Town." *The Extractive Industries and Society*. 8(4):1-9.

While the Soviet Union collapsed in 1991, it left a heavy legacy in the form of industrial towns, residential buildings, infrastructure networks, and ecological damage that extends the Soviet Union's effective history into the present day. This paper explores this legacy through the perspective of contemporary archaeology to better understand how material culture from the Soviet period is being reused in the present concerning the resource extractive industry. Research focuses on the nickel, copper, and cobalt-processing town of Monchegorsk, Murmansk Oblast in northwest Russia. By employing a combination of historical sources and fieldwork, the paper demonstrates how things from the Soviet past are being repurposed in the post-Soviet present. This in turn limits possibilities for imagined possible futures by its residents. The paper concludes by highlighting the need to pay attention to the material culture of the resource extraction industry itself when studying its persistent legacies.

### **Article C**

Venovcevs, A. in press – 2023. "Industrial Vestiges: Legacies of Ancillary Impacts of Resource Development." *Historical Archaeology*.

This paper offers a different way to understand the heritage of extractive industries by exploring the material afterlives of what has been termed the ancillary impacts of resource development – a variety of quarries, woodcuts, transportation corridors, and power lines that surround industrial operations, especially those created in areas distant from established industrial population centers. To study this, the paper expands upon the concept of “vestige”, to explore the landscapes around two single industry mining towns in Kola Peninsula, Russia and in Labrador, Canada by specifically focusing on two abandoned quarries located in each case study. The results highlight the need to explore developments that trail behind industrial settlement of colonial hinterlands. By focusing specifically on the afterlives of such developments, the paper demonstrates how chronological and geographical boundaries of resource extraction are blurred over time creating a deep, unruly, self-perpetuating set of legacies.

### **Article D**

Venovcevs, A. 2022. "Ambiguous Matter: The Life of Mine Waste." *Journal of Contemporary Archaeology*. 9(1):39-63.

This paper explores mine waste that originates from resource extraction by specifically focusing on waste rock, tailings, dust and material culture from the resource extraction industry. By drawing on examples from fieldwork, archives, local media commentary and limited interviews from two iron-mining regions in Arctic Norway and sub-Arctic Canada, this paper follows mine waste as it routinely transgresses attempts to be managed. Mine waste spills out of its prescribed sinks, it oscillates between being considered waste to heritage to potentially valuable commodity, and it blurs the boundaries between spaces dedicated for mining and for non-mining. In following these trends, the paper calls for attentiveness to the ambiguous materiality of mine waste and how heterogeneity and excess circumscribe attempts at easy characterisation and management of the ubiquitous wastes that come to dominate mining regions. As such, archaeological approaches to studying mine waste can illustrate how mine waste becomes the default, lived-with condition of life in regions dominated by ongoing mining operations.

## Article E

Venovevs, A. Manuscript. "Between Use and Abandonment: An Archaeology of Mothballed Industries." For *Unruly Heritage Book*, edited by Bjørnar Olsen, Stein Farstadvoll, and Geneviève Godin.

This paper explores the topic of mothballing and how it relates to archaeology and heritage. Mothballing – a term that means taking a facility, piece of hardware, clothing, or personal item out of active use or service, setting aside or postponing for an indefinite time – has become a popular response to uncertain futures with businesses, militaries, and personal possessions. By drawing on two case studies, the Sydvaranger mine in northeastern Norway, mothballed since 2015, and the Twin Falls hydroelectric dam in northeastern Canada, mothballed since 1972, this contribution explores what happens to industrial things under the condition of mothballing. In so doing, it tackles a related and often discussed concept within archaeology and heritage – abandonment, which is at times seen as a necessary precondition to designate something as a heritage object or an archaeological site. By demonstrating how things gradually fall into disrepair, become untimely, and slowly disentangle from human intention, this paper shows how controlled and economized facilities become involuntarily released from being useful. Ultimately, the idea of mothballing challenges whether it is useful to talk about abandonment at all or whether it is more useful to consider indefinite postponement as the default condition of superfluous things.



## **Article A**



## *Chapter 11*

### **Extracted Frontiers: A Call from the North**

ANATOLIJS VENOVCEVS

From microchips to smartphones to electric cars, humanity's dreams of techno-salvation are built on the crude materiality of extracted metals and minerals. This extraction conveniently avoids large population centres in affluent Western democracies and instead clusters around the world's social peripheries. This slam poem, first presented as a spoken performance at the 8<sup>th</sup> Winter School of the Estonian Graduate School of Culture Studies and Arts in Tallinn, represents a call from the north – one of the largest frontiers for modern mining activities. By drawing on a few examples of past and present extractive landscapes, it aims to highlight the Arctic's physical, environmental and social costs for our technological transcendence. New ways of understanding humanity need to be rooted in the real material costs and consequences of our new and future technologies.

Hello everyone and thanks for your time,  
For my part I will be slamming in rhyme.  
I'm Anatolijs from UiT;  
I am here to tell you some history.

My work is in Canada, Labrador –  
And its tiny towns that mine iron ore.  
They were assembled in order to feed  
The hunger for steel and industry greed.

It was the fifties and we won the war  
But in so doing we ran out of ore.  
The new query as we raced for the stars –  
“Where to get stuff for tanks, buildings and cars?”

Labrador, Canada, cold and remote,  
A tundra traversed by foot or by boat.  
Snubbing the Innu who lived there before,  
A railroad was built in this quest for ore.

The valleys were filled and mountains were moved,  
An engineering feat the railway proved.  
Into the forests from north shore Quebec,  
For four hundred miles the path made its trek.

Forest fires were started, chemicals spilt,  
Rivers poisoned as this marvel was built;  
But at the railroad ends, new towns emerged,  
Car-based suburbs where no highways converged.

And mine ore they did in open-pit mines,  
Blasting vast craters in thin northern pines.  
Thus millions of tons was pulled from the north  
By folks who came to the Labrador Trough.

As a colony this venture was seen –  
Mines for settlement as farming had been.  
Some people got rich and goods were attained.  
Material gains, material drained.

Despite hard work, the glories were fleeting.  
A crash in the price left the towns bleeding.  
Some mines were closed while the rest were downsized;  
In a free market, precarity's prized.

However the mining heritage stays,  
The past continues in multiple ways:  
The paths, the craters, the buildings remain,  
The waters polluted, the caribou slain.

Yet memories of wealth and small town pride  
Make some past transgressions easy to hide,  
And it could be good news that prices rebound  
And more land is set as extractive ground.



There's new mines now too, not just iron ore –  
 There's nickel and cobalt in Labrador.  
 Rare-earth elements can also be found,  
 With new technology demands abound.

But now things are different, Labrador's changed,  
 Towns barely survive by new work arranged.  
 No settlements grow, the future's in doubt.  
 Most workers fly in, most workers fly out.

How this relates to the things we explore –  
 New futures, Anthropocene and much more?  
 My point is simple and comes from the north –  
 Remember the waste as we venture forth.

For instance energy, how green can it be,  
 When there's only waste for people like me?  
 In lands that get flooded, mined out and burned,  
 For carbon-free life so desperately yearned.

Or take something that we all have at hand,  
 Smart gadgets that meet our every demand.  
 But what can be said on this conception  
 When my friends do not have cell reception?

Thus gets constructed Anthropocene's dream  
 Through outpouring waste from central regime.  
 To build and sustain a tech-future charm  
 While outsourcing the material harm.

We get all the waste and reap few rewards.  
 Material culture outlasts all words.  
 And in far futures when we are all gone,  
 Our toxic legacies will linger on.

Thus to build the new post-humanities  
 We can't just ignore externalities.  
 I am talking pollution, destruction,  
 Suicide, drugs and social dysfunction,

Violence, poverty, the boom and the bust,  
Resettled, removed towns turning to rust,  
Waste in the north for the southern demand,  
Wealth built on stolen Indigenous land.

This is a call and my message to you –  
Heed the material legacies too!  
Waste is unequal, our lives aren't alike,  
Tech-futures are suspect, so drop the mic.



Figure 11.1 — Map of Labrador showing its relationship to Canada along with related towns and infrastructure. (Map by Anatolijs Venovcevs).



**Figure 11.2** — Trailer home subdivision, Labrador City, Labrador, an example of fast-built modernity. (Photograph by Anatolijs Venovcevs).



**Figure 11.3** — Carol Lake mine, Labrador City, Labrador. The trucks in the photo are 7.7 metres high and typically carry 30 tons of rock per load. (Photograph by Anatolijs Venovcevs).



Figure 11.4 — Closed grocery store Labrador City, Labrador. (Photograph by Anatolijs Venovcevs).



Figure 11.5 — An abandoned rail line, Wabush, Labrador. (Photograph by Anatolijs Venovcevs).



Figure 11.6 — Keep-out sign written in four different languages, Happy Valley-Goose Bay, Labrador. (Photograph by Anatolijs Venovcevs).

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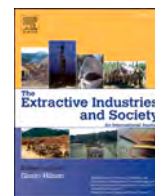
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## **Article B**







Original article

## Living with socialism: Toward an archaeology of a post-soviet industrial town

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## ABSTRACT

While the Soviet Union collapsed in 1991, it left a heavy legacy in the form of industrial towns, residential buildings, infrastructure networks, and ecological damage that extends the Soviet Union's effective history into the present day. This paper explores this legacy through the perspective of contemporary archaeology to better understand how material culture from the Soviet period is being reused in the present concerning the resource extractive industry. Research focuses on the nickel, copper, and cobalt-processing town of Monchegorsk, Murmansk Oblast in northwest Russia. By employing a combination of historical sources and fieldwork, the paper demonstrates how things from the Soviet past are being repurposed in the post-Soviet present. This in turn limits possibilities for imagined possible futures by its residents. The paper concludes by highlighting the need to pay attention to the material culture of the resource extraction industry itself when studying its persistent legacies.

## 1.0. Introduction

While the Soviet Union dissolved as a political entity in 1991, the material transformations brought about by over seventy years of Soviet ideology endure in the present as lasting legacies over its large territory. As Bjørnar Olsen points out, in the former Soviet Union there is “effective historical memory [which] ranges from the gauge of railways, Stalin and Khrushchev era apartment houses to power grids and city planning” (Olsen, 2013a, p. 215). Thus, a Soviet legacy remains firmly rooted in the heritage of its built environment while a similar environmental heritage pervades in the accumulation of industrial deserts, overfished waters, dammed rivers, and impoverished fields (Bruno, 2016; Josephson, 2014; Josephson et al., 2013).

Political dissolution and economic reorientation also created an excess of material culture that proved unwieldy in a new capitalist system leading to abandonment or rearrangement of Soviet things to fit this reality. Abandonment and rearrangement can be seen in things like abandoned industrial towns (Andreassen et al., 2010), depopulated fishing villages (Olsen and Vinogradova, 2019), decommissioned military bases (Boldāne-Zelenskova, 2017), and symbols of the Soviet empire (Martinez, 2018). Meanwhile, Thomas Lahusen has argued that Soviet socialism was built as a ruin from the start given the fact that the best materials and the best workers were used to construct industrial

buildings and machinery, leaving the worst quality materials for housing (2006, p. 744). Meant originally as temporary solutions, these buildings have become permanent due to economic collapse of the Soviet Union that hindered their repair and replacement. The point of departure for this article is to explore what happens to accumulations of Soviet material legacies when being drawn into a capitalist extractive economy. What possible new perspectives can arise through an archaeology of the repurposed Soviet heritage within single industry mining towns and how can archaeology contribute to the neomaterialist turn when studying the past and its impacts in the present?

To explore this question, I use the town of Monchegorsk, a single-industry nickel, copper, and cobalt-processing town in Murmansk Oblast in northwest Russia (Fig. 1). Located in the centre of the Murmansk Oblast, Monchegorsk represents one of hundreds of single-industry towns founded in the far-flung corners of the Soviet Union that still endure in modern Russia as a present-day community serving much of its original purpose.

The fieldwork for this study consisted of two site surveys to the town Monchegorsk in April and July 2019. Field methods were straightforward, repeatable, and similar to other recent contemporary archaeology field projects (Andreassen et al., 2010, pp. 23–24; Farstadvoll, 2019, pp. 31–34; Harrison and Schofield, 2010, p. 69; Olsen and Vinogradova, 2019, p. 5). Archaeology in this case did not consist of subsurface

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Fig. 1. Town of Monchegorsk in northwestern Russia (map by the author).

excavation but rather was an archaeology of the surface – in and of the present (Harrison, 2011). In conducting this fieldwork, I explored Monchegorsk on foot and by car to get a sense of presence of the place (for examples of this approach see Clark, 1997; Olsen et al., 2012, pp. 58–78; Pétursdóttir and Olsen, 2014a, pp. 24–25). The work was limited to buildings that I could enter – public spaces, commercial buildings, or abandoned structures – and avoided fenced-in private properties or locked doors. As demonstrated in Fig. 2, the ongoing fieldwork has so far focused in exploring the northern part of the town along with a brief visit to one of the former outlying villages, Rizh-Guba (Риж-Губа).

I employed photography extensively to document how things are in town and the surroundings. Extensive use of photo documentation proved useful in documenting the materiality of how landscapes are structured, shaped, and change within and outside human-bounded desires (Andreassen et al., 2010; Farstadvoll, 2019; Pétursdóttir, 2014; Pétursdóttir and Olsen, 2014b). I avoided or blurred out people and other identifying characteristics, thus limiting the amount of images taken in busy or crowded locations. Instead, the fieldwork produced a large database of pictures of architecture, abandoned buildings, industrial enterprises, and the local ecology. This fell in line with the desire to document the affect, presence, and material reuse in Monchegorsk.

I supplemented this by visits to the local city library and archives of Monchegorsk and the regional library and archives in Murmansk to conduct historical research. The second round of fieldwork took place while Monchegorsk celebrated Metallurgist's Day, an old Soviet holiday, on July 20. This allowed me to conduct participant observation as the



Fig. 2. Fieldwork in Monchegorsk, spring and summer 2019 (map by the author).

town held one its largest annual celebrations (Fig. 3).

The results of this work leads me to theorize that much of the original – Stalinist – purpose of Monchegorsk continues in a capitalist economy and that part of this continuity lies in the usefulness of the material objects themselves, which continue to reproduce similar sorts of relationships they did in the past. Instead of discussing path dependencies, we could also consider past dependencies where the accumulated past plays a substantial role in its present. These observations highlight the need to understand the materiality of factories, houses, and infrastructure when it comes to the study of resource extraction.

## 2.0. Theoretical background

The theoretical basis for this work is rooted in the neomaterialist perspectives that argues that humans are not the sole agents of social transformations or historical developments. Rather humans are within a vast network of objects, plants, and non-human animals that co-create the world (Bruno, 2016; LeCain, 2017; Olsen, 2010). Specifically, when discussing the idea of heritage, I embrace the concept of “unruly heritage” that rejects the idea of heritage as something that is chosen, wished-for, valued, or preserved for future generations (Olsen and Pétursdóttir, 2016; Olsen and Vinogradova, 2019). Rather, this paper employs the concept of heritage as an involuntary, accidental, and lived-with past without temporal demarcation that has a certain degree of agency to influence the present and the future. People rarely voluntarily choose to preserve this or that particular structure, object, or landscape. Rather, the past accumulates as human-made things outlive, crumble, shift, and become repurposed by subsequent generations, creating a multi-temporal present based on durations of different things (Olivier, 2011; Olsen, 2010, pp. 167–169).

In discussing this multi-temporality, archaeologists often draw on lingering materiality from the past – like abandoned or reused structures – that refuse to neatly disappear into the pages of history by remaining in the landscape as a form of physical memory (Andreassen et al., 2010; Burstöm et al., 2009; DeSilvey and Edensor, 2012; Edensor, 2008; Olsen, 2013a; Olsen and Pétursdóttir, 2014; Pétursdóttir and Olsen, 2014a, 2014c). Contrary to historical narratives, that sees the past as a series of progressing instants (Olsen, 2013b); lingering material things become matter out of place stranded out of regular, ordered progression of time (González-Ruibal, 2019, p. 132; Pétursdóttir, 2012, 2013).

This foundation is useful for the subsequent discussion where things entangle into everyday lives of humans, animals, plants, and other things (DeSilvey, 2006; Pétursdóttir, 2017, 2018; Pétursdóttir and

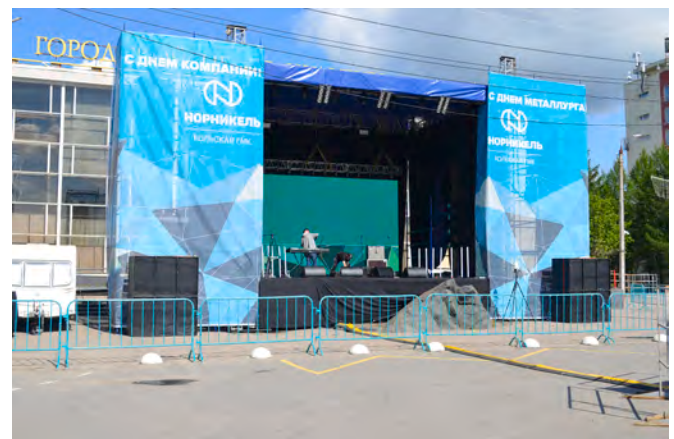


Fig. 3. Setting up the musical stage during Metallurgist's Day in Monchegorsk. The sign on the right reads "Happy Metallurgist Day" and on the right "Happy Company Day." Below that is the Norilsk Nickel logo, the name of the company, and its local subsidiary "Kola GMK". Soviet holiday being co-opted into the new capitalist system (photo by the author).

Olsen, 2017). Similarly, the symmetrical relations between functional things and humans have received a healthy discussion in places like actor-network theory, post-humanism, and related strands of thought (Coole and Frost, 2010; Ingold, 2008, 2012; Latour, 1999, 2005; Olsen, 2003, 2010; Olsen et al., 2012).

Where this discussion goes deeper is on the question of how these symmetrical relations manifest themselves when the past functions just fine the way it is – where objects created in a past system find themselves within new, rapidly changing systems. In these situations it is clear that some things have no place in a new system, thus becoming abandoned, ruined, or torn down, while others still provide value, becoming reused in a variety of forms. This is particularly manifest over the territory of Russia where the guts of the Soviet Union, consisting of architecture, transportation, infrastructure, and communication lines, still form much of the material substance for a modern capitalist country (Brown, 2001, p. 22; Olsen, 2013a, p. 215). Instead of making the socialist system, it now supports the Russian one. What happens in that new relationship?

This shift can be a bit pernicious. Often it is through absence, loss, or breakage that a thing comes to mind. However, if a thing is employed without interruptions but continues to function from one system to another it can remain hidden from conscious consideration (Heidegger, 1962, pp. 97–98; Olsen, 2010, pp. 69–76). By being a product from another time, the thing continues to reproduce the relationships, the structures, and the affects from the past into the present just by being there as a useful physical manifestation of past systems (Fig. 4). This is implicit in Henri Bergson's idea of habit memory whereby



Fig. 4. Statue of Lenin, Plashchad' Revolyutsii (Revolution Square), Monchegorsk (photo by the author).

familiarization of people to things through motor skills makes the objects fade into the background of the mind as the body implicitly navigates a tool, a building, or a city (Bergson, 2004; also see Olsen, 2010, pp. 116–121 for an excellent discussion).

In this context, it makes little sense to talk about entanglement between humans and things in a web, meshwork, or network but rather critically evaluate the number of ways of *how* humans and things interact (Hodder, 2014, pp. 21, 25). How does the lived with heritage of Soviet era industries influences the people who live with that heritage today? According to Ian Hodder, objects create their own path dependencies through cycles of maintenance, anthropogenic environmental change, and deepening complexity (Hodder, 2014, pp. 31–33). Without being able to undo the material culture or imagine a life without it due to our embodied routines, entrapping cycles of managing things draw humans into relationships that are not always necessarily healthy, helpful, or productive (Hodder, 2011, p. 164; 2014, pp. 30–32). Therefore, things bring their own unintended consequences while familiarity and comfort with things pushes the duration of their use into the future (Olsen, 2010, pp. 120–121).

### 3.0. The soviet union and its environmental legacies

There are perhaps few better examples of unintended consequences of things and their physical duration than the Soviet monotown (Моногород or monogorod) and its related industries. As the name suggests, the economies around the monotowns revolved around one or a few closely related economic or military activities. Many of these were founded during the Stalin era from the belief on behalf of Soviet planners and officials who saw monotowns as the best and most rational way to turn nature into usable resources (Josephson, 2014, pp. 238–239). In doing so, they emptied lands from their original inhabitants, most often Indigenous people, and replaced them with large numbers of new inhabitants which consisted of volunteer labourers and gulag workers from more populated regions of the country. Together they worked at building and operating the towns' industries and the associated support services (Brown, 2001, pp. 26, 29–33; Josephson, 2014, pp. 280–284). With the end of forced migrations after the death of Stalin, Soviet officials employed higher salaries, better services, and promises of new housing to attract workers to the country's northern and eastern peripheries (Bolotova and Vorobyev, 2007; Bruno, 2016, p. 198; Josephson, 2014, pp. 238–239; Kalemeneva, 2019; Nedoseka and Zhigunova, 2019, p. 103).

These northern subsidies dried up with the collapse of the Soviet Union. In response, many people rapidly out-migrated to better climates while the industries shifted into private hands. Monotowns, however, remained single-industry towns in a new capitalist Russia and scholars have put significant amount of research into diversifying the economies of these monotowns (for examples see Didyk and Rjabova, 2014; Gladysheva, 2017; Plisetskiy and Malitskaya, 2017; Shastitko and Fatikhova, 2015, 2016;). However, based on the most recent list provided by the Government of the Russian Federation, approximately 1100 monotowns remain with 313 linked to industrial activities with a combined population of approximately 13.5 million people (Pravitel'stva Russkoj Federacii, 2014; Shastitko and Fatikhova, 2015, p. 5).

To make matters worse, the collapse of the Soviet Union left a landscape of 50,000,000 standardized, uniform apartment units across the entire country (Sverdlov, 2009, p. 100). Mass housing, which began under Stalin in the later years of World War II, accelerated under Khrushchev with a push for cheap, efficient, standardized apartments (Smith, 2010). While originally considered practical and desirable housing solutions, some pre-fabricated Soviet homes have outlived their use lives by as much as 30 years (Olsen and Vinogradova, 2019, pp. 7–8) – though later iterations were meant to be far more durable (Meuser and Zadorin, 2015). Drawing on Tim Edensor (2005, pp. 106, 132), Thomas Lahusen referred to Khrushchev and later Brezhnev-period apartment houses as “zero-value rubbish” due to their age, standardization,

ubiquity, and suboptimal construction methods arguing that they cannot be monetized by capitalism via museums or gentrification (Lahusen, 2006, p. 738). Lack of maintenance under the Soviet and post-Soviet regimes has left many in a dilapidated state. Reconstructing them will require an immense amount of effort and money that most places outside of the affluent core cities of Moscow and St. Petersburg cannot easily afford. Thus, most people, especially in peripheral monotowns, will continue to live with the decaying Soviet-era housing blocks for the foreseeable future (Gundersen, 2009, p. 131; Lahusen, 2006, p. 738).

Ecological damage is another form of heritage inherited from the Soviet period. The environmental failures of Soviet industry are well-documented (Bruno, 2016; Darst, 2001; Feshbach and Friendly, 1992; Josephson, 2014; Josephson et al., 2013). Starting with Stalin, rapid construction and perception of nature as only a trove of valuable resources for the state, characterized industrialization from the 1920s into the 1950s. Unskilled and undersupplied workforce, combined with unrealistic planning expectations, and disregard for the local environment plagued early stages of many industrial enterprises (Bruno, 2010; 2016, pp. 71–120; 2018; Josephson et al., 2013, pp. 71–133). Rapid development and disregard for the environment continued under Khrushchev, even though better planning and a much more educated workforce characterized the Soviet economy in the second half of the twentieth century. The first environmental laws in the Soviet Union appeared during the 1960s, though they proved ineffective at curbing pollution (Bruno, 2016, p. 198; Josephson et al., 2013, pp. 136–181). Still, much of the ecological impact was heterogeneous and, under certain parameters, equivalent to the West (Bruno, 2016, pp. 213–219; 2018, p. 149; Lajus, 2020, p. 333).

However, the worst period of ecological damage in the Soviet Union took place in the 1970s and 80s as the Soviet Union expanded production to compensate for the global economic slump (Bruno, 2016, p. 204; 2018, p. 150). Despite environmental protection being written into the 1977 Soviet constitution (Josephson, 2014, pp. 254–255; Lajus, 2020, p. 323), company managers chose to pay the fines for polluting rather than falling behind production quotas which lead to the worst ecological degradation. In sum, environmental degradation in the former Soviet Union was a varied, cumulative, multi-causal phenomenon but one that is nevertheless a reminder that socialist industries have left their own forms of “mass destruction” behind (see LeCain, 2009).

Heterogeneously accumulated legacies of ecological mass destruction are conspicuous in the Murmansk Oblast. While the region is host to one of the first ecological reserves in the Soviet Union, it also became the centre of development for single industry towns starting in the 1930s. These towns primarily focused on extraction and processing of metals and minerals and include Monchegorsk, Nikel, and Zapolyarny (nickel, copper, and cobalt); Olenegorsk and Kovdor (iron); Kirovsk, Titan, and Koashva (apatite); and Revda (rare earth minerals). Many of the industries surrounding these towns have a legacy of soil and water contamination with non-ferrous metal manufacturers being some of the worst purveyors of this pollution (Bambulyak et al., 2013; Bruno, 2016, pp. 170–219; Josephson, 2014, pp. 241–256).

Since the collapse of the Soviet Union and the scaling back of production, the ecological situation in Murmansk Oblast has been improving to a level of “regular ruin” – i.e. that comparable with non-ferrous metal plants in the West (Bruno, 2016, pp. 213, 215). In 2003, the sulphur dioxide emissions from the non-ferrous metal industry in the region were 165.9 thousand tons (Bambulyak et al., 2013, p. 25). This dropped to 105.6 tons in 2017 (Njaa, 2018, p. 16). While the reduction in these emissions has led to flora and fauna regeneration, they remain by far the biggest polluters in the region (Bambulyak et al., 2013, pp. 23, 27). At the same time, heavy metal contamination remains a problem, as documented in the water, fish, and people surrounding the industrial settlements (Moiseenko et al., 2018; Razinkova, 2019, p. 16). Ten out of 42 environmental hot spots are located in the Murmansk Oblast, as designated by the Barents Euro-Arctic Council Working Group on the Environment (Bambulyak et al., 2013; Mård, 2013).

## 4.0. Monchegorsk

### 4.1. Historical overview

Within this broader historical and environmental context, the discussion turns specifically to the town of Monchegorsk. Monchegorsk is located on the traditional land of the Indigenous Sámi and its name is derived from the Sámi word for “beautiful tundra” (Bogomolov, 1957, p. 76). Before the construction of the industrial town, the Sámi used the area for fishing, hunting, and reindeer herding (Allemann, 2013, pp. 84–86; Wheelersburg and Gutsol, 2008, pp. 92–93). Significant transformations started to take place with the construction of the telegraph line in the mid-19th century and, more significantly, the construction of the railroad in 1916 that made the Sámi shift their settlement patterns (Wheelersburg and Gutsol, 2008, p. 85). The railroad opened the western Kola Peninsula for mineral exploration that began in the 1920s (Wheelersburg and Gutsol, 2008, p. 82).

Popular Russian histories of Monchegorsk refer to a Sámi man by the name of Arhinov and his sister, Matrena, who occupied the shores of what would become the industrial town (Lukichev, 1993, pp. 8–9, 48). In 1930, geologists working in the area identified significant deposits of nickel, copper, and cobalt (Lukichev, 1993, p. 13). In April 1935, an order came down from the People’s Commissar of Heavy Industry in the USSR to develop the nickel plant in Monchegorsk with the ability to produce nickel and copper by the end of 1937 (Bruno, 2016, p. 179). One of the major interests in nickel was its use as an important alloy for military applications. With 98% of the world’s nickel coming from Canada in the 1930s, the Soviet Union saw the need to develop their local nickel industry as a matter of national defence (Bruno, 2016, pp. 185–191). The construction of the industrial town forced the Sámi out of the region, though some chose to integrate into the incoming Russian population (Allemann, 2013, pp. 84–87; Wheelersburg and Gutsol, 2008, p. 89).

Much like other projects of the period, the construction of Monchegorsk and the industrial facilities of Severonickel leaned heavily on gulag labour, with over 11,000 labouring in the region by 1937 (Bruno, 2016, pp. 182–183). Poor planning, unskilled workforce, inefficient management, and insufficient knowledge of ore deposits delayed the first industrial production of nickel until February 1939 when a sufficient amount of good quality ores were discovered (Bruno, 2016, pp. 183–184).

While the start of the Second World War initially put a stop to metal production as the town was almost completely evacuated, production resumed in 1942 and the plant was able to produce a moderate amount of nickel for the war effort (Bruno, 2016, p. 189). Post war reconstruction continued to use gulag labour as well as receiving a boost from the 4.7 thousand German prisoners of war that were used as slave labour from 1945 to 1949 (Lukichev, 1993, pp. 69–71).

While Monchegorsk was being built, the housing conditions were abysmal, characterized by overcrowding, waste, and poor construction (Bruno, 2016, pp. 182–183). For those who could get proper houses, the town’s architects borrowed styles from other northern countries to create what they envisioned to be a unique urban landscape of “Соцгород” (“Sotzgorod” or “Socialist City”) (Lukichev, 1993, pp. 40–41). The Soviet planners built it to avoid the planning mistakes of Kirovsk, an earlier town further south built around the apatite mining industry (Lukichev, 1993, p. 37). This decision spared many old growth trees and the town planning facilitated the creation of large public green spaces (Poznjakov, 1999, pp. 23–24). In 1971, the meeting of architects, project managers, and construction workers declared Monchegorsk as one of the best-planned cities in the northern region of the country (Lukichev, 1993, p. 91).

However, like in all Soviet cities, the push for cheap, mass-produced homes witnessed a shift in house construction in the late 1950s with the introduction of prefabricated, mass produced, concrete panel buildings (Lukichev, 1993, pp. 86–87, 95; Meuser and Zadorin, 2015). These

houses replaced most of the earlier wooden houses and came to dominate most of the urban landscape in Monchegorsk. Most construction stopped in the early 1990s after the collapse of the Soviet Union and the subsequent economic stagnation.

At its peak, the population of Monchegorsk was 72.5 thousand people but since then experienced contraction and consolidation (Lukichev, 1993, p. 105). As of 2018, it was estimated that 42,099 people lived in Monchegorsk (ROSSTAT, 2018), a 42% drop since 1993. Currently, the town of Monchegorsk is listed as Category 2 in the List of Single Industry Municipalities of the Russian Federation, meaning that it is at risk of diminishment in its social and economic quality of life (Pravitel'stva Russkoj Federacii, 2014, p. 11).

#### 4.2. Environmental overview

While urban transformations were taking place within Monchegorsk, the environment outside was being radically transformed. The ores that the Severonickel plant processed were sulphuric and of lower quality than originally predicted. The factory tried to develop new technologies to smelt lower quality ores and convert sulphuric gases and other pollutants into usable substances like sulphuric acid. Unfortunately, chaotic planning and unskilled labour doomed these plans letting sulphur dioxide and heavy metals escape into the atmosphere unabated (Bruno, 2016, pp. 181–182; Lejbenzon, 2008, pp. 21–23). Fortunately for the residents of the town, the planners placed Severonickel downwind from Monchegorsk, meaning that much of the town was spared the worst effects (Bruno, 2016, p. 180). The “beautiful tundra” of the Sámi, however, received the brunt of the industrial devastation.

Despite this, the early years of Severonickel witnessed relatively low levels of pollution compared to other nickel plants of the 1930s. However, the extensive growth of the post war years created visible environmental impacts by the 1960s. Residents living closest to the plant had to be resettled and forest damage was visible 20 km around the Severonickel plant (Bruno, 2016, pp. 200–201). Things became three times worse in the 1970s, paralleling broader ecological degradation of the Soviet Union in the 1970s and 80 s, sulphur emissions tripled with the importation of sulphur-heavy ores from Siberia (Bruno, 2016, p. 204). As Andy Bruno has shown, the reason for this shift was the exhaustion of local reserves around Monchegorsk in 1974 (2016, p. 206). Driven by pressure of produce more in response to a stagnating economy and the rapidly expanding extraction activities in Siberia, polluting activities at Monchegorsk ramped up even as the local mining ceased. Toward the end of this period, the area outside of the town became a massive environmental dead zone covering 400–500 km<sup>2</sup>s at its largest extent (Hønneland and Jørgensen, 2003, pp. 148–150) (Fig. 5).

As mentioned earlier, it was not until the fall of the Soviet Union, the drop in production, and the later modernization of factories, that saw



Fig. 5. Severonickel processing plant (photo by the author).

the amount of sulphur dioxide emissions decrease. Output of sulphur from Severonickel fell from a high of nearly 300,000 tons in 1975, to 233,000 tons in 1990, to 98,000 tons in 1994 (Bruno, 2016, p. 215; Darst, 2001, p. 120). In 2017, the emissions were at 36,963 tons – below the annual permissible level of 39,900 tons (Razinkova, 2019, p. 25). However, there are regular spikes in emissions, light and periodically unenforced penalties against major polluters, inconsistencies in emission measurements depending on different governmental and corporate monitoring agencies, and little information as to how the emissions are going to be handled when all of Nornickel's<sup>1</sup> smelting operations move to Monchegorsk (Njaa, 2018, p. 8, 19–20; Razinkova, 2019, p. 27).

## 5.0. Analysis

### 5.1. Monchegorsk in the post-soviet era

Today, Monchegorsk lies in what is still the industrial heartland of Murmansk Oblast. Driving from the regional capital of Murmansk to Monchegorsk along the sole north-south highway, E105, one has to pass piles of waste rock and large tailings fields that abut the highway creating an unmistakable sense of being in an area dominated by resource extraction (Fig. 6). The town itself lies on a flat plain and on approach the stunted and dead vegetation acts as a reminder of the region's troubled ecological past. The Severonickel plant covers an area almost the same size as the town. Looking from the road, the nine-storey Brezhnev-period apartment buildings look tiny compared to the industrial facilities (Fig. 7).

In contrast to its rural surroundings, the original planning principles within Monchegorsk still shine through to make it a beautiful town. This planning is still visible along Prospekt Metallurgov (Metallurgists' Avenue) – the main street of Monchegorsk. At seventy meters wide, lined with Stalin-period houses that are brightly painted and well maintained, the street bisects the town west to east (Fig. 8). On the western end, it has a monument to the “Conquerors of Monche-Tundra” – the first miners of the region – put up in 1977 (Borodkina, 2012, p. 42). On the eastern end is a World War II monument to the defenders of the Russian Arctic put up in 1978 (Borodkina, 2012, p. 53). In the middle is the Plashchad' Revolyutsii (Revolution Square) with a statue of Lenin staring down the street – erected in 1981 (Borodkina, 2012, p. 31). Thus,



Fig. 6. Mine tailings and waste rock from the mining operations in Olenegorsk as seen from the highway (photo by the author).

<sup>1</sup> Nornickel (or Norilsk Nickel) is the current owner of the Severonickel plant in Monchegorsk and the world-leading producer of nickel, palladium, and other metals (Razinkova, 2019, p. 4).



Fig. 7. Severonickel plant from E105. The southern suburb on Monchegorsk, made up of 1970s and 80's nine-storey panel block apartments is barely visible along the horizon on the left hand side of the picture (photo by the author).



Fig. 8. Post-war Stalinka along Prospekt Metallurgov (photo by the author).

the central avenue has all the trappings of a central Stalinist procession way decorated with late-Soviet monuments.

Beyond the Prospekt Metallurgov and the few other adjacent streets from the post-war reconstruction that display late Stalinist architecture, the town is dominated by the five- and nine-storey pre-fabricated apartment blocks typical of many Soviet cities (Meuser and Zadorin,



Fig. 9. Mid-to-late 1970s Brezhnevka on Leningradskaya Naberezhnaya (photo by the author).

2015) (Fig. 9). Spatial arrangement of buildings in Monchegorsk is also distinctly Soviet. The first mass produced houses of the 1950s and 60s were placed in rows as Soviet plans saw that configuration as more efficient from an economic point of view (Meuser and Zadorin, 2015, pp. 145, 167). However, there was a marked change in this arrangement starting in the late 1960s with the rise of the micro-district (microrayon or Микрорайон) that saw buildings organized around inner car-free courtyards sheltering playgrounds, schools, and other amenities (Meuser and Zadorin, 2015, pp. 151–153).

Monchegorsk displays both types of spatial organization but, as common in many post-Soviet Russian cities, there is also significant repurposing of socialist buildings for capitalist use. This comes across most commonly on the first floors of buildings where former dwelling spaces are converted into shops. Other times, entire facades are built upon, hollowed out, and modified to create a capitalist space within a socialist shell (Fig. 10 and Fig. 11). Central courtyards are also no longer car free zones. Instead, in Monchegorsk, central courtyards have become parking lots for cars, Russia's largest tradeable commodity (Fig. 12).

The buildings and their spatial organization create a sense of placelessness stemming from their Sovietness – once inside the town, one could be anywhere in the former Soviet bloc (Andreassen et al., 2010, pp. 57–58; Lahusen, 2006). What makes the affect of the Soviet architecture particularly striking in this context is that the buildings and the park-like setting cut off fields of view to the Severonickel plant and the environmental damage outside. The contrast is stark between the lush, Russian town of Monchegorsk and the traditional land of the Indigenous Sámi beyond that witnessed 90 years of mass destruction that culminates in a legacy of scorched soil, disused buildings, and abandoned quarries.

The entrapping Sovietness visible in Monchegorsk and other monotowns help explain some of the difficulties regularly encountered when trying to plan and introduce economic diversification and broader political engagement to these places (Didyk and Rjabova, 2014; Didyk et al., 2018; Gladysheva, 2017; Plisetskiy and Malitskaya, 2017). Most residents of extraction-based monotowns repeatedly express more interest in further development of minerals and factories over other alternative investments (Nedoseka and Zhigunova, 2019, p. 105; Suutarinen, 2015, p. 104). This in turn contributes to tolerance of environmental degradation that both local workers and those who come from abroad accept as normal (Bolotova, 2012, p. 667; Didyk et al., 2018, p. 14).

Meanwhile, industrial imagery within monotowns becomes co-opted by local political elites who come from backgrounds within the town's industry and regularly frame their communities as "cities of labour glory" celebrating its working class achievements (Nedoseka and Zhigunova, 2019, p. 108). There is plenty of such imagery in Monchegorsk.



Figs. 10. Shop inside of a retrofitted Khrushchev-period building with bricked-up windows and built-on attachments - back side (photos by the author).



Fig. 11. Shop inside of a retrofitted Khrushchev-period building with bricked-up windows and built-on attachments - front side (photos by the author).



Fig. 12. Playground turned into a parking lot in front of a late Soviet apartment block in the northeast corner of Monchegorsk, (photo by the author).

These include a large sign at the entrance to the town that proclaims “Monchegorsk – The City of Metallurgists!” and banners on the road to the Severonickel plant that proclaim “Nornickel – Our Hope!” During Metallurgist Day celebrations, the music stage heralded the former Soviet workers’ day as “a day of the company” while the Nornickel logo was emblazoned everywhere (Fig. 3). Thus, the Soviet industrial past becomes a source of glory, pride, stability, and celebration – Soviet nostalgia is stronger in monotowns as opposed to other cities within the Russian federation (Nedoseka and Zhigunova, 2019, pp. 101, 109).

### 5.2. Past dependency

Confronted with Monchegorsk’s materiality, it is understandable why economic diversification has proved difficult and why Soviet nostalgia runs strongly in “the city of metallurgists”. As Ian Hodder has argued, objects have entrapping properties by creating path dependencies of management, maintenance, and expansion. The building of houses of sun-dried mudbricks, for instance, creates the need to procure wooden posts in order to support the sagging walls, the need to procure wooden posts requires the creation of ground stone axes, and etc. (Hodder, 2014, p. 29). Each development and each technological innovation adds levels of complexity that needs extra levels of maintenance and dependence.

In a context like Monchegorsk, path dependency consists of maintaining houses, streets, monuments, and factories from the Soviet era that serve as the basis for the town’s social and economic reality. Soviet

materiality gets reproduced based on need and familiarity beyond purely functional questions of economics, health, or long-term sustainability. Together, these represent the habit memory of Soviet industry. In navigating the things inherited from the Soviet past, people who live in monotowns continue to reproduce that which they are comfortable with through an implicit bodily memory. In these circumstances, the dependency on industry combined with few viable alternative economic opportunities in remote tundra climates leads to a certain degree of self-perpetuating entrapment within the industrial heritage of the Soviet Union (Hodder, 2014, pp. 30–31).

Given this and the preceding discussion on the exploration of Monchegorsk through a combination of historical and archaeological fieldwork, it might not be accurate to refer to Monchegorsk’s Soviet past as “offline” or “zero value rubbish” as some previous scholars have postulated (Lahusen, 2006, p. 738; Olsen, 2013b, p. 185). For one, the Soviet past is not a monolithic entity of ecological damage and panel block apartments, but rather an accumulation of material pasts that formed over a rapidly shifting set of policies, ideologies, and economic plans. Each part of that past has value (or lack of it) in each successive present. Second, the accumulation of the Soviet pasts as seen in Monchegorsk is not valueless or offline but is instead re-plugged into a post-socialist reality. Many of the elements of Soviet heritage keep Monchegorsk going today as they did during the Soviet period due to their utility and familiarity. With these observations, it might be better to postulate a “past” dependency, whereby the unruly and unintended accumulations of the past enable certain modes of living while curtailing other opportunities.

The accumulation of the Soviet pasts in Monchegorsk began with destruction – the removal of the Indigenous Sámi inhabitants through the heavy-handed construction campaign of the 1930s. Today, the Sámi are assigned to a distant past visible mostly in the town’s name. It is perhaps telling that the local museum displays the Sámi collection as part of the area’s “natural history” exhibit.

In the place of the region’s original inhabitants, Monchegorsk was developed as a Stalinist project with an imported population to extract and process nickel and copper reserves. Even when nickel reserves proved to be scanty, the Soviet authorities pushed the project through to completion. As the local reserves depleted in the 1970s, the Severonickel facilities continued through the smelting of imported ores. After the collapse of the Soviet Union, Severonickel was not abandoned but instead continues to function as a national nickel and copper processing hub. Through the shifts of political, economic, and ideological realities, Severonickel continues in its original purpose.

The urban fabric of Monchegorsk displays similar multi-temporal accumulations in response to a rapid succession of varying ideologies that produced it, while also maintaining its original purpose as a “socialist city”. Good town planning is still visible in the green spaces and Stalin-period houses that line the Prospekt Metallurgov. They are cared for, repainted, repaired, and preserved. In contrast, Khrushchev and Brezhnev-period panel apartment blocks overrode other Stalin-period constructions but now reveal minimal evidence of maintenance – highlighting just what kind of pasts are celebrated in Monchegorsk.

The accumulated sum of the socialist pasts, what has elsewhere been described as the heavy heritage of the Soviet Union (Olsen, 2013a, pp. 211–215; 2013b, pp. 185–187; Olsen and Vinogradova, 2019), is clearly visible in the buildings, the infrastructure, and the monuments of Monchegorsk. However, unlike many Soviet buildings and facilities that became superfluous and now lie abandoned across Russia, most of Monchegorsk has value.

It is not unique in this category, as most monotowns survive as single industry towns fulfilling the same roles they did during the Soviet period. In this sense, Monchegorsk acts as a microcosm of past dependency – reproduction of Soviet economic purpose inside a capitalist system. The monuments of the industrial past – both formal ones like the statue to the “Conquerors of Monche-Tundra” and informal ones like the plant at Severonickel and the degraded ecosystem surrounding it –

continue to reinforce the town's identity as an industrial town. New futures emerge through, for example, extensive interior urbanism around Monchegorsk and other former Soviet cities (Andreassen et al., 2010, pp. 111–135; Buchli, 1999; Sverdlov, 2009) or possible eventual replacement of the Soviet built environment and the diversification of the local economy. However, the brute force of the inherited Soviet past will keep Monchegorsk going in much its original form into the near future as it continues to draw on the city's socialist past for the material to sustain its ongoing industrial operations.

## 6.0. Conclusion

“When did the Soviet Union end – and has it ended?” (Olsen, 2013a, p. 215). This article tried to explore this question by looking at the monotown of Monchegorsk. Monchegorsk, as an active industrial community, has economic value in the present and through its habit memory continues to reproduce the Soviet past on the landscape and the built material environment long after the dissolution of the Soviet Union. If one would think of Monchegorsk through the archaeological time of varying durations, as opposed to historic time of sequences and events (Olivier, 2011), the accumulated durations from the Soviet Union is not only present but continue to be recreated. On the resource peripheries of Russia, the body of the Soviet Union is very much alive and continues to grow and expand.

The continued dependence on resource extraction and processing highlights the entrapping nature of the activity. When resource extraction becomes entrenched, the people who were most impacted by the resource extraction industry through effects on their health, long working hours, and environmental degradation become its biggest supporters when those industries plan on downsizing or shutting down (Brown, 2001, p. 48; Wråkberg, 2019, pp. 5–7). Thus, resource dependence has a material component, a past dependency, where monuments and material memories mobilize and push resource extraction into the future while making it difficult and undesirable to imagine alternatives. While the focus on the material is not new to history, especially environmental history (Bruno, 2016; LeCain, 2009, 2017), archaeology can provide new perspectives to these inquiries through its inherent materialistic expertise in studying things (Olsen et al., 2012). In this paper, a contemporary archaeology of Monchegorsk reveals that, when discussing the topic of resource dependency, scholars need to pay more attention on the materiality of the extractive industry itself to see how it acts to promote certain futures while limiting others.

## Declaration of Competing Interest

I declare no special interest in the research, conduct, and compilation of this paper.

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## **Article C**



Anatolijs Venovcevs

## Industrial Vestiges: Legacies of Ancillary Impacts of Resource Development

### ABSTRACT

This paper offers a different way to understand the heritage of extractive industries by exploring the material afterlives of what has been termed the ancillary impacts of resource development – a variety of quarries, woodcuts, transportation corridors, and power lines that surround industrial operations, especially those created in areas distant from established industrial population centers. To study this, the paper expands upon the concept of “vestige”, to explore the landscapes around two single industry mining towns in Kola Peninsula, Russia and in Labrador, Canada by specifically focusing on two abandoned quarries located in each case study. The results highlight the need to explore developments that trail behind industrial settlement of colonial hinterlands. By focusing specifically on the afterlives of such developments, the paper demonstrates how chronological and geographical boundaries of resource extraction are blurred over time creating a deep, unruly, self-perpetuating set of legacies.

Industry, resource extraction, twentieth century, vestiges

### Introduction

Since the emergence of industrial archaeology in the 1970s, archaeologists have exerted a tremendous amount of work to tracing the development and evolution of extractive industries that have fundamentally transformed the human and physical geography of the planet. Similar research, in the associated field of industrial heritage, has worked to understand the afterlives of deindustrialization. While this work is extensive, one area that has remained generally underreported and undertheorized is the geographically dispersed network of supportive industries that trailed in the wake of industrial operations when they entered new and previously unindustrialized areas (though see literature such as Lawrence, Davies, and Turnbull 2016, 2017; Baeten, Langston, and Lafreniere 2018 for excellent work on the legacies of water consumption/infrastructure). As just one example of such gaps, in their seminal textbook on industrial archaeology, Marilyn Palmer and Peter Neaverson focus on adits, waste tips, shafts, power sources, and smelting mills as key features that help to identify former mining landscapes overlooking the broader secondary operations that often went into supporting these industries (1998:29-32). This gap is present outside of archaeology as well. In a recent article by Tolvanen et al. (2019), the authors’ systematic review on the economic, social, and legal issues surrounding contemporary mining industry in the Arctic neglects to consider the fact that mining operations carry with them ancillary impacts that have far-reaching and long-lasting consequences on the human and non-human environments.

This paper takes a slightly different approach by performing an archaeological investigation on the ongoing legacies of what Arn Keeling has referred to as the ancillary impacts of resource extraction (2010:235-236). Keeling, a historical geographer, used the term “ancillary impacts” to capture a broad variety of secondary effects of mining operations that stem from an influx of outside workers and creation of support industries to feed the

1 demands of heavy industry when it enters new regions that often lie peripheral to larger  
2 industrial centers and developed support networks. In Keeling’s case study, Uranium City,  
3 Saskatchewan, those impacts included logging of old growth forests and hydroelectric  
4 developments visible up to a hundred kilometers away from the site of extraction. To name  
5 just a few other examples, ancillary impacts can include activities like mineral survey work,  
6 new agricultural enterprises, road and railroad construction, quarrying, and an increase in  
7 hunting and fishing from a large influx of outside workers (Lee and Boutin 2006; Keeling  
8 2010:235-236; Keeling and Sandlos 2017:386; Parlee, Sandlos, and Natcher 2018). I am  
9 employing a concept from historical geography in this article to better grasp the secondary  
10 impacts of industry because the tools of geography are well positioned to understand how  
11 conceptualizations and uses of space are and have been transformed over time – a necessary  
12 framework when exploring the dispersion and profusion of industrial effects.

13 It should be noted that, while I use the term “ancillary” and “secondary”, at times  
14 interchangeably, throughout this paper, these words are not intended to demean the  
15 significance of these industries or the people who worked in them. Rather, ancillary industries  
16 are positioned always in relationship to and in service of larger industrial operations. They  
17 would not exist without the main industrial operations they are tied to and often are owned or  
18 subcontracted by the main industrial actor in a given region. The “ancillary-ness” of ancillary  
19 operations may not necessarily be apparent in the densely populated and economically  
20 diversified regions of the world but in the current case studies that deal with single industrial  
21 mining towns located deep in the boreal forest, ancillary operations are easier to trace since  
22 almost every contemporary object there exists in support of or because of the mining industry.

23 My fascination with this topic comes from the fact that, in the eyes of the general  
24 public, secondary industrial operations are often either overlooked and taken for granted  
25 pieces of infrastructure – for example powerlines, highway connections, and power plants – or  
26 perceived as necessary eyesores and localized environmental damage – like gravel pits and  
27 prospecting cut lines. Despite such perceptions, a closer look reveals that they are miniature  
28 worlds in and of themselves capable of assembling and projecting their own material agency.  
29 Though the research presented here can stand alone, I would be remiss to not qualify that  
30 much of my inspiration for this topic comes from my life and work in Newfoundland and  
31 Labrador in eastern Canada – a large, diffusely populated province with a rich assemblage of  
32 wide-spanning infrastructures, gravel pits, and other supportive industries that surround  
33 scattered single-industrial communities.

34 In this context, understanding the ancillary operations and their effects is important  
35 because they expand the industrial transformations of relatively concentrated extraction and  
36 processing operations up to a regional level. By focusing specifically on that which remains  
37 after ancillary operations have ceased serving their purpose, the application of archaeological  
38 methods can play a key role in shaping scholarly understanding how regions become  
39 transformed through industrial processes and how those transformations perpetuate  
40 themselves beyond their human intentions. This understanding is particularly vital for cases  
41 where industrial development takes place in circumpolar regions. As John Sandlos and Arn  
42 Keeling have argued, Arctic and sub-Arctic territories have limited ability for redevelopment  
43 and economic diversification due to low population densities, poor agricultural potential,  
44 relative isolation, and the dependency on a few extractive staples that are vulnerable to boom-  
45 and-bust cycles (2012:8-9). This means that after a powerful bust, abandoned objects can sit  
46 idly in perpetuity creating a mass of unwanted, unmanaged, and unruly heritage that has an  
47 impact for years to come (Olsen and Pétursdóttir 2016; Keeling and Sandlos 2017).

48 Therefore, the purpose of this paper is to explore this topic by suggesting one way that  
49 archaeology can contribute to the understanding of material legacies of such discontinued  
50 ancillary operations. To do so, I further develop and apply the term “vestige” to examine how  
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1 resource extraction leaves indomitable marks on the landscape that cut across temporal and  
2 geographical boundaries through a variety of post-use trajectories. Ultimately, I try to address  
3 the following questions – what roles do ancillary operations of resource extraction assume  
4 after their abandonment and how can their post-abandoned states effect the ways in which we  
5 may think about the temporal and geographical limits of modern and historical resource  
6 extraction?

7 To do so, I focus on the vestiges of two features near two twentieth century single  
8 industry mining towns located in similar taiga environments – a quartzite quarry of Rizh-  
9 Guba (Риж-Губа) outside of Monchegorsk, Murmansk Region, Russia, and the sand pits in  
10 Wabush, Labrador, Canada. At one point, these places served key roles in initializing and  
11 supporting resource extraction in their respective regions as part of a broader network of  
12 ancillary operations. However, they have since become abandoned through changing  
13 economic, social, and geological realities.  
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### 16 17 Archaeology of Twentieth-Century Single Industry Mining Towns 18

19 The research presented here straddles two archaeological subdisciplines – industrial  
20 archaeology and contemporary archaeology.  
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22 As an industrial archaeology project, it focuses on the industrial developments,  
23 evolution, and remains of single industrial towns in northwestern Russia and northeastern  
24 Canada that developed around the extraction of minerals during the mid-twentieth century. It  
25 borrows approaches from industrial archaeology like identifying entire landscapes of industry,  
26 processes of operation, and houses and institutional buildings of workers and managers.  
27 However, unlike much of industrial archaeology that has been practiced to date (Palmer and  
28 Neaverson 1998; Casella and Symonds 2005; Martin 2012; Palmer and Orange 2016), its  
29 purpose has been analytical and theoretical rather than descriptive and protectionist. The  
30 mines and their associated towns in my case studies are not threatened with decay and  
31 demolition but are instead active, living, and breathing industrial communities that continue to  
32 serve their original purpose. This creates a dearth of formally recognized heritage – the stuff  
33 that comprises my cases studies is too recent and too useful to be readily thought of as  
34 belonging to a valued past by the people who live there, at least not to a past that can be  
35 codified and protected in any meaningful way (Harrison 2020).  
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39 Considering this, the work borrows approaches from contemporary archaeology  
40 defined as the archaeology of the recent past and the present and posed variously as the  
41 archaeology of postmodernity, supermodernity, Capitalocene, or the Anthropocene (Buchli  
42 and Lucas 2001; Harrison and Schofield 2010; González-Ruibal 2019; Stewart, Jungkind, and  
43 Losey 2020). While the purpose of this research is not to refute or advance contemporary  
44 archaeology's various definitions, archaeology of twentieth-century single industry mining  
45 towns is intrinsically rooted in the global flows of resources and capital that have  
46 characterized economic realities over the last seventy years and the exploitative “mass  
47 destruction” (LeCain 2009) mining practices that are a major contributing factor to the  
48 proposed new geological age. In particular, my research draws upon the ideas of Bjørnar  
49 Olsen and Þóra Pétursdóttir in tracing the legacies of the Anthropocene to consider all pasts –  
50 wanted and unwanted, recognized and unrecognized – as part of one collective and  
51 involuntary unruly heritage that is becoming a greater and greater norm in a world dominated  
52 by unmanageable materiality (Olsen and Pétursdóttir 2016; Olsen and Vinogradova 2019).  
53 The conceptual flattering provides a useful analytical framework to archaeologically approach  
54 my case studies regardless of local perceptions and heritage designations.  
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58 The dual subdisciplinary pillars of industrial and contemporary archaeology allow for  
59 concepts to blend or reflect off each other to produce deeper insights into both. For example,  
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1 the definition of contemporary archaeology advanced by Harrison and Schofield as the study  
2 of “late-modern, post-industrial societies” (2010:1) falters in the industrial hinterlands of  
3 Russia and Canada where life is dominated by single industrial employers in a way not  
4 dissimilar to the early and mid-twentieth century, or, for that matter the company towns of the  
5 preceding two centuries. These places are not post-industrial, nor can it be said that they are  
6 post- or late-modern when they are materially entrapped in the mid-twentieth-century systems  
7 of life and industrial production (Venovcevs 2020a). Meanwhile, while Palmer and Orange  
8 advance aerospace, automotive, and cellular telecommunications industries as topics for a  
9 future industrial archaeology (2016:85-86), my research underscores the fact that more  
10 traditional industrial archaeology topics like mines and mining towns have not gone away. If  
11 anything, the mineral extraction industry has gained an even greater preeminence in the recent  
12 decades as the exponential global growth in consumption and the aforementioned  
13 developments of new technologies have led to exponential growth in size and scale of  
14 resource extraction and processing. For example, the nickel and copper smelting plant of  
15 Severonickel associated with my case study in Monchegorsk, stands to become one of the  
16 largest processing plants of its type in the world – in large part due to the demands for non-  
17 ferrous metals as part of the so-called green shift (Nilsen 2021).

### 21 *Monchegorsk and Rizh-Guba*

24 It is this case study in Monchegorsk that I turn to first, located on the Kola Peninsula  
25 in the northwest corner of Russia (Figure 1). Before rapid industrialization in the twentieth  
26 century, the Indigenous Sámi occupied the region for millennia. While gradual contact with  
27 larger European powers introduced new technology, beliefs, and economic systems, much of  
28 their traditional way of life remained relatively unaffected into the early twentieth century  
29 (Gutsol, Vinogradova, and Samorukova 2007, 9-25, Wheelersburg and Gutsol 2008).

32 While the Russian revolution brought about some early changes in the social and  
33 economic life of the Sámi, the most radical changes started a decade later in the 1930s when  
34 the Soviet Union began a massive redevelopment campaign to transform its northern and  
35 eastern regions into vast industrial areas that transformed largely Indigenous home regions to  
36 industrial peripheries servicing distant population centers within a planned economy. Mining  
37 developments along with the associated impacts like road and railroad construction,  
38 hydroelectric projects, and establishment of military bases marginalized, resettled, and  
39 outright destroyed Indigenous settlements and traditional territories (Gutsol, Vinogradova,  
40 and Samorukova 2007:26-47; Allemann 2013). For example, the Russian geologist who  
41 discovered the ore deposits in Monchegorsk proclaimed with pride how a town replaced the  
42 homes of the Sámi who once lived there (Lukichev 1993:48).

45 The construction of Monchegorsk and its associated processing plant of Severonickel  
46 began in 1935 to extract and process the local deposits of nickel, copper, and cobalt (Bruno  
47 2016:179, 185-191). The Soviet planners designed the town as the local civic center  
48 (*Соцгород* or “Socialist City”) (Poznjakov 1999:23), while around Monchegorsk 15 separate  
49 satellite villages sprouted up (Figure 2). While the “Socialist City” provided civic and  
50 administrative services as well as housing for the local elites, the villages provided the center  
51 with goods and services in the form of workers’ housing close to the primary industrial  
52 operations, quarrying, forestry, railroad connection, and collective farming (Dezhkina 2015).  
53 One such satellite village was Rizh-Guba (Риж-Губа). Located four kilometers from the  
54 “Socialist City”, it provided housing for workers and their families who extracted quartzite  
55 from a quarry (also called Rizh-Guba) that was used for the copper smelting process at  
56 Severonickel. Operations began in 1938 with 215 people and 13 houses documented in the  
57 village that same year (Beljunas 1938; Poznjakov 1999:223). The village expanded



1 significantly after the war. A June 1954 article of the local newspaper *Monchegorskii*  
2 *Rabotnik* (*Мончегорский Работник*, or “Monchegorsk Worker”) celebrated the modern  
3 village for having several houses, clinic, school, kindergarten, shop, cafeteria, bathhouse,  
4 vegetable storehouse, and all other essential facilities (1954).

5 The workers performed early quarrying by hand, focusing on the richest deposits in  
6 the southeast section of the formation. Before a road was built to the Severonickel processing  
7 plant for mineral transport in 1955, the only access to and from the village and quarry was by  
8 boat over Lake Imandra (Poznjakov 1999:224).

9 By 1975, the quarrying depleted good quality quartzite deposits and extraction moved to the  
10 north-western region of the deposit. Here, the quarry employed more mechanized methods for  
11 extraction to keep pace with the expanding production demands at Severonickel throughout  
12 the 1970s and 1980s (Poznjakov 1999:224; Bruno 2016:204). These methods employed the  
13 techniques developed in mass destruction mining including drilling, blasting, and moving  
14 massive amounts of rock and reprocessing it to extract the materials considered valuable  
15 (LeCain 2009). By 1983, the local authorities resettled the entire village of Rizh-Guba and  
16 turned it into a recreational resort (*база отдыха*, literally “base of rest”). At the same time,  
17 the area around the village was zoned for dachas (Russian recreational cabins) through the  
18 travel facilitated by the 1955 resource road (Kraevedcheskij Portal Monchegorska 2017).  
19 Work at the quarry continued until 1993 when production stopped and the quarry never  
20 remediated (Poznjakov 1999:225). Recent discussions surrounding Rizh-Guba, including  
21 local news outlets and the municipal plan for Monchegorsk that only marks the site as an  
22 abandoned quarry (Institut "Giprogor" n.d.), ignore the area’s industrial past and focus mostly  
23 on Rizh-Guba’s importance and status as a recreational and gardening area in the  
24 Monchegorsk region.

25 Most of the other settlements around Monchegorsk also disappeared in the 1970s and  
26 1980s. Soviet authorities relocated and absorbed some of the villages into the larger town  
27 while a few others were abandoned after the collapse of the Soviet Union (Dezhkina 2015).  
28 Their remains are in various states of preservation – from still-standing husks of buildings to  
29 systematic erasure through demolition and subsequent redevelopment. As for Monchegorsk  
30 itself, it was particularly vulnerable to the shifts in the political and economic conditions that  
31 came with Soviet Union’s collapse. With the breakdown of the Soviet system and the  
32 privatization of businesses, industries that did not shut down required downsizing of the  
33 workforce, downscaling of industrial operations, and reduction of company investment in  
34 their communities. While smelting operations continue in Monchegorsk to this day, the  
35 population has fallen from a peak of 72,500 in 1993 to 42,000 in 2018 (Lukichev 1993:105;  
36 ROSSTAT 2018).

### 37 *Western Labrador and Wabush Sand Pits*

38 Russia is not the only place where recent economic and political shifts lead to growth  
39 and subsequent contraction in northern industrial regions. While the Soviet Union was  
40 developing its resource frontier, Canada was engaging in its own northern colonization by  
41 offering lucrative opportunities for companies to develop industrial communities in the  
42 Canadian Arctic and sub-Arctic hinterlands. While development was slow at first, the post-  
43 war economic boom in the United States spurred resource demand, creating dozens of new  
44 extraction-based communities in northern Canada (Zaslow 1988; Piper 2009).

45 One place to experience this rapid industrialization was the interior of the Labrador  
46 Peninsula located in northeast Canada (Figure 3). Much as with the Sámi on the Kola  
47 Peninsula, the Innu occupied the interior of the Labrador Peninsula for thousands of years  
48 with limited interactions with the Europeans. However, in 1954, the completion of a 580-

1 kilometre long railway into the interior of the peninsula opened the region for iron mining and  
2 hydroelectric development. The provincial governments of Newfoundland and Québec that  
3 share the peninsula encouraged these constructions to make a supposedly empty barren land<sup>1</sup>  
4 profitable for American and Canadian market investment and create a new settled northern  
5 frontier (Schoenauer 1976, Ponte and Kowal 2008, Thistle and Langston 2016, 274-275).

6 This inflicted rapid changes upon the Innu who experienced marginalization,  
7 resettlement, and the destruction of their hunting and camping grounds brought about by  
8 sudden industrialization. While some Innu groups were able to successfully navigate the  
9 difficult new realities of an industrial economy (Boutet 2012, 2013), others were forcibly  
10 resettled without compensation and their lands flooded by hydroelectric reservoirs built in  
11 part for mining development (Loring et al. 2003; Neilsen 2016; Venovcevs 2020b). Much like  
12 in Monchegorsk, whose name, “Monche”, derives from the Sámi word for “beautiful tundra”  
13 (Bogomolov 1957:76), traces of Indigenous presence is visible in western Labrador on a little  
14 peninsula called “Indian Point”. There are scattered written and oral accounts of several Innu  
15 families living there in the early 1960s, which included interactions between the first settlers  
16 and the Innu along with problematic company practices of supplying them with unlimited  
17 alcohol (Maher 1992:5-6; Marcil and Greene 1992:9-11). The mining companies forced the  
18 Innu to move by the late 1960s though the local settlers report observing traces of their cabins  
19 for a couple of decades afterward (McLean 1995:56). Recent surface surveys that I conducted  
20 in the area were not able to relocate the traces of these cabins.

21 In this context, the twin iron mining single-industry towns of Labrador City and  
22 Wabush were founded in 1961 and 1965, respectively (Hilton 1968:53, 147; Rompkey  
23 2003:120, 124). While the mining companies designed the towns with relatively dense urban  
24 cores adjacent to their iron mining and processing sites, the towns’ development required the  
25 construction of a dispersed network of associated industries that included railroad sidings,  
26 airstrips, gravel pits, access roads, survey camps, cut lines, quarries, and a dedicated  
27 hydroelectric power station (Figure 4) (Arsenault 1997; Geren and McCullough 1990;  
28 Harrison 2003; Rompkey 2003:125; Venovcevs 2020b).

29 The mining towns grew rapidly in the 1960s and 1970s, but the optimistic promise of  
30 an urbanized northern industrial frontier ended abruptly in the early 1980s with a collapse in  
31 the iron ore prices. This led to the closure of two iron-mining towns on the Labrador  
32 Peninsula and the reduction of other mining operations including those in Labrador City and  
33 Wabush (Bradbury 1983, 1984, 1985). Mining companies, that have already started divesting  
34 themselves of their non-industrial holdings since the late 1960s, further cut back on their  
35 expenditures and focused attention on restructuring their industrial operations. From their  
36 peak in the mid-1970s, the population of Labrador City and Wabush fell from 15,000 and  
37 5,000, respectively (Geren and McCullough 1990:278), to just 9,000 people total in both  
38 communities in 2016<sup>2</sup>. The golden age of Canadian northern industrial city building was over.  
39 Much like the collapse of the Soviet Union’s planned economy made Soviet single industry  
40 towns vestiges of a by-gone regime, so to single industrial communities in Canada are  
41 vestiges of a different political and economic system that no longer seeks to build single  
42 industrial communities as a way of northern colonization. All current mining operations favor  
43 a flexible labor force through the construction of work camps with a rotating fly-in fly-out  
44 schedule for workers.

45 Much like in Russia, the area around Labrador City and Wabush is surrounded by  
46 active and abandoned ancillary industrial operations (Figure 4). For the purposes of this paper,  
47 I want to highlight an area southeast of the town of Wabush colloquially referred to as “the  
48 sand pits”. Prior to the town’s construction, this area was marked by a series of cut lines  
49 created as part of the extensive drill survey campaigns that took place from 1955 to 1959 to  
50 map the iron ore deposits in the area (Hynes 1990:7-8). The area was briefly abandoned from  
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1 1960 to 1962 as mine construction started with workers and their families living in a tent  
2 camp near the mine (Hynes 1990:12-18). That changed in 1962 when the townsite for  
3 Wabush started to be constructed.

4 The townsite lies on the steep rocky western slope of a hill that occupies an  
5 approximately six square kilometer area between Jean Lake to the west, Wahnahnish Lake to  
6 the south and southeast, and the Flora Lake (now Wabush mine’s tailing field) to the east.  
7 Given the area’s steep slope, significant amount of fill was required to make the land suitable  
8 for building the single, double, and row housing that characterizes Wabush’s “Garden City”  
9 design. This design included the need for rich topsoil to create grass-covered front lawns –  
10 something that an early souvenir booklet from western Labrador advertised as a good use for  
11 the Labrador muskeg (Young n.d.). The extraction for the necessary sand, gravel, and topsoil  
12 took place on the eastern and southeastern edges of the townsite, behind the expanding town.  
13 Large scale aggregate extraction continued into the early 1970s when much of the town’s  
14 development ceased, leaving behind a series of pits.

15 Interestingly, no archival references or pictures exist of this activity and much of the  
16 information about them comes from talking to local residents (Jordan Brown, pers. comm., 19  
17 August 2019; Gary O’Brien, pers. comm., 7 July 2021). As such, the sand pits are essentially  
18 “pre-historic” – written out of history. The extraction of aggregate on which the town sits, it  
19 would seem, did not warrant a mention in the town’s contemporary adverts or the subsequent  
20 histories, despite attentive focus on the issues surrounding housing and town design (Young  
21 n.d.; Hynes 1990; Riggs 2019). Even the 1985 Town of Wabush plan, while clearly depicting  
22 the former cut lines surrounding the sand pits, only represents the pits as a series of treeless  
23 depressions (D. W. Knight Associates 1985).

24 After the main construction phase, the town of Wabush continued to use several of the  
25 pits to harvest sand for road maintenance in wintertime but this too seems to have stopped in  
26 recent years (Gary O’Brien, pers. comm., 7 July 2021). The last attempt to put this area  
27 toward extractive use was in 2010 when the Wabush town council denied an application for  
28 further sand quarrying. Overall, the sand pits were left as they are. It could be postulated that  
29 if the town of Wabush continued to expand, the sand pits would have disappeared under  
30 residential subdivisions. However, stagnation and population decline from the 1980s onward  
31 prevented that redevelopment. Recent re-zoning has also ensured their survival into the future  
32 as the 2019 Town of Wabush zoning regulations subsumed much of the area into an expanded  
33 watershed protection zone. The rest of the area is zoned as “open space” (Stantec 2019).

34 Today, the pits lie as a “a space left over” (Andersson 2014) – beyond the concerns of  
35 historicity and municipal planning. However, they still exist physically and within the local  
36 imagination. In the recent exhibit by the western Labrador artist, Tanea Hynes, images of the  
37 sand pits appear twice (Hynes 2021:11, 18). While they are without caption, one of them – an  
38 image of car wrecks discussed later in this article – is described briefly on a separate page  
39 under “worth noting” as simply “wabush sand pits” (2021:84).

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48 Vestiges

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51 As the examples above and Figures 2 and 4 demonstrate, industrial development in  
52 these mining towns were not limited to the urban boundaries of the town itself. Rather, they  
53 are surrounded by a landscape filled with ancillary operations. Many of these are the result of  
54 the economic growth and construction that took place during the second and third quarters of  
55 the twentieth century. Subsequent economic decline and contraction abandoned many of these  
56 operations leaving behind an assemblage of features that litter the peripheries of these  
57 industrial towns. To grasp and constructively talk about these landscapes, I propose to  
58 approach these features as vestiges of ancillary impacts of resource development.  
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1 The word “vestige” has enjoyed increasing popularity in archaeological literature in  
2 recent years. Scholars have used the term in a wide variety of contexts such as to describe  
3 atomized traces of human figures imprinted as shadows on the ground from an atomic bomb  
4 explosion (Domanska 2017), objects that have been detached from their intended purpose and  
5 function – i.e. hyperart (Farstadvoll 2019c), non-absent material presences of the past (Shanks  
6 2012:133-136), untimely anachronisms (Lucas 2015:7), and pluritemporal objects of material  
7 memory (Olivier 2011:4-8)<sup>3</sup>.

8 The problem with these uses is that the concept of vestige has remained largely  
9 undefined and most archaeological applications slightly meant different things. For Michael  
10 Shanks, for example, the key point of vestiges is their ability to interrupt the current moment  
11 through a haunting presence of that which is no more (2012:134). In this sense, vestiges are  
12 active future-facing elements of a non-absent past that re-emerge as uncanny things. That  
13 which layers of history should have concealed reemerges and intercepts the perceived  
14 linearity of time. Whereas for Ewa Domanska, vestiges are passive objects from the past – a  
15 chemical fusion of atomized organic remains with non-organic stone as a result of an atomic  
16 bomb which highlights the more-than-human realities of the Anthropocene epoch (Domanska  
17 2017). Meanwhile, Stein Farstadvoll uses the term vestige to celebrate decontextualized  
18 objects for their meaninglessness, dislocation, weirdness, and defiance of human expectations  
19 pointing toward the fragmentary composition of landscapes (2019c).

20 The only scholar to explicitly define the word “vestige” is Laurent Olivier. For  
21 Olivier, vestiges are relics or prized possessions that witnessed a vanished history but remain  
22 in association to memories of those events and people who have passed. The association of  
23 dynamic meanings with objects is what turns objects into vestiges. As such, vestiges are the  
24 fluid material manifestations of the past in the present. However, rather than simply serving as  
25 carriers of material memories – indexes to be unlocked through habitual reengagement with  
26 objects and landscapes (Jones 2007) or reminders of disjointed non-absent pasts that pull us  
27 toward habitual mnemonic familiarization upon encounter (Olsen 2013) – the vestige is free  
28 to evolve and becomes something else outside of and separate from human engagement with  
29 it. Much like the plants in Farstadvoll’s garden (2019a), vestiges grow on their own accord  
30 with meanings reinvented rather than recalled. Thus, as carriers of material memories,  
31 vestiges give little guarantee that the meanings are the same in the present as they were in the  
32 past or that they will be same from person to person – let alone to non-human persons. The  
33 stripping of meanings, creation of new ones, and the entwining and blending of meanings and  
34 associations is what gives vestiges pluritemporality that undoes sequential and linear  
35 chronological continuity. Objects only stop being vestiges and become artifacts when memory  
36 has been lost and they cease receiving new meanings (Olivier 2011:6-8). For Olivier remains  
37 and artifacts are retrospective and stuck in the past while vestiges are evolving and  
38 multitemporal.

39 The growing ubiquity of the word vestige may have something to do with it signifying  
40 a disarticulated, enduring fragment from the past that has lost its broader context and yet is  
41 persistent and remains tied within a meshwork of shifting memories and meanings. Implicit in  
42 many of these discussions is the fact that the vestige is still recognizable – a shape of a human  
43 figure, a lacquered wooden box, or a plastic road stake – and it is that recognizability that  
44 carries the haunting and uncanny sensations and the abilities to evoke involuntary memories.  
45 An object would not have the same power if it was too small or too disarticulated from what it  
46 once was or could have been – a piece of lacquered wood or a disintegrated plastic fragment.  
47 However, recognizability in the context of a vestige almost guarantees that that recognition  
48 will not be the same as when it was in its original context. The objects in Olivier’s family  
49 reliquary are different to Olivier than they were to the family members they belonged to. Still,  
50 they are recognizable to Olivier because of the mnemonic associations he has to the objects.

1 Recognizability of a vestige poses a few questions – recognizable by whom, in what  
2 ways, and when does a vestige become unrecognizable? These questions are compounded by  
3 the fact that most scholars cited have backgrounds in archaeology – a discipline that excels at  
4 recognizing faint traces of objects and landscapes. While this expert-dependent definition of  
5 vestige could be of value to some people, especially heritage planners, I want to advance a  
6 post-human alternative in this paper – especially in the current case studies that approach  
7 vestiges on a landscape scale. Taking inspiration from Dag Andersson’s discussion on the  
8 ontology of left-over spaces (2014), I posit that an object remains a vestige as long as it is  
9 recognizable to itself. Meaning that, as long as an object is self-contained and self-complete,  
10 as long as there is a certain degree of internal cohesion within the object, it will maintain its  
11 vestigial essence to act as a conduit for involuntary associations and meaning making among  
12 the human and non-human others who encounter it.

13  
14 As such, it would be useful to return to the etymology of the word “vestige” which  
15 originates from the Latin *vestigium* which means “footstep, footprint, trace, mark” (Oxford  
16 English Dictionary 2020). Central to this definition is the unseen, former physical act whose  
17 consequences cuts across time and is encountered in the past, present, and future. The focus  
18 on the self-contained material consequence has great utility for studying the remains of the  
19 resource extraction industry that left a broad assemblage of material consequences within the  
20 landscape where resource extraction has existed. Furthermore, and in line with the work of  
21 Olivier, Shanks, and others, the material consequences are not just passive elements of former  
22 human action but rather remobilizing active agents that shape and reshape the futures to come.  
23 It is through this lens that I return to the sites of Rizh-Guba and the Wabush sand pits to see  
24 just how these vestiges of ancillary impacts of resource extraction play out in the present.  
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### 29 Surveying Vestiges of Ancillary Industrial Impacts 30

31 Much of my fieldwork in western Labrador and the interior of the Kola Peninsula has  
32 followed an archaeology of surface assemblages approach, similar to other recent  
33 contemporary archaeology research (Harrison 2011; Pétursdóttir 2013; Farstadvoll 2019b;  
34 Olsen and Vinogradova 2019). The work consists of site visitation, pedestrian survey, photo  
35 documentation, GPS recording, and notetaking to see how the single industry mining towns  
36 and their peripheries articulate themselves in the present.  
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39 While I explore many of these places on foot, there are drawbacks to solely relying on  
40 this approach given that contemporary industrial operations create massive features that limit  
41 the embodied understandings that characterize most archaeological survey techniques. As  
42 supplement, I have been using satellite imagery available from Google Earth Pro and ESRI to  
43 understand these large objects in a manageable format. While there are drawbacks in relying  
44 on commercial, proprietary software systems (for discussion see McQuire 2019), they do  
45 provide accessible high-resolution imagery to ascertain the nature and scope of the material  
46 remains of ancillary impacts. In addition to that, I employ declassified American spy satellite  
47 imagery for Kola and historical orthoimagery for Labrador to examine how the regions in  
48 question appeared in the late 1960s/early 1970s.  
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51 Preliminary ground-based fieldwork took place at both sites during the spring and  
52 summer of 2019, focusing specifically on documenting sites of ancillary operations. While the  
53 global COVID-19 pandemic prevented revisitation and further field research in Russia, an  
54 extensive round of fieldwork took place in Canada during the summer of 2021. The time slots  
55 were sufficient for site visits of many ancillary industries highlighted in Figures 2 and 4  
56 allowing me to record their present post-industrial conditions. Additional research was carried  
57 out in both the local and regional archives at both locations through COVID-19 and  
58 associated guidelines limited the number of interviews that could be conducted. The  
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1 subsequent discussion draws specifically on Rizh-Guba and the Wabush sand pits since they  
2 represent the most complicated examples of ancillary impacts of resource extraction in my  
3 study areas.

#### 4 *Rizh-Guba*

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6  
7 Seen from satellite imagery, Rizh-Guba appears as a linear feature consisting of four  
8 deep, narrow, and long ravines that stretch southeast to northwest from the shore of Lake  
9 Imandra (Figure 5). Taken together, the ravines are almost five kilometers long. Abutting  
10 these channels are numerous piles of waste rock that can reach over 20 meters high and  
11 stretch up to 500 meters across. The feature has a footprint of approximately 2.8 square  
12 kilometers.

13  
14 Approaching this feature from the ground in July 2019, I observed significant  
15 horizontal variation in the feature relating to its abandonment and subsequent reuse. The first  
16 area encountered as one travels southeast from Monchegorsk is the newest section that  
17 operated from 1975 to 1993. Despite operating for only a third of the quarry's 60-year history,  
18 this section represents two-thirds of the quarry's total size (Figure 5). This imbalance is  
19 explained by the mechanized method of extraction employed at this part of the site and the  
20 overall acceleration of production at the Severonickel plant in the 1970s and 80s leading to  
21 massive environmental degradation in the surrounding area (Bruno 2016:208)

22  
23 Little material culture remains from the previous quarrying operations. It is mostly  
24 limited to a crumbling wooden staircase and the foundations of a concrete ramp used for  
25 loading quartzite. All the usable machinery and infrastructure was salvaged or removed with  
26 most of the buildings demolished with exception for a small, one-story building that contained  
27 discarded packing from explosives. The most obvious evidence of industrial activity are the  
28 mountains of waste rock and a large open pit mine that remains as a spectral expression of the  
29 extractive operations that took place at the site (Figure 6). While tiny by open pit mining  
30 standards, I could not help but feel dwarfed by the barren landscape of mining terraces and  
31 waste pits. Even the evidence of post-abandonment human activity was scanty, consisting of a  
32 short earthen embankment at the entrance of the quarry to prevent vehicular access, scattered  
33 heaps of illegally dumped garbage, a couple of stray tires, and a pile of rusting paint cans and  
34 other hazardous household waste.

35  
36 The feature changes in the south-easterly direction – becoming older and more  
37 overgrown. In the center section that operated approximately in the 50s through 70s, thin trees  
38 have begun the gradual revegetation process of the ravine slopes and waste rock piles. The  
39 area is also mostly devoid of human artifacts, though at the time of visit I observed a  
40 makeshift bench that someone built by putting a couple of planks over two worn-out  
41 armchairs. It overlooked one of the more overgrown ravines. Next to the bench was a fire pit  
42 and a collection of plastic plates, pop bottles, and beer cans in the bushes nearby. This  
43 location highlights the informal domesticity that takes place in locations scarred by industrial  
44 activity. The act of making a formally blasted area homely reoccurs throughout my study in  
45 couches, makeshift firepits, and other furnishings documented throughout the fieldwork. The  
46 pull of turning former industrial landscapes into hangout spots can be explained in two ways –  
47 the aesthetical draw of large open ravines, regardless of their anthropogenic origins, and the  
48 fact that unregulated brown fields create open spaces for human creativity (Edensor 2005a, b),  
49 at least in places that feel relatively safe (González-Ruibal 2017:143).

50  
51 The engagement with the boundaries of this quarry stands in contrast to the  
52 engagement of the footprint of the quarry itself. Surveying one of the more revegetating piles  
53 of waste rock, the view presented a beautiful overlook at Lake Imandra but there was little  
54 sign of former human presence on top of the waste rock plateaus – only one cigarette butt and  
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1 two pieces of bottle glass served as evidence for recent human visitation. However, the  
2 vantage point revealed that some dachas pressed right up against the walls of the waste rock  
3 piles showcasing the constant dwelling with this hard and durable industrial past – one that  
4 pushed at the boundaries but did not transgress upon the feature itself.

5 More dachas dominated the area around the southeast corner of the quarry and the  
6 former workers’ village. As typical, the dachas are highly personalized, built in vernacular  
7 styles, often by the occupants themselves and often representing the occupants’ own  
8 professional or individual interests. Only eight buildings, including the local store, have  
9 survived into the present – compared to almost sixty structures depicted in the 1971 satellite  
10 photo; the rest have disappeared and replaced by dachas. Though some of the worker village  
11 garden plots have also survived and are now maintained by dacha residents.

12 In total, the dachas cover a 2.4-square-kilometre area and often abut former quarry  
13 workings like the ravines and the piles of waste rock. Residents commonly reuse old  
14 industrial equipment like old fuel tanks, rock bins, and construction trailers for personal use  
15 while also drawing water from the flooded quarry ravine (Figure 7). Much like with their  
16 relationship to waste rock piles, the residents of the dacha village do not explicitly occupy the  
17 footprints of the industrial vestige around which they dwell. Rather, their interaction takes  
18 place at the boundary through utilization of the feature’s affordances.

19 Dachas present an interesting place of tension in this space. As previous research has  
20 demonstrated, residents of the Russian north often use the word “dacha” (*дача*)  
21 interchangeably with the word “nature” (*природа*), implying that they consider them to be  
22 one in the same (Bolotova 2012:663-665, 2014). They are vital parts of recreation,  
23 domesticity, and – especially during times of difficult economic conditions – survival. Thus,  
24 one can argue that in the afterlife of Rizh-Guba part of the industrial area has become  
25 something akin to “nature”. This is further emphasized by the quarry’s significance as a water  
26 source – instead of carrying material memories of extraction via heavy metal toxins (see  
27 LeCain 2014), the materiality of the crater surpasses its industrial preconditions to afford life-  
28 giving properties.

29 The fieldwork and history at Rizh-Guba reveal the fact that despite discontinuation  
30 and resettlement of the workers’ village and the shift and decline in extractive operations,  
31 human engagement in the area expanded instead of shrunk. As the trace left by the quarrying  
32 has not disappeared, the footprint of the dachas expanded far outside the confines of the  
33 workers’ village.

### 40 *Wabush Sand Pits*

41 Similar to Rizh-Guba quarry, the fieldwork at the Wabush sand pits revealed a  
42 multifaceted, evolving landscape that was formed by industrial operations but one that has not  
43 stopped evolving since then. A 1969 aerial image of the region depicts the sand pits in the  
44 middle of their extractive life with four active areas directly east of the then-growing mining  
45 town (Figure 8). The aerial image also reveals a small wetland south of the pits being drained  
46 into Wahnahnish Lake and another, smaller clearing further to the southeast. According to a  
47 local informant, the wetland was drained for topsoil harvesting for the town’s landscaping  
48 while the clearing contained a rock crusher for road gravel (Gary O’Brien, pers. comm. 7 July  
49 2021). The former cut lines recorded in the 1985 town plan are also partially visible on this  
50 imagery as straight lines going through the sand pits.

51 Since 1969 sand harvesting shifted southward to new areas while gravel and topsoil  
52 harvesting expanded. Seen today, many of the northern sand pits that were utilized in 1969  
53 have become overgrown while more recent pits remain clear of vegetation. Former cut lines  
54 have generally disappeared though the durability of some has been enhanced by their  
55

1 continued use as trails. The fieldwork in the area confirmed these observations by  
2 documenting the reuse and widening of some former cut lines for recreational use and the  
3 disappearance of most due to revegetation. In total, the sand pits are approximately 2,800  
4 meters long by 125 meters wide at its furthest extent (Figure 8).

5 Over the years the area also witnessed Wabush's ski hill that briefly operated in the  
6 1970s; a ball field, established in the 1970s on the north side of the sand pits; and cemetery,  
7 dating back to the founding of the townsite. Until the 1990s, access to the cemetery was  
8 through the sand pits themselves. While a new road was constructed to provide this access,  
9 the old road remains and is colloquially referred to as "sand pit road". Much of it has shrunk  
10 down to only accommodate snowmobiles and all-terrain vehicles (ATVs) and does not  
11 receive any maintenance. In the winter it becomes part of the provincial snowmobile system  
12 (Figure 9).

13 My surveys of the pits took place in August 2019 and July 2021. During the visits, I  
14 observed how much of the original pits have been overgrown by speckled alders (*Alnus*  
15 *incana rugosa*) – a virulent Labrador auto-rewilder that quickly takes over road edges, gravel  
16 pits, abandoned lots, and other outlying spaces (Figure 10). Meanwhile, the non-revegetated  
17 areas have become informal places for recreation.

18 During the 2019 survey, I focused mostly on the non-vegetated areas of the sand pits  
19 recording 24 separate instances of fires (labelled as "fire pits"), 10 jumping ramps for dirt  
20 bikes and ATVs, and three different vehicle wrecks (Figures 9 and 11). In 2021, this work  
21 was expanded to encompass the entire area; all ATV trails (former roads for hauling  
22 aggregate) were field walked, and the non-vegetated areas of the sandpits were surveyed at  
23 five-meter intervals. The revisitation recorded 42 fire pits, 16 jumping ramps, and one  
24 snowmobile wreck.

25 The work revealed that young people were largely using the area for recreational  
26 purposes. This was not a new development as several older informants told me that they used  
27 to play around in the area in their youth. Though, while they had memories of this place, they  
28 noted repeatedly how much the area has overgrown since their youth as if the plants  
29 themselves were signifiers of time in the absence of any visible material culture besides the  
30 outlines of the excavated craters themselves. For my informants, the sand pits are a place of  
31 memory though one with fading recognizability due to rewilding. Likewise, these memories  
32 were associated with drinking and riding around rather than the industrial activities that took  
33 place in these locations.

34 The second survey of the sand pits also documented fluidities and continuities around  
35 the material culture of the area. Some fire pits recorded in 2019 were not present in 2021,  
36 having been absorbed by the sandy soil. Ashes of several other fire pits were starting to scatter  
37 and dissipate into their surroundings.

38 Meanwhile, jumping ramps presented interesting observations as well. Some of the  
39 ramps were made of wood or wood-and-rubber composites, with the rubber recycled from  
40 conveyor belts in the iron ore crushing and concentrating plants in the mines. These jumping  
41 ramps are more durable with the same ramps being recorded in both surveys – though some  
42 were starting to show their age. However, most of the ramps were made of piled sand and  
43 some of the largest ramps seen in 2019 were almost completely eroded two years later. The  
44 use of sand ramps further indicates the shifting, impermanent nature of the area. New sand  
45 ramps could be built as old ones erode back into the ground as part of a dynamic practice of  
46 maintaining informal recreational infrastructure for dirt bike and ATV users.

47 In 2019, I assumed that the most durable pieces of material culture in this area would  
48 be the car and ATV wrecks. Out of the three recorded in the first survey, one consisted of a  
49 burnt-out ATV that has rolled over on its side while two were a highly disassembled car and  
50 snowmobile found together with their metal parts strewn about in a tightly concentrated area.



1 This concentration also contained other waste like brush cuttings, two modern stoves, and two  
2 “Town of Wabush” traffic barriers (Figure 9). This concentration is featured in the  
3 aforementioned art exhibit by Tanea Hynes highlighting its prominence as part of the Wabush  
4 sand pits (Hynes 2021:11). Yet, to my surprise all the vehicle wrecks recorded in 2019 had  
5 disappeared by 2021. This indicates that the sand pits undergo episodes of informal cleaning  
6 (informal because the Town of Wabush takes no responsibility for the pits today), which  
7 means that even small landmarks, like the wrecks memorialized by the art of Tanea Hynes,  
8 disappear as the area undergoes successive changes. In total, only sixteen features recorded in  
9 2019 were present in 2021 – nine fire pits, six ramps, and one ductile iron pipe.

10 The elements that proved durable in the sand pits were the landscape alternations  
11 themselves. In addition to the pits themselves and the afterlives of former cut lines, the field  
12 research documented the remains of the bog used for topsoil harvesting. During fieldwork, the  
13 bog did not appear so much as a wetland as rather a low-lying depression crisscrossed by  
14 ATV and snowmobile tracks. The remains of the ductile iron pipe and ditch that drained the  
15 wetland ahead of extraction were also present – having become overgrown, silted-in, and  
16 partially buried. The pipe is the only real artifact from the extractive use of the area.  
17 Meanwhile, there were no traces of the rock crusher on the southern end of the sand pits,  
18 though the area around it contained plenty of glacial till that was extracted for gravel.

19 Finally, during my surveys, I observed several people utilizing the area. In addition to  
20 youth on dirt bikes and ATVs, several older people used the area for walking or riding  
21 bicycles, showing the multi-purpose recreational use of the sand pits. While Wabush has  
22 several recreational trails and a town park, this unstructured area seems preferred. One  
23 advantage that the sand pits have over other recreational areas is that they are one of the few  
24 places in town where the mine and the mine workings are not visible. It could be postulated  
25 that in a community where the town and the mine are literally facing each other, a large area  
26 away from industry that allows for informal play and recreation creates a powerful “node”  
27 (Gordillo 2014:21) for frequent reuse and revisitation – a place to be in nature but also in a  
28 place that affords new meanings, memories, and attachments in an ever-evolving palimpsest.

## 35 Discussion

36  
37 Even though Rizh-Guba and the Wabush sand pits may seem spatially and  
38 chronologically worlds apart, they both supported industrialization of their respective regions  
39 and both continue to persist and expand in the present. It would be improper to call these  
40 places “artifacts” of mining developments (following Olivier’s conceptualization of the word)  
41 since they are actively evolving objects that have retained a part of their original essence even  
42 though the broader political and economic shifts in the late twentieth century have  
43 decontextualized them from their original intended purpose. This survival is because planning  
44 and development interests have – at least in part – forgotten these features allowing them to  
45 escape much of the discourses regarding remediation and heritagization that often surrounds  
46 former industrial spaces. The lack of active human concern is perhaps not surprising as both  
47 the mines in Wabush and the refinery complex at Severonickel have in recent years struggled  
48 for economic survival and environmental accountability (for some examples see Genge 2009;  
49 Goodyear 2012, 2015; Moiseenko et al. 2018; Britskaya 2019; Nilsen 2019). What planning  
50 intervention that did take place has so far promoted human presence and interaction with  
51 these landscapes but not in their original ways. At the same time, vernacular reuse illustrates  
52 how the material affordances of industrial vestiges can be unequivocally different from those  
53 that dominated their active use highlighting the difficulty in pinning original meanings  
54 associated with objects and places.  
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1 There is a tension here. On one hand, one can observe a freedom to escape and grow  
2 beyond human planning and intentionality. While on the other hand, there is also a  
3 dependence and active reuse of the past where elements of former industrial operations  
4 sustain themselves through new roles. As I have explored elsewhere (Venovcevs 2020a),  
5 there is a past dependency and involuntary habit memory that comes across particularly  
6 strongly in northern single industrial mining towns where old materialities do not disappear  
7 but remobilize to serve new purposes in each successive present. While these new purposes  
8 are creative, vibrant, dynamic, and, at times, transgressive toward original human intentions,  
9 they are still circumscribed by the things' own material affordances. This can be seen here  
10 with dachas utilizing a quarry that inadvertently filled up with potable water or with  
11 motorized recreational vehicles that maintain the footprint of a sand pit through use that  
12 discourages revegetation.

13  
14 This feeds into the pluritemporal aspect of vestiges meaning that they can  
15 simultaneously evoke multiple meanings at multiple times. As observed in the case studies  
16 presented here, associations with vestiges differ between industrial and post-industrial use,  
17 across succeeding instances of post-industrial use, and even geographically over time as the  
18 whole evolves into multiplicities. Those fragments in turn further surpass their previous  
19 historic boundaries and shoot off on different trajectories expanding in an ever-deepening  
20 mosaic. On a long-enough timeline, it would be impossible to think of a landscape vestige as  
21 a single, unseparated whole. This fragmentation speaks to the temporal unevenness previously  
22 observed among the afterlives of industrial operations that emerge in situations where the  
23 character of former industries is poorly defined, recognized, or agreed upon (Storm 2014).

24  
25 Fragmentation and fluidity highlight the illusiveness of vestiges to stay pinned to a  
26 single identity. Most people I talked to, along with newspaper and documentary accounts, did  
27 not readily connect to either Rizh-Guba or the Wabush sand pits as places of extraction.  
28 Rather their connections to these places are those of dwelling, rest, and recreation, along with  
29 associated activities of fires, riding, drinking, access to nature, and, in Wabush's case,  
30 entrance to the cemetery. While there are still people alive who have worked in extraction in  
31 both of my case studies, the current associations are distinctly different from past ones. Their  
32 ascription as industrial, albeit involuntary and contemporary, heritage comes from me as an  
33 archaeologist and a scholar who has tracked their developments and post-use lives rather than  
34 any local recognition to their historicity. My argument here is not that this historicity should  
35 be acknowledged or celebrated, but rather merely heeded to understand how the dispersed  
36 remains of ancillary operations outlive their uses in the service of sites of industrial  
37 production.

38  
39 This gets us back to the topic of recognizability. The recognizability of vestiges by  
40 most human observers becomes fainter and fainter as the industrial vestiges grow vaguer over  
41 time – as highlighted by the disconnect between peoples' association of recreation with these  
42 places and my draw to them as industrial heritage. While the identification of paleolithic stone  
43 quarries by archaeologists suggests that they would always be recognizable at least to some  
44 human agents trained in that task, their internal self-recognition implies that fragments of  
45 vestiges will always evoke meanings while they remain self-contained and self-complete.  
46 While traces and marks remain in the landscape, human and non-human agents will always  
47 have to contend with the affects and effects of that something that was there even as the  
48 depths of time conceal its original purpose and identity.

49  
50 Of use here might be the concept of *Nachleben* coined by Aby Warburg and applied to  
51 the study of afterlives by Marek Tamm (Tamm 2015:9-10; Tamm and Olivier 2019:5-6).  
52 *Nachleben* is not so much as an "after-life" as the translation of the word implies but more of  
53 a survival and continuation, a state where past, present, and future entangle with each other.  
54 Going back to the Latin *vestigium* – a footstep, footprint, trace, or mark has no intrinsic

1 historicity. While archaeologists can date footprints of ancient humans through stratigraphy  
2 and other indirect means, footprints in and of themselves bear no date. They are haunting  
3 witnesses of that consequence that cuts through chronology. Thus, the issue with vestiges is  
4 that they are inherently unpredictable things that transgress all abilities and desires to control  
5 their uses, meanings, and chronologies. As long as a landscape vestige remains recognizable  
6 to itself as some spectral trace of human action that refuses to disappear under redevelopment  
7 or paused through museumification, it will continue to be a vestige cutting beyond its  
8 temporal and geographical boundaries.

9 This preoccupation with afterlives and vestiges are not merely theoretical fixations.  
10 Rather they highlight the unacknowledged geographical extent and the limitations of current  
11 lifecycle planning within the resource extraction industry. They represent a material spill of  
12 extraction zones and material culture that stretches outward beyond the factory gates of  
13 Severonickel and the Wabush mines. Even the seemingly minor observations of industrial  
14 equipment being reused in and around Rizh-Guba and the Wabush sand pits should not be  
15 overlooked as they represent the steady diffusion of industrial objects and equipment outward  
16 into the surrounding spaces.

17 In a global context, the case studies presented here are just two examples of a larger  
18 assemblage that includes other quarries, woodcuts, runways, farms, communication towers,  
19 transportation networks, cable and electrical lines, and power stations that ripple outward in a  
20 network along the extractive frontiers around the world to feed distant industrial centers and  
21 the so-called postindustrial societies of many Western nations. Examples of similar  
22 phenomena have been documented elsewhere – in the North West Territories where  
23 Indigenous trappers use and maintain former cut lines for traditional trapping purposes  
24 (LeClerc and Keeling 2015), in Alberta where ATV users employ seismic lines from oil  
25 surveys for recreational use (Lee and Boutin 2006), and during my own time in Labrador  
26 where many people mentioned moose and wolves utilizing hundreds of kilometers of used  
27 and disused roads and electrical corridors as pathways deeper into the region – displacing the  
28 smaller caribou from their native habitat.

29 The concept of vestige thus allows scholars to talk more constructively about the  
30 landscape of ancillary impacts surrounding resource extraction operations. As implied by  
31 Olivier and other scholars (Olivier 2011; Hopper 2020), it could in fact be argued that all  
32 landscapes are made up of such vestiges, at least those that do not artificially seek to arrest  
33 decay in favor of museumification. While in Oliver’s discussions, vestiges allow a shift in our  
34 thinking from a past that is sequential to one that is about durations and memories, a position I  
35 generally support, I hesitate to jump on the claim that everything about Wabush and  
36 Monchegorsk is vestigial as it overlooks the newness, the speed, and the disregard to the lives  
37 and pasts of Indigenous people that defined their initial construction – elements that have  
38 come to, in part, characterize the last century (González- Ruibal 2008). For me in this article,  
39 vestige is a heuristic tool to understand the afterlives of the dispersed network of ancillary  
40 operations surrounding the Wabush mines and the Severonickel plant.

41 Similar work should be done on other ancillary operations that supported industrial,  
42 public, or even military developments in many other regions to trace networks of widespread  
43 unintended transformations that followed in their wake. While such ancillary operations  
44 would be present in all periods, their size and proliferation today are characteristically  
45 “supermodern” (Augé 1995; González- Ruibal 2008; González-Ruibal 2019). As described in  
46 this article, the demands of garden city design in Wabush precipitated the extraction of sand,  
47 gravel, and topsoil in the sand pits. At the same time, while the extraction at Rizh-Guba began  
48 with hand tools not dissimilar to those used since the Iron Age, the demands of accelerating  
49 rates of production expanded the extraction at Rizh-Guba to mass destruction levels. Like the  
50 ruins of the south (González-Ruibal 2017), the scars left behind by the collective sum of  
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1 ancillary operations, create a mass of matter that is too big, too unwieldy, and often too  
2 overlooked to have anything done with them. It is excess matter and from this excess that the  
3 quarries in my case studies have such diverse and multifaceted afterlives.

4 As such, my analysis here reveals that landscapes marked by abandoned ancillary  
5 operations are ones of unpredictability as human planning and intentionality are constantly  
6 surpassed. Disentangled from their industrial enterprises, they are released from being  
7 “things-for-us” (Pétursdóttir 2014:339) and cut outwards as marks and traces of those same  
8 industrial developments deeper and further in the pluritemporal *Nachleben*. Such work speaks  
9 to the broader discourse currently playing out regarding sustainability and remediation within  
10 the resource extraction industry (for some examples see Sandlos and Keeling 2012, 2016;  
11 Didyk and Rjabova 2014; Storm 2014; Plisetskiy and Malitskaya 2017; Beckett and Keeling  
12 2018; Nedoseka and Zhigunova 2019; Tolvanen et al. 2019). While making resource  
13 extraction more socially responsible and “green” is commendable in principle, the  
14 unpredictable vestigial qualities of ancillary impacts of resource extraction highlights the  
15 limits of human ability to account for the unforeseen material and temporal spill that extrudes  
16 from such activities.  
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## 20 Conclusion

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23 To contribute to the rich tradition of industrial and contemporary archaeology, I  
24 focused on exploring the unruly legacies of two ancillary operations of resource development  
25 in Russia and in Canada with the understanding that these are just a part of a large  
26 constellation of supporting features that blur the boundaries of resource extraction facilities.  
27 To facilitate their understanding, I developed upon the term “vestige” as has become popular  
28 for use among scholars. By grounding the definition in the work of Laurent Olivier (2011)  
29 and returning to the etymological roots of the word, I highlight how a vestige is that which  
30 maintains a part of its own substance and identity while being an agential cut across time and  
31 space.  
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34 Vestiges that represent disused ancillary impacts surrounding extractive industry  
35 development form active networks of fragmentating, evolving, and spatio-temporally uneven  
36 palimpsests. “Vestige” is a particularly useful concept in this context because it highlights the  
37 fact that abandonment and disuse is not an end in itself that leaves the trace ready for  
38 rehabilitation, revegetation, or museumification. Rather, a vestige is active and contains  
39 potential for reanimation and reactivation as human and non-human actors reengage with it in  
40 new and unforeseen ways. The ahistorical *vestigium* of the resource extraction industry  
41 facilitates constellations of becomings in the long-lasting material consequence of the event  
42 that caused it.  
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45 Both at the quartzite quarry of Rizh-Guba and at the Wabush sand pits, I observed  
46 these various becomings through fragmentation, re-inscription, and remobilization in and  
47 around the vestiges that facilitated new and unique uses that at times went beyond their  
48 industrial origins. While currently they provide spaces for rest, relaxation, creativity, and  
49 unstructured recreation, many of these reuses maintain the characteristics of these features by  
50 utilizing their material affordances in fluid and unpredictable ways.  
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52 In this context, the vestiges of the Rizh-Guba quarry and the Wabush sand pits  
53 continue to push the temporal and geographical limits of the resource extraction industry  
54 outward. This reveals an uncomfortable fact about resource extraction – when examined  
55 through the concept of vestige, the ancillary impacts of resource development expose how  
56 resource extraction escapes the geographical and temporal boundaries of the extraction and  
57 processing site and spreads outward as a pluritemporal collection of unruly conglomerations.  
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1 These observations are important to consider in our understanding of the dispersed  
2 impacts and legacies of resource extraction both in the present and the past. How different  
3 would the legacies of the industrial revolution look if scholars accounted for the entirety of  
4 constellations of ancillary industries that arose, declined, and evolved in parallel to and in the  
5 aftermath of the primary industries that they supported? How different would the legacies of  
6 the current industrial age appear? As illustrated by Lawrence, Davies, and Turnbull, dispersed  
7 infrastructure networks carry a heavy anthropogenic effect (2016, 2017). Even though,  
8 individually, ancillary impacts are small and benign compared to their core industrial  
9 operations, they are large in their total accumulated volume, geographical scope, and temporal  
10 durations. They are multiple and dispersed and often do not draw the same amount of  
11 attention and care that the core industrial operations do. Thus, it is inevitable for some of them  
12 to escape during industrial decline or restructuring to become vestiges on their own  
13 trajectories that carry the deep cuts of the undying legacies of extractive industry.  
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15

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17  
18  
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43  
44 <sup>1</sup> Iron Ore Company of Canada film "Ore in '54" made to promote and celebrate the  
45 company's achievements begins by calling the interior of the Labrador Peninsula "lonely,  
46 vast, and remote" that has been "neglected for centuries" (Les Studios Cinécraft 1954). While  
47 the interior of the Labrador Peninsula was neglected by western business interests (aside from  
48 the fur trade taking place since the late 18<sup>th</sup> century), this conspicuously ignored the thousands  
49 of years of Indigenous history in the region (Loring et al. 2003; Neilsen 2016).  
50

51 <sup>2</sup> According to Statistics Canada website (www12.statcan.gc.ca), the 2016 population of  
52 Labrador City is 7,220 and Wabush is 1,906.  
53

54 <sup>3</sup> An interesting additional perfective also comes in a footnote in Gordillo 2014 where  
55 *vestigios* is a word used by local people in northern Argentina to refer to piles of rubble  
56 without a defined form (271) which points to the vague, indeterminate state that vestiges can  
57 often occupy.  
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Name-and-Address Block

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Figure Captions

FIGURE 1: Town of Monchegorsk in the Murmansk Region, northwest Russia (Map by the author, 2020).

FIGURE 2: Monchegorsk and its surrounding ancillary impacts and former settlements. Rizh-Guba settlement and quarry are in the southwest corner (Map by the author, 2020).

FIGURE 3: Labrador City and Wabush in Labrador, Canada (Map by the author, 2020).

FIGURE 4: Western Labrador mining towns and their surrounding ancillary impacts. Wabush sand pits are in center bottom (Map by the author, 2021).

FIGURE 5: Rizh-Guba quarry on the shores of Lake Imanda in 2019 (above) and same area in 1971 (below) (Map by the author, 2021).

FIGURE 6: Northwest corner of the Rizh-Guba quarry (Photo by the author, 2019).

FIGURE 7: Southeast corner of Rizh-Guba. Top left, bench made from two arm chairs. Top right, reused water tank at a dacha. Bottom left, reused rock bin. Bottom right, oldest part of the quarry, now being used as a water source (Photos by the author, 2019).

FIGURE 8: Wabush sand pits in detail as seen in 2019 (left) and same area in 1969 (Map by the author, 2021).

FIGURE 9: Human use of the Wabush sand pits. Top left, vehicle wreck that disappeared after 2019. Top right, multicomponent jumping ramp. Bottom left, snowmobiles only road sign. Bottom right, an example of a relatively recent fire pit (Photos by the author, 2019 and 2021).

FIGURE 10: Overgrown sand pit near Wabush (Photo by the author, 2019).

FIGURE 11: Results of the 2019 (left) and 2021 (right) surveys (Map by the author, 2021).

1  
2 Conflict of Interest  
3

4 This study was funded by the Norwegian Research Council (grant number 250296) and the  
5 Social Science and Humanities Research Council of Canada (grand number 752-2020-0447)  
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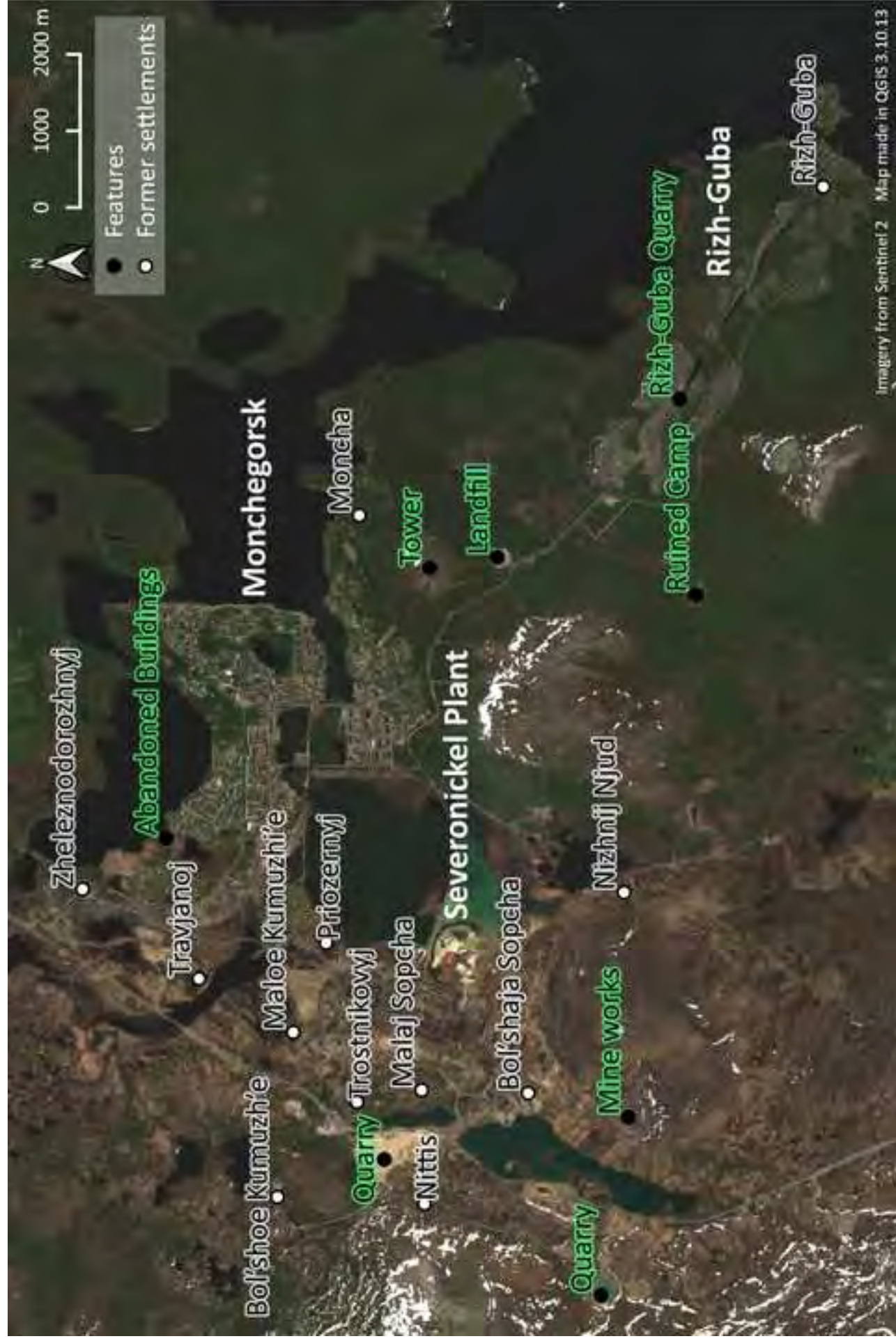
Figure 1





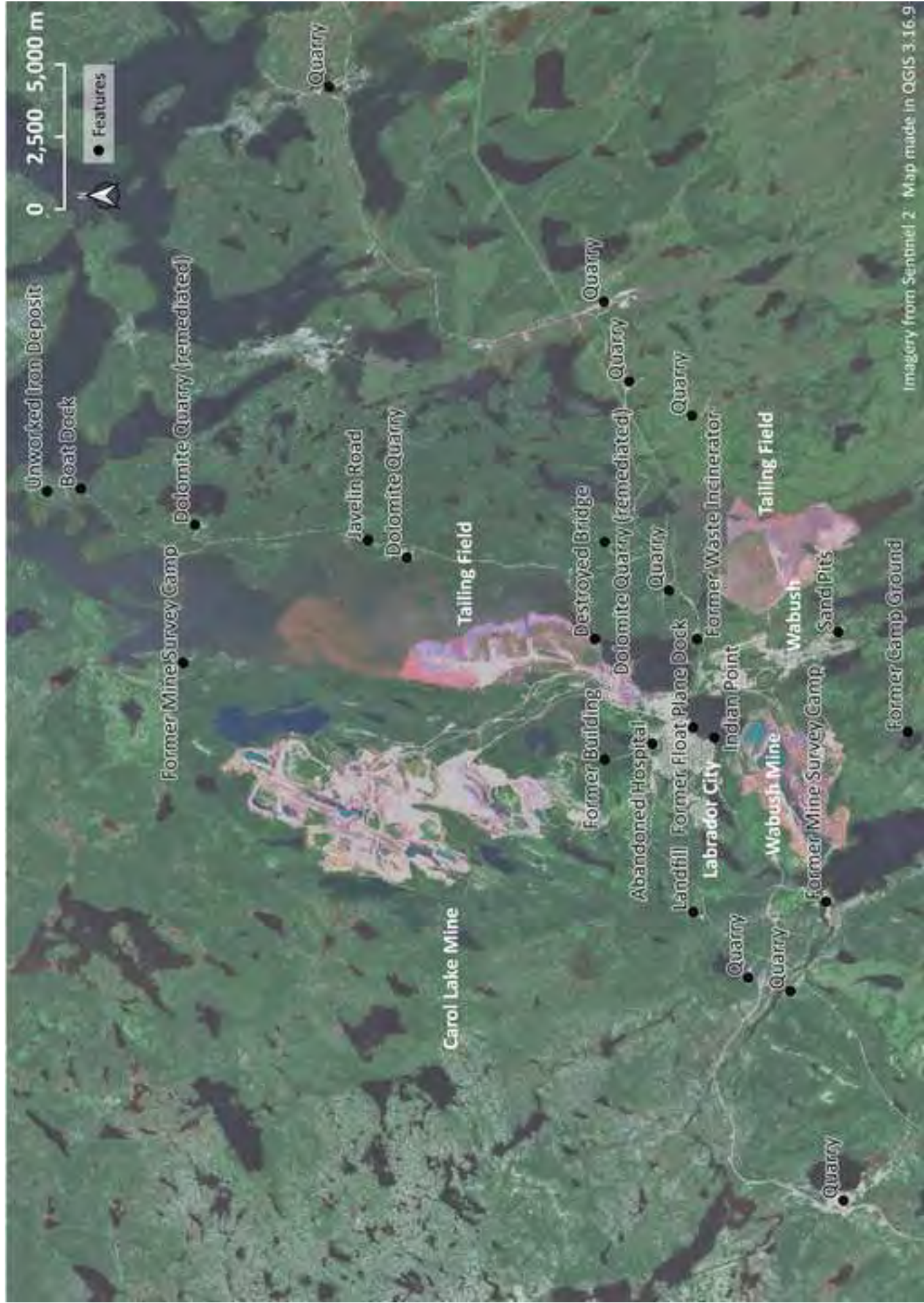
Figure 2

[Click here to access/download:Figure:VenovcevsFigure2.jpg](#)



Imagery from Sentinel 2 Map made in QGIS 3.10.13





Imagery from Sentinel 2 Map made in QGIS 3.16.9



Figure6



Figure7

[Click here to access/download;Figure;VenovcevsFigure7.jpg](#)



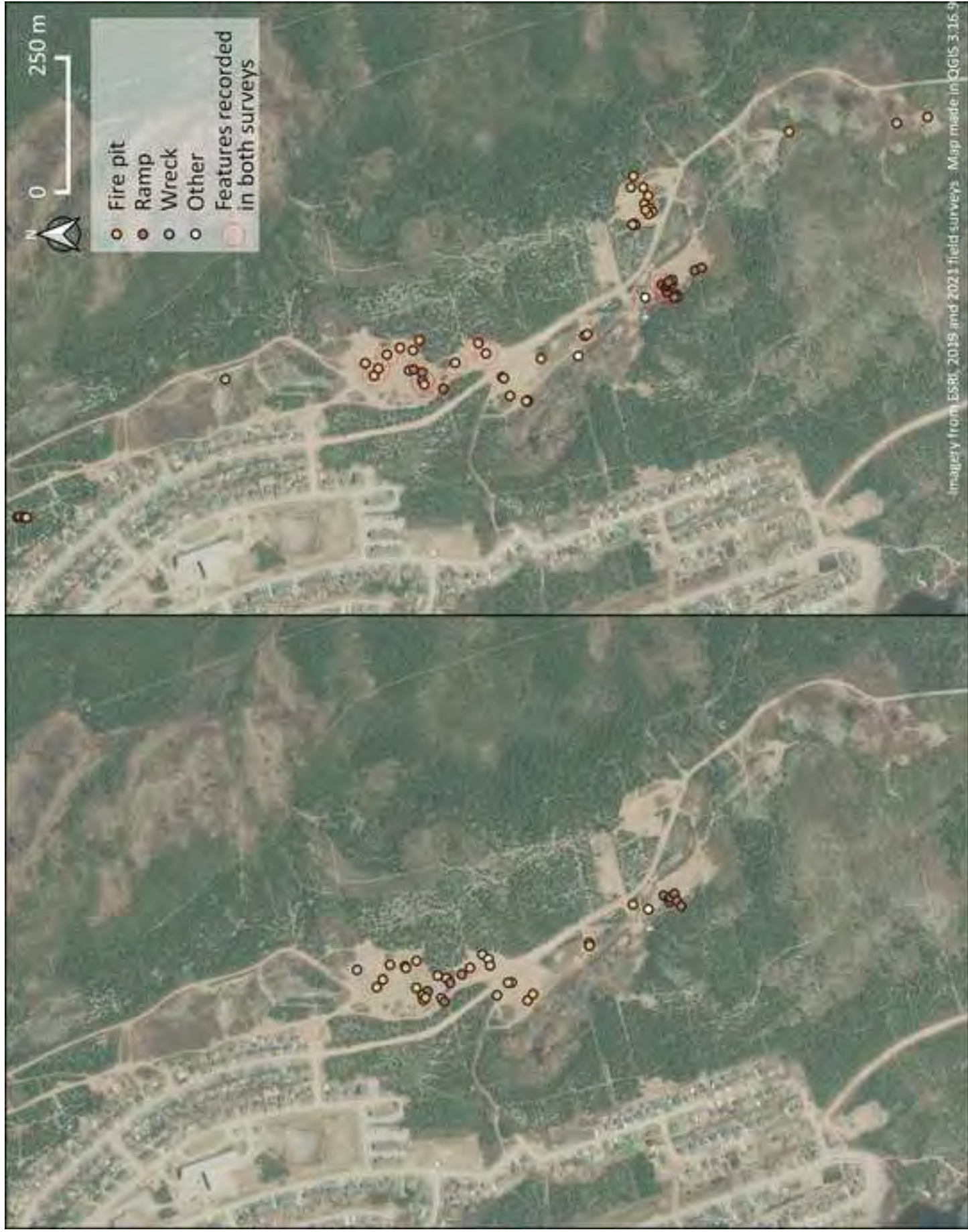






Figure10 New





## **Article D**



## **Article E**



## **Between Use and Abandonment: An Archaeology of Mothballing** Anatolijs Venovcevs (UiT: The Arctic University of Norway)

### **Introduction**

The first time I stepped inside on the property of the Sydvaranger iron mine in Bjørnevatn, Norway (Figure 1), I walked through a pair of truck tires that marked the boundary of the premises (Figure 2). A gate blocked vehicle traffic but a well-worn path between the tires and the gate implied that the area was regularly trafficked by people. A subsequent conversation with a local informant confirmed that residents in Bjørnevatn used the area for walking their dogs – as attested by a purple dog ball found within the boundaries of the property (Figure 3). Later, I observed this behaviour myself around the disused mining pits.

Over the next few years, I extensively explored the Sydvaranger property alone and with both colleagues and local informants following methods laid out by others (Andreassen, Bjerck, and Olsen 2010; Olsen and Pétursdóttir 2014b; Pétursdóttir and Olsen 2014; Olsen and Vinogradova 2019; Farstadvoll 2019a). These included frequent revisitation and systematic photography of buildings, rooms, and lookouts to capture the material state of things at a non-functioning iron mine as well as notetaking and discussions with others about their impressions of the place. Locked buildings and doors were avoided, and extra care was taken around the sheer cliffs of the open pits in the mining area. I conducted this research as part of a larger project that sought to understand the heritage and lived realities of mining enterprises in twentieth-century Arctic and sub-Arctic single industrial communities in Norway, Russia, and Canada (Venovcevs 2020a, 2022a, b, in press)

As I familiarized myself with the Sydvaranger facility, I was impressed at how the things left within it exhibited a form of anticipation. Mining trucks sat in the garage, a coat hung over a plastic chair, a computer was plugged in the breakroom, and binders of notes in the administrator's office offered a broader written record than the company archives at the local museum. Sydvaranger evoked a feeling of postponement similar to that experienced by Andreassen, Bjerck, and Olsen in the abandoned High Arctic Soviet town of Pyramiden where the things needed to run a mining town were still in place simply waiting to be used thus revealing an aspect of out-of-time-ness to the abandonment (Andreassen, Bjerck, and Olsen 2010, 11; see also Olsen 2013a, 212-213; Olsen 2013b, 185-186). While Sydvaranger afforded similar associations there was one notable difference – unlike Pyramiden, the Sydvaranger iron mine was not abandoned.

### **Sydvaranger**

Sydvaranger occupies a large role within both local and national history, geography, and culture. Established in 1906 it gave rise to the contemporary communities of Bjørnevatn and Kirkenes, home to the company's mine and processing/shipping facilities, respectively. The company suffered several downturns, including a bankruptcy in 1925 and almost complete destruction during the Second World War. The mine was rebuilt after the war with majority government ownership that provided a stable working environment for over 30 years (Wikan 2006; Kvammen 2021).

Things started to change in the 1980s when, after several years of running large deficits, the Norwegian government started to pull back its involvement in the mine and diversify the local economy both within and outside the extractive industry (Wikan 2006, 243-261; Henningsen 2021). Despite such measures the mine shut down in 1996 and most of its equipment was sold off a year later.

The sale of Sydvaranger's equipment did not stop potential interests in the mine which still had sizable ore reserves. Several interested parties came and went until 2006 when Tschudi Enterprises, a shipping company, bought the Sydvaranger facilities – arguably being more interested in an Arctic seaport than a defunct iron mine. Through their network of global connections, Tschudi Enterprises managed to attract an Australian mining company and create a subsidiary, Northern Iron Limited, that reopened the mine in 2008 (Tschudi 2010; Lund 2015, 142-146). After a year of

purchasing new equipment and rebuilding after over a decade of disrepair, mining restarted with a plan to run for 20 years (Olsen 2008; Tschudi 2010).

It lasted for 6. The plunge in global iron prices and low mine productivity led Northern Iron Limited to declare bankruptcy in 2015 (Sandø 2015). Instead of letting their assets be sold off or fall into disrepair again, Tschudi Enterprises took over the mine and its assets. Since then, Tschudi Enterprises employed approximately 50 people to keep the facility in a state of readiness. While this included a brief and aborted state of reprocessing mine waste in 2016, mostly the idea has been to keep the site maintained in anticipation of a restart that has been expected every passing year. While mining has not restarted, people, things, and, arguably (Wråkberg 2019), the community around them are waiting for the restart of the mothballed operation.

## **Mothballing**

Mothball, as a verb, is defined in a figurative sense as “to take (military hardware, a building, etc.) out of use or active service; to set aside or postpone consideration of (a plan or project) for an indefinite time” (Oxford English Dictionary 2022). It is the term that gets applied to institutions, facilities, and large pieces of hardware placed in a state of offline readiness for when they become a reusable surplus – a sunk cost that is too expensive to operate but too valuable or too bulky to easily get rid of.

The word has its origins in the mothball – a white ball, formerly of camphor, now of naphthalene and paradichlorobenzene invented in 1891 and used to keep clothes stored and free of moths and other insects for protracted periods of time (Harper 2022). The mothball does this by slowly evaporating and releasing a poisonous gas that kills insect larvae. However, it is not merely harmful to insects. Mothballs, specifically the chemical naphthalene, should not be eaten or inhaled and to this day remain a persistent toxicant and carcinogen (Sudakin, Stone, and Power 2011; Zhao et al. 2013; Dubey et al. 2014). Thus, rather than simply keeping the unwanted insects away, a mothball is an inherently dangerous substance.

Soon after its invention, mothballing became a verb in a literal sense – to put a piece of clothing in mothballs. The figurative sense of the word took a few more decades to emerge becoming popular at the end of World War II when most of the US war fleet was mothballed in peacetime (Madsen 1999; WWII After WWII 2016a, b). The ships were stripped of material that was prone to leak, explode, or rapidly corrode, coated with grease, rust repellent, and plastic, and left in expectation for future use. For many vessels, this expectation was fulfilled when they were reactivated for Korean War and Cold War service while others were resold to other nations. Reactivation became less common over time as changes in military technology made many of the World War II ship hulls obsolete, limiting reuse into the 1960s, 70s, and 80s. Purges of these ships took place sporadically with vessels being scrapped or, in a few examples, deliberately sunk to make way for coral reefs (Reno 2019, 84-85). It was not until 2011 that the last World War II ship was permanently decommissioned (WWII After WWII 2016b). Cold War era ships took place of World War II ones as a consequence of permanent war readiness and development of newer, more powerful technologies (Reno 2019).

Mothballing has also become a common concept within economics where mothballing is suggested as a strategy to reduce operational costs and avert complete shutdown in expectation for improved market conditions in the future (Arango, Castañeda, and Larsen 2013; Tomaskova et al. 2013; Guerra et al. 2018; Corporate Finance Institute 2022). Similar moves have also been proposed in historic building preservation in the absence of funds for preservation or interested parties for repurposing (Park 1993). Ultimately mothballing is discussed as a corporate response in an uncertain future, a response that increases in times of greater perceived instability (Browne, Stehlik, and Buckley 2011, 720-721; Guerra et al. 2018, 69-70).

In this literature, mothballing has at times been seen as a menace. Mothballed urban lots are difficult to regulate, forestall redevelopment, and drive-up housing prices (Greenberg, Downton, and Mayer 2003; Arango, Castañeda, and Larsen 2013). Mothballed mines hinder post-mine remediation,



reuse, and economic diversification (Kivinen 2017, 10-11). Mothballed oil wells continue to act as environmental liabilities through greenhouse gas emission and ground water pollution (Muehlenbachs 2015). Mothballing is a way for companies to escape liability and for things to become “ownerless” with responsibility for any clean-up or remediation falling upon the government. Meanwhile, people experiencing sudden mothballing have to live with the emotional and economic shock of an indefinitely shuttered facility (Browne, Stehlik, and Buckley 2011), which can become an anchor for cruel optimism – a toxic anticipatory attachment to an enterprise as the key purveyor for a possibly better future (Beer 2016).

Implicit in mothballing is the contemporary proliferation of things be they clothes, ships, or industries and a desire to manage the profusion (see also Macdonald, Morgan, and Fredheim 2020). Mothballing of clothes, for example, would not have been possible without a surplus of clothes that came with industrialization of the textile industry and the accelerating fashion shifts of the late Victorian period. Rather than letting go and decommissioning surplus things, there is a desire to pause their temporal aspects with the expectation that they might be required again. Thus many western homes have a “cupboard of doom” where the profusion of things indefinitely waits for their turn to be useful once again (Morgan and Macdonald 2020).

Therefore, from its conceptual development and application, to put something in mothballs in both a literal and a figurative sense is meant to serve as a chronological disruption to preserve the usefulness of a thing for humans, governments, and corporations with minimal effort and cost – an attempt at postponement of ruination, a twilight zone between use and abandonment.

## **Abandonment**

Attention to mothballing speaks to the discussions on abandonment within and outside archaeology. Originally (and often today) an “abandoned site” has been an uncritical shorthand for a site devoid of human activity and thus a place for archaeological attention (Colwell-Clanhaphonh and Ferguson 2006, 37). An abandoned site comes to exist after what Michael Schiffer referred to as “systemic context”, material within a behavioural system of a human society prior to it entering an “archaeological context” (Schiffer 1972). Thus, early work on abandonment focused on establishing a bridge between the material found within the archaeological record and the past lives of people (Ascher 1968; Schiffer 1972, 1987; Stevenson 1982; Cameron and Tomka 1993; see Pétursdóttir 2014, 336-340 for discussion and critique).

In these discussions, ideas akin to mothballing have been floated around. These include “punctuated abandonment” and reoccupation that leave behind standing structures, cached items, and duplicate supplies (Graham 1993, 31-33); “episodic abandonment” and delayed curation and the gradual scavenging of good quality items from the site (Tomka 1993, 15-22), and abandonment with anticipation to return that leaves behind cached or stored items (Stevenson 1982). Meanwhile, in regards to personal possessions, there has been a growing understanding of “secondhandedness” (Hetherington 2004) that creates a temporal gap between use and discard (Adams 2003).

Understanding that leaving is complicated, recent work on place abandonment has sought to nuance earlier discussions by shifting towards a more qualified “detachment from place” that acknowledges the multitudes of affective, practical, traumatic, and multitemporal ways in which people may choose to disengage with a place (Lamoureux-St-Hilaire and Macrae 2020). However, most of these discussions hinge on the assumption that places exist in some kind of idealized or distinct stages of development like, for example, pre-abandonment, abandonment, and post-abandonment (see Deal 1984). It follows that anything non-abandoned can also be considered non-archaeological as implied by Michael Schiffer or, more recently, by Alfredo González-Ruibal who asserted that abandoned places lie in “a time of agony” – a time when history ends and archaeology starts (González-Ruibal 2019, 131-132).

However, as pointed out by Colwell-Clanhaphonh and Ferguson, abandonment and non-abandonment are false categories. Borrowing terminology from Schiffer they argue that a site can exist both within a systemic context and an archaeological context and further postulate that to

claim sites abandoned can not only be simplistic but also disenfranchising to descendent communities who often continue to have relationships with so-called abandoned places (Colwell-Clanhaphonh and Ferguson 2006). Other work shares this line of reasoning by pointing out that places that may be perceived as abandoned or ruined by certain groups of people (western academics are singled out) have the potential to act within social and political lives of others, especially Indigenous peoples and other minoritized communities (Gordillo 2014; Boschman and Bunn 2018; Olsen and Vinogradova 2019). These discussions call into question how useful or even ethical it is to call sites “abandoned” when they continue to operate within the lifeworlds of others (Colwell-Clanhaphonh and Ferguson 2006, 38; Boschman and Bunn 2018, 8-10).

Echoing these discussions, there has also been a rapidly growing body of literature that highlighted how even so-called abandoned places, landscapes, and things have the agency to act by and for themselves thus opening the discussion on the afterlives of things through the agential, material, and affective vibrancies outside of and beyond human purview (Edensor 2005a, b; Navaro-Yashin 2009; DeSilvey and Edensor 2012; Pétursdóttir 2014; Olsen and Pétursdóttir 2014a, 2016; Farstadvoll 2019a).

Mothballing sits at the heart of this discussion by bringing in detached human/corporate interest in the absence of direct engagement but where the responsibility to make a decision about a thing’s future is indefinitely postponed. Mothballing draws attention to the relational aspect of abandonment by pointing to the French etymological roots of negation “*a*” of *bandonment* (or *boundonment*) – a state of being in a set of bonds to humans and non-humans. Abandonment is thus a relegation of legal, moral, religious, and mercantile obligations (Boschman and Bunn 2018, 9-10). In principle, mothballing is the opposite of that relegation of relationships and obligations of ownership – it is the long-term act of bonding a place or thing to human interests, for keeping minimal control of the excessive and the superfluous with the hope that it would become useful once again, often through the help of chemical labour from toxicants. At the same time, mothballing can also be used to escape responsibility of making a decision over a thing’s future when it is too expensive, too valuable, or too emotive to get rid of. By mothballing one can then indefinitely postpone a decision such that postponement becomes the default permanent decision in itself – an extended period of waiting.

Unlike Alfredo González-Ruibal’s notion of “a time of agony” whose investigation can reveal “what happened after everything happened” (2019, 132), to study mothballing is to study what happened after everything happened *but could happen again*. There is the possibility of both reanimation and indefinite postponement, it is a time that is both after and in the midst of history. Mothballing thus challenges the binary of Michael Schiffer’s systemic and archaeological contexts whereby things remain between the two – they may be in a systemic context of maintenance and eventual use, or they may be in an archaeological context on their way to discard and ruin. To explore the provocations mothballing brings to archaeology further, I return to my fieldnotes and photos from the mothballed Sydvaranger mine and bring in another case study of a much older mothballed site, the Twin Falls hydroelectric plant in Labrador, Canada.

### **Mothballing at Sydvaranger**

After my first encounter with the mothballed Sydvaranger mine, I returned every year in every possible season which allowed me to notice the strange conditions of things as they waited to become useful again. People still worked for Sydvaranger but were often largely absent from site. This was compounded by the COVID-19 pandemic that encouraged most workers to work from home in 2020 and 2021 creating a sort of double mothballing. The facilities were mostly free for me to explore but the things there did not leave me with feelings of vitality, movement, or aesthetic pleasure (cf. Edensor 2005b; Pétursdóttir 2014; Farstadvoll 2019b). Rather, things remained static sometimes to the point of absurdity – like constantly encountering a CAT truck in the work yard that remained in the middle of a wheel change over four years (Figure 4).

Most gates and doors remained open and nobody stood guard though there were symbols of spatial control seen in signs announcing the industrial area or advising to “Keep the door closed due to the birds” (Figure 5). The only change that took place from visit to visit was the boarding up of the entranceway into the derelict old machine workshop, replacing the chain-link fence from the year previous (Figure 5).

The Sydvaranger structures displayed an asynchronous chronology resulting from its long and complicated history of start and stop operations. Several buildings, like the old machine workshop, old rock crusher, and the original transformer station, all predating 1940, were within an active stage of ruination whilst, ironically, being under protection of the local heritage plan (Berg et al. 2016, 292-294). It is in these buildings that things get close to having the unfamiliar, uncanny, and strange whilst having “their own life, evolving at [their] own pace” (Pétursdóttir 2014, 358-359), like for example the pile of pallets, sheet metal, and plastic pipes abandoned under the crumbling roof of the old machine shop (Figure 6).

Other buildings were cleaned and shut since the mine’s 1997 closure, with minimal maintenance left for another time and never reused. These included the welfare building (originally centre for payroll, showers, and medical facilities) and the secondary transformer station. The former was almost completely devoid of objects save for a heater, few desks, and some unmovable objects like basins and sinks. The latter contained empty power converters, old schematics, batteries, and a maintenance notebook with the last entry dated to November 1, 2001 – almost four years after Sydvaranger shut down (Figure 6).

The new garage, mechanic shop, rock crusher, and workers’ break house within the mine were mostly disused since 2015. These largely contained material left in place from when the operations stopped working the last time – calendars, trucks, machine tools, and computers mentioned previously. However, these also contained some unexpected traces by maintenance crews occupying themselves over the long waiting period in mothballing – private boats and snowmobiles showed active storage and private vehicle maintenance, a reindeer carcass occupied a freezer, and a makeshift workout room was created in the middle of the mechanic shop (Figure 6).

One building, Rørbua, was renovated and protected under national heritage law due to its historic association with the 1944 liberation of the area (Riksantikvaren 2015). Historical information displays were visible through the windows though at the time of the visits the building was locked. Located deep within the “closed” Sydvaranger property, it was unclear whom the heritage building and the associated historical information displays meant to serve.

This uneven palimpsest of buildings and things within them points to the contrasting redundancy of objects falling in and out of use through successive operating stages of the Sydvaranger mine and various modes of intervention of keeping things preserved for future use. Interventions are made to keep things from falling apart but this “eternal vigilance to ensure that they are not infected by disorderly and entropic tendencies” (Edensor 2005b, 313) is uneven in a facility that once employed up to a thousand workers and now only has 50 on staff. Buildings abandoned in 1997, like the welfare building, show entropy through peeling paint and creeping mould. Buildings abandoned in 2015 and critical for any restart of industrial activity, like the rock crusher and silo, displays peeling metal siding and a disintegrating conveyor belt (Figure 7). Limited care has not been enough to forestall the gradual ruination around the corners of the Sydvaranger facilities.

While a restart of the Sydvaranger mine will bring some of these buildings into use, their reactivation would require modernization of some and discard of other sections of the facility. While the cargo trucks in the garage stand ready to be activated again, there are other items that have lost their usefulness within the perpetual postponement: old drums, disconnected ladders, spare wires and tubes, antiquated machinery, and a box of Toyota keys – without associated Toyotas – labelled with a single question mark (Figure 8). From these examples, one sees that mothballing, as an act of anticipation, is both about a thing waiting to be used and a thing waiting to be discarded. However, since that future is undetermined, the thing exists in limbo without any pre-set destination – a waiting into the unknown.

## Mothballing at Twin Falls

Features of a mothballed industry identified through work at Sydvaranger – distant control through signage, locked doors, and property boundaries, temporal asynchronicity in maintenance and disuse, postponement in both use and discard, and the perpetual waiting without a set destination – pose the question of how mothballing can progress over a longer period in limbo. For this point of comparison, I would like to bring in the case of the Twin Falls hydroelectric plant in Labrador, Canada (Figure 9), a site where I have also conducted extensive research over the last several years related to my Canadian case studies (Venovcevs 2020b; Venovcevs and Williamson 2022).

Twin Falls was built in 1962 to provide power to the iron mining communities of Labrador City and Wabush in Western Labrador and at one time was home to a small industrial community of 200 workers and 21 families along with housing and institutional facilities needed to support them (The Newfoundland Journal of Commerce 1968; Baikie 2008, 2011; Budgell 2013; McLean 1990). They built and operated a robust assemblage of concrete and earthen hydroelectrical facilities that were built to withstand a hypothetical 100-year-flood in front of a 544 square kilometre reservoir (Water Power 1963, 10-11) (Figure 10).

Despite such investment, the power plant only functioned for 10 years. The construction of the much larger Churchill Falls hydroelectric power plant 50 kilometres away overshadowed the smaller facility. All the non-industrial buildings at Twin Falls were demolished or moved to neighbouring communities while hydroelectric facilities, in the words of a 1974 report, were “put in mothballs” until such a time the plant would be needed again to act either as an emergency power source or for two power plants to operate simultaneously (Royal Commission on Labrador 1974, 721; McLean 1990; Baikie 2008; Budgell 2013). When I visited the site almost 50 years later that expectation never actualized and to understand what transpired in the prolonged period of postponement I undertook two rounds of fieldwork that included fieldwalking and photography, like at Sydvaranger, and also incorporated comprehensive drone surveying, photogrammetric 3D modelling, and limited test pitting (Venovcevs 2020b; Venovcevs and Williamson 2022).

Despite being 50 km from the nearest settlement and 225 km from the nearest public municipality, access to Twin Falls was relatively easy due to the gravel road maintained by the Twin Falls current owner – Nalcor Energy. While the plant itself is inoperable, some of the original dikes are used to regulate the flow of water into the reservoir for Churchill Falls. One of the power poles by Twin Falls has found new life as training site for Nalcor Energy linemen.

The plant itself, including the spillway, water intake station, penstocks, and powerhouse, remained standing (Figure 11). Gates and chain-link fences barred entry to vehicles but could easily be circumvented on foot. The doors in some of the smaller structures on top of the intake station were open revealing a relatively clean interior. Only a few beer cans and some animal droppings revealed recent visitations. Otherwise, the buildings were a time capsule of 1960s hydroelectric technology including water elevation meters from a closed factory in Montreal and emergency diesel generators from West German manufacturers (Figure 12). In the prolonged waiting to become useful, material at Twin Falls has grown increasingly antiquated.

Buildings that were locked had signs warning of toxic dangers like PCBs, dioxins, and furans in both structures and in the water while test pitting recovered evidence of both lead and asbestos (Venovcevs and Williamson 2022, 271). Until 2004 bats occupied the powerhouse creating a toxic accumulation of bat guano that prompted a \$100,000 clean-up and bat proofing of the structure (CBC News 2004). In the decades of waiting, toxicity has become an emergent property at the site either through accumulations of toxic materials like bat guano or through redefinition of what toxicity is like in the case of heavy metals and petrochemical compounds.

Elsewhere on the site, the area has become dominated by alders (*Alnus incana incana* and *Alnus viridis fruticosa*), avid local rewilders (Figure 13). These have come to grow over areas where workcamp and town sites used to be, as well as the former flooded reservoir. Alders sharply delineate the few remaining footprints of buildings and the former roads that ran through the

community. Their height, approximately 2.2 meters, is a testament to the time that has passed since the power plant was mothballed.

Outside the still-standing facilities, my fieldwork also documented drink containers from during and after the period when the plant was operating. Recent shotgun shells, campfires, two makeshift cabins, and even a COVID-19 facemask point to continued visitation and reconceptualization of the area around Twin Falls. The contrast between a West German generator inside the facility and a Pepsi can featuring Star Wars Episode I (released in 1999) outside of it accentuates the chronological unevenness of things falling on either side of the fence by the mothballed facility.

However, over the years of waiting the expected useful future has become increasingly untenable. In fact, it has been made actively inactive – the power lines have been disconnected from the spillway, an earthen berm was built over the power canal, and the intake gates have been welded shut by metal bars from the bridge that once spanned the water intake. In a phone interview with the chair of the Twinco board, the board responsible for the administration of Twin Falls, I gathered that the plan is now to demolish the buildings due to their toxicity, their age, and the fact that the construction of the Churchill Falls reservoir funnels some water from Twin Falls meaning that, even if reactivated at great cost, it would never be able to reach its designed capacity. However, the costs for demolition are prohibitively high compared to the costs of deferral and mild upkeep. In my last visit to Twin Falls on July 19, 2021, a new “No trespassing” sign was added to the gates leading to the intake station.

Thus, in many ways mothballing at Twin Falls accentuates the tensions observed at Sydvaranger – the delay of use and discard, the aging of things over differential chronologies, and the continual limited presence and control over space is protracted over 50 years. After this time, it cannot be said that Twin Falls is abandoned and it cannot be said that Twin Falls is in use but rather that it now exists in indefinite limbo.

While the fates of Twin Falls and of Sydvaranger are deeply entangled within industrial market forces that prevent both their restart and their demolition, this postponement may not necessarily be unique just to the large and expensive things. As Jennie Morgan, Sharon Macdonald, and Harald Fredheim have shown in their study of domestic profusion (Morgan and Macdonald 2020; Morgan, Macdonald, and Fredheim 2020), domestic items tend to linger without a definite end goal. Sometimes they are perceived as economically or emotionally valuable to get rid of, sometimes they are perceived as having some future utility, sometimes they are just left and slowly forgotten about as they fade from functionality even in plain sight (Figure 14). The procrastination in decision making about a thing’s future postpones it into eternity. This dual nature of mothballed things – to both be “things for us” while also drifting “out-of-hand” (Pétursdóttir 2014, 339) – plays into two notions of Heidegger’s philosophy, *Bestand* and *Gelassenheit* and their associated calculative and meditative thinking, that may cast doubt on whether or not there is such a thing as abandonment at all.

### ***Bestand and Gelassenheit***

*Bestand* is another way to understand the idea behind mothballing. The word can be translated roughly as “standing by” and used by Heidegger to characterize how everything is commanded into place and ordered to stand by for future human utility (Heidegger 1977, 17). In *Bestand*, the thing’s use function for humans becomes its dominant characteristic while in fact there are many more characteristics and many more relationships that the thing can possess (Heidegger 1977, 16-17; see also Olsen 2010, 82). By locking things into *Bestand* everything is ordered “to be immediately at hand, indeed to stand there just so that it may be on call for further ordering” (Heidegger 1977, 17).

Thus, *Bestand* is an inherently anticipatory condition since in the ordering there is a constant deferment of use or “enframing” (Heidegger 1977, 19). Using an example of coal, Heidegger states that coal is not mined simply to be present somewhere but is rather transported, stockpiled, and made ready to be used in an anticipated future to give energy as a form of heat and deliver steam to

power a factory (1977, 15). It is in this way, following the STS scholar Max Liboiron, that “the future is reserved for settler goals, colonized in advance” where material and land set aside that “cannot support other relations, activities, or futures that might interfere with future use” (2021, 65). Within *Bestand*, things cannot be otherwise but rather every *thing* is a transitory stage toward becoming something else with some sort of future utility.

Key to *Bestand* is what Heidegger refers to as “calculative thinking” that “computes ever new, ever more promising and at the same time more economical possibilities... [racing] from one prospect to the next” (Heidegger 1966, 46) that ultimately turns everything and everyone into a resource (Introna 2009, 2014) – even when that resource is a deferred promised resource that lies somewhere in an unknown future. This calculative thinking is visible in the mothballing economics literature referenced earlier where future utility of a thing is calculated over the costs of keeping it going or permanently shutting it down. When a site is boarded up and closed yet regularly checked and maintained there is an ultimate deferment of its future utility for us. It is an attempt to colonize the future with anticipation that the future will be like the past; there is a distant agency of people and corporations to reduce access, to reduce possibilities for alternative becomings, to strip things of their own chronological succession; there is an attempt to retain control over buildings, things, and the land upon which they sit. A mothballed site is *Bestand* par excellence.

However, as seen at Twin Falls and as has started to emerge at the Sydvaranger mine, indefinite postponement starts to overcome the calculative thinking inherent in *Bestand*. Anticipation tests the limits of human agency, care, and commitment to keep things in their prescribed order. Edges start to fray and entropy creeps in. Over time things start to drift from being valued objects of production held in a prescribed order to something entirely different – they are released from “the drudgery of being useful” (Benjamin 1999, 209).

Heidegger calls this releasement *Gelassenheit* where things are left alone, freed from usefulness, and, in a way, get their individuality back (Heidegger 1966, 54-57). This falls in line with “meditative thinking” where things are left to themselves, and knowledge of things comes through a form of semi-conscious waiting. It is *Gelassenheit* that Þóra Pétursdóttir reframed as an “active but non-intrusive” method of acceptance of things (2012, 599-600) that strips the negative associations from abandonment and towards seeing things as they are (2014, 346). A methodological formulation of *Gelassenheit* is also echoed by Lucas Introna who argues that the cultivation of *Gelassenheit* is a way to cultivate freedom – to let the other be as the other through “an ethos of active and ongoing passivity” (Introna 2009, 37-38; 2014, 51).

My investigation of mothballing reveals that *Gelassenheit* neither needs to be active nor a choice nor a conscious turn to things (cf. Pétursdóttir 2014, 345) but rather that things constantly slip away from us – especially in conditions of uncertainty and indecisiveness. Calculative thinking to keep facilities in proper order, to put things away in storage for future use, to let machinery sit idle until such a time it is needed, constantly leads to a releasement of objects through indefinite postponement of that future. What starts as calculative thinking of utility and future expectation fades into meditative thinking as objects drift away from usefulness. When things are made to stand by, *Gelassenheit* becomes an inevitable and involuntary condition.

### **Conclusion – Against Abandonment, For Indefinite Postponement**

The last time I visited the property of the Sydvaranger mine the tires I encountered several years earlier were gone, replaced by a new chain-link fence and a sign that read “Operational area. No unauthorized access” (Figure 15). A post on the company’s website, dated July 2, 2021, stated the same thing citing that they were concerned for the safety of trespassers – namely children and youth (Sydvaranger Gruve AS 2021). This came on the heels of a new company, Tacora Resources, purchasing the mine in January 2021 spurring speculation by the local community that the mine might get going again.

On the other side of the new chain-link fence was a yard that I visited many times before. A single lane was ploughed through the deep snow but the heavy snow drift of mid-winter covered all

the entrances to the buildings revealing that the doors have not been opened for some time. Despite the new ownership, at the time of this writing the future of Sydvaranger mine remains undecided.

As I presented in this paper, it is worthwhile to consider the many ways things may be set in wait within periods of protracted mothballing. While I specifically drew upon my familiarity with large, corporate twentieth century industries set in relatively remote areas of relatively prosperous countries (see Khatchadourian 2022 for examples of mothballed operations that are situated in places that are neither remote nor wealthy), similar perspectives can be drawn from disused military hardware accumulating from a century of permanent war readiness (Reno 2019) or everyday household objects proliferating in domestic “cupboards of doom” (Morgan and Macdonald 2020). Attention to this indefinite postponement reveals more complex processes occurring from the things themselves as they slip away from human usefulness rather than some sort of a conscious human “detachment from place” (Lamoureux-St-Hilaire and Macrae 2020). Unlike situations where abandonment is an *a priori* reality (Edensor 2005a, b), a place beyond systemic context (Schiffer 1972), a time beyond history (González-Ruibal 2019, 132), and a ground for more-than-human afterlives (Pétursdóttir 2014; Farstadvoll 2019a), mothballing points to more unruly, less linear relationships within human-thing entanglements.

Mothballing is a period of uncertainty, indecisiveness, and concurrently feasible multiple futures. There is no *abandonment*, no relegation of legal bonds, but rather a protracted *Bestand* into the unknowable. It is a period where the future can be like the past – an attempt at territorialization and control of things that at times employs the help of other things like locks, screws, signs, or harmful toxicants. Mothballing can also be a period of protracted releasement, of involuntary *Gelassenheit*, where indefinite postponement eats away at unilinear human-thing relations creating an opportunity for things to free themselves and come to reveal themselves as the other while opening the door for non-human others to come and inhabit the sites. In such situations, meditative perspectives need not be an active methodological choice but rather an involuntary emergence from the most calculative of intentions.

As argued previously by Colwell-Clanhaphonh and Ferguson (2006, 37), a singular abandonment is unconstructive and, as demonstrated by Stein Farstadvoll (2019a, 83-85), abandonment is a misnomer that ignores ecological and material successions of a place. Mothballing builds on this work by showing that things do not have to be intentionally let go but rather made to stand, indefinitely postponed, and eventually forgotten about (or not). Given these works and others (Pétursdóttir 2014; Gordillo 2014; Boschman and Bunn 2018), I would argue that the old archaeological idea of “abandonment” ought to be finally retired – rejecting the postulation that with things there is ever truly a relegation of legal, mercantile, cultural, and ethical obligations whilst questioning the notion if there is ever a conscious linear break between a thing for us and a thing out of hand.

In the end, abandoning abandonment may prove productive as highlighted by the current case studies. Twin Falls, for example, has been considered too recent and too owned to be formally protected as a heritage site. Meanwhile, the ascription of heritage protection at Sydvaranger has been juxtaposed against industry whereby many buildings cannot be listed as heritage because of fears that it will hinder future mining activity (Arvola 2004, 56-57; Berg et al. 2016, 293). Hinging on abandonment to frame heritage in opposition to ownership and hypothetical restarts circumscribes the critical investigations that would be possible if studies of the past also included the active, the ongoing, and the indefinitely postponed things. As such, instead of abandonment, it would rather be worthwhile to discuss how things are protracted, how things are reactivated, how things stick around, how things are revisited, how things are put away, and how things are indefinitely postponed until, one day, we turn to them and realize that the things are not as they once were.

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## Figures



Figure 1: The location of Bjørnevatn and Kirkenes within Norway (map by Anatolijs Venovcevs).



Figure 2: Gate to the Sydvaranger mine, July 25, 2020 (photo by Anatolijs Venovcevs).



Figure 3: Purple dog ball on the property of the Sydvaranger mine (photo by Anatolijs Venovcevs).



Figure 4: CAT truck in the Sydvaranger mine yard on July 25, 2020, May 2, 2021, and February 20, 2022 (photos by Anatolijs Venovcevs).



Figure 5: Signs of control. Top left, main entrance to the Sydvaranger mine in 2019. Top right, “Keep the door closed due to the birds” in 2021. Bottom left, entrance to the old machine workshop in 2020. Bottom right, entrance to the old machine workshop in 2021 (photos by Anatolijs Venovcevs).



Figure 6: Stages on asynchronous progression. Top left, contents of the old machine shop. Top right, the last entries in an electrical maintenance log inside the secondary transformer station. Bottom left, corner office inside the new machine workshop with a 2015 calendar on the wall. Bottom right, gym inside the new machine workshop (photos by Anatolijs Venovcevs).



Figure 7: Degrading conveyor belt into the storage silo. Peeling metal siding of the rock crusher building is visible in the background (photo by Anatolijs Venovcevs).



Figure 8: Box of Toyota keys, without associated Toyotas (photo by Anatolijs Venovcevs).



Figure 9: Location of Twin Falls within Labrador, Canada (map by Anatolijs Venovcevs).



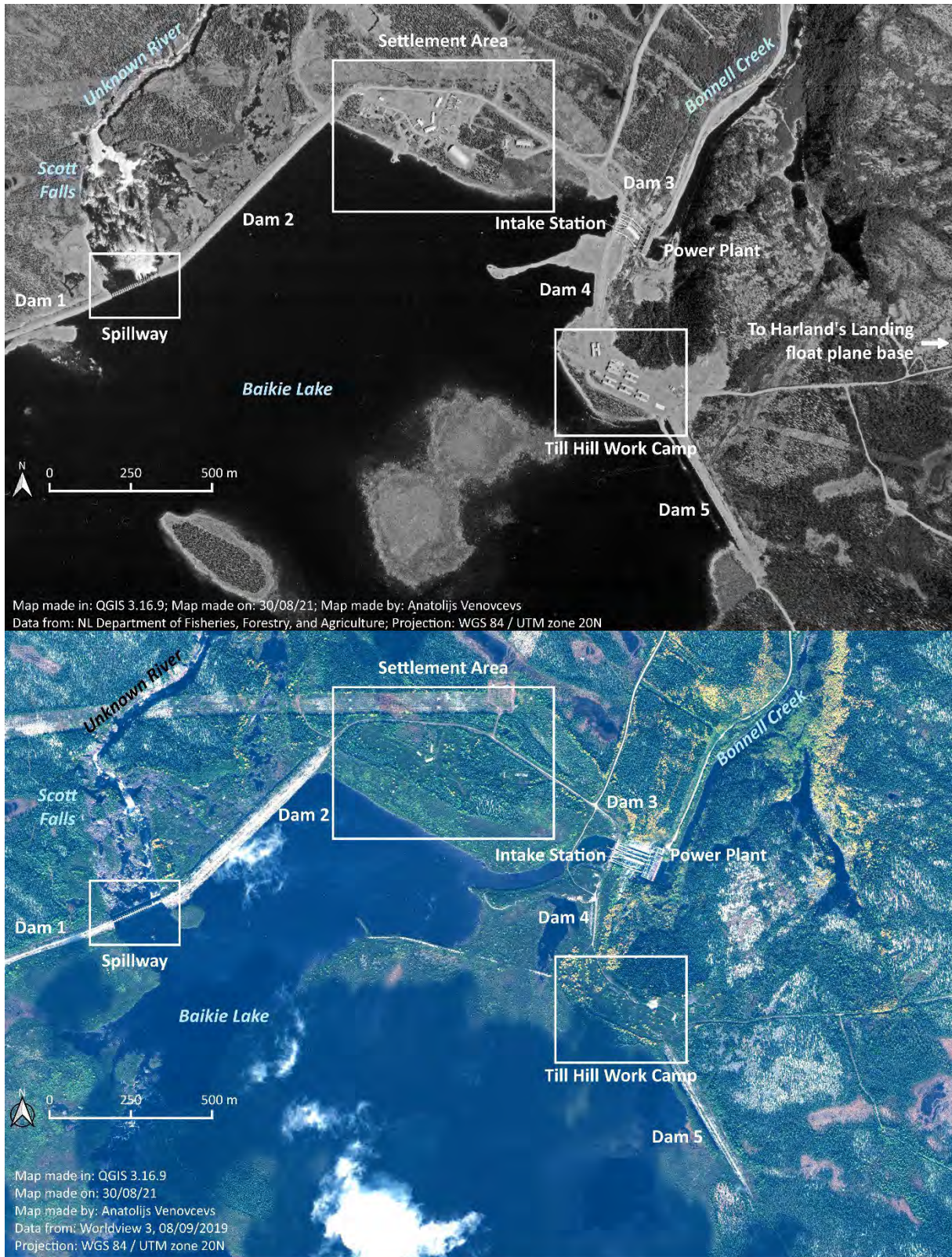


Figure 10: Twin Falls in 1972 and in 2021 (map by Anatolijs Venovcevs).



Figure 11: Drone mosaic of the intake station, penstocks, and powerhouse (image by James Williamson).



Figure 12: Machine labels inside the intake station buildings (photos by Anatolijs Venovcevs).

TAMPER			
HYDRO-ELECTRIC GENERATOR			
NO. 1	250	1100	50
NO. 2	250	1100	50
NO. 3	250	1100	50
NO. 4	250	1100	50
NO. 5	250	1100	50
NO. 6	250	1100	50
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NO. 96	250	1100	50
NO. 97	250	1100	50
NO. 98	250	1100	50
NO. 99	250	1100	50
NO. 100	250	1100	50

WESTINGHOUSE	
Life-Line Motor	
BYX-34	PATENTED 1951 / 1955
C.S.A. APPROVAL NO. 133	FRAME 254 U
HP 7 1/2	PHASE 3
VOLTS 550	CYCLES 60
AMPS 10.8	
RPM 1100	
SERIAL 1-85377 06	5"
FORM 66	SERVICE FACTOR 1.25 1.20 1.15
BRG. 340118	APPLICABLE TO 45°C AND 50°C
1/2 HOURS	MOTORS ONLY
50 °C RISE	1 HP AND LESS 2 HP ABOVE
CANADIAN WESTINGHOUSE CO. LIMITED HAMILTON CANADA	



Figure 13: The foundation of one of the buildings at the town site at Twin Falls surrounded by alders (photo by Anatolijs Venovcevs).



Figure 14: A boat in the forest – found near Kirkenes but a common sight across the forests of Norway (photo by Anatolijs Venovcevs).



Figure 15: Gate to the Sydvaranger mine, February 20, 2022 (photo by Anatolijs Venovcevs).



