

**Capillaries of Capital:
Space, Power, and Fossil Fuel Flows in the Colonial Present**

by

MICHAEL PHILLIP SIMPSON

BA, Joint Honours, McGill University, 2003

MA, University of Victoria, 2006

MURP, Portland State University, 2014

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submitted by Michael Simpson in partial fulfilment of the requirements for

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Examining Committee:

Dr. Philippe Le Billon

Co-supervisor

Dr. Trevor Barnes

Co-supervisor

Dr. James Tully

Supervisory Committee Member

Dr. Glen Coulthard

Supervisory Committee Member

Dr. Juanita Sundberg

University Examiner

Dr. David Tindall

University Examiner

Abstract

In the spring and summer of 2018, opposition to the expansion of the Trans Mountain

Pipeline emerged as a frontline in the global struggle against fossil fuel industries.

Opposition to this project had been simmering for years. In the face of planetary climate change, the Anthropocene, and the Sixth Great Extinction, pipeline developments across North America had become highly controversial matters, targeted by environmental activists, advocates of climate justice, and many Indigenous communities. This dissertation places conflicts over tar sands bitumen extraction and pipeline developments within a broad historical-geographical context of settler colonialization and capital accumulation in Canada. The chapters roughly follow the flow of crude bitumen along the pipeline, historically and geographically, from the first colonial encounters of this material oozing out of the banks of the Athabasca River, to present-day conflicts on the west coast of Canada. I begin by tracing the historical processes of settler colonial dispossession and the circuits of capitalist investment that remade tar sands bitumen into a 'natural' resource of Canada, and which have produced the landscapes of extraction that the tar sands are today. Moving along this supply chain from the sites of extraction to sites of circulation, I then consider the spatial-temporal logics with which crude oil flows across capitalist space. In the final chapter, I arrive at the site of Trans Mountain's tank farm facility where Indigenous people and settler activists attempted to restrict the movement of tar sands bitumen by placing their bodies on the line to prevent pipeline expansion. Ultimately, I argue that the current expansion project can be understood as one that is bound up in, and reflective of, shifting constellations of capital, nation, and political authority. At stake in this conflict is not just a

pipeline, but whether the material flows of the future are characterized by socio-ecological relations of reciprocity and mutualism, or relations of harm and violence.

Lay Summary

This dissertation focuses on the history, geography and economics of bitumen extraction from Alberta's tar sands, and the Trans Mountain Pipeline that transports this bitumen to the West Coast of Canada at the Burrard Inlet in Burnaby, BC. I begin by examining the history of encounters with bitumen in the Athabasca region beginning with the fur trade, and the subsequent development of extractive industries in the region. I move on to discuss the history of the Trans Mountain Pipeline, before finally examining the conflicts over the expansion of this infrastructure which emerged as a major political issue in Canada throughout the years 2017-2018.

Preface

This dissertation is original, independent work by the author, Michael Simpson. A version of Chapter 2 has been submitted for peer review to the journal *Political Geography*. A version of Chapter 4 has been accepted for publication in the journal *Environment and Planning E: Nature and Society*.

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You never dishonor the gift. A gift asks something of you. To take care of it. And something more.

- Robin Wall Kimmerer, *Braiding Sweetgrass*.

Deleuze and Guattari remarked that *Anti-Oedipus* was written by the two of them together, but '[s]ince each of us were several, there was already quite a crowd' (Deleuze and Guattari 1987: 3). Likewise, there was quite a crowd involved in this dissertation. Completing this project simply would not have been possible without many of the mentors who supported me along the way. I am humbled by all of the hands that hold me up.

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To Grandma.

And Tahlequah.

Chapter 1 - Introduction

Strategically speaking, if you are going to give the tar sands a heart attack, you have to hit the main arteries.

- Mark Worthing, Sierra Club BC

In the spring and summer of 2018, opposition to the expansion of the Trans Mountain Pipeline erupted into a sustained campaign of civil disobedience in Burnaby, British Columbia. The project being opposed would twin an existing pipeline, tripling the capacity of crude bitumen that can be piped from Alberta's tar sands to tidewater on Canada's West Coast. But, the stance taken in Burnaby was not just against this singular pipeline; in the face of compounding planetary calamities of climate change, the Anthropocene, and the Sixth Great Extinction, this opposition was likewise a frontline in a global struggle against the expansion of the fossil fuel economy, or what Andreas Malm refers to as 'Fossil Capital' (2016). Importantly, this resistance on Coast Salish lands and waters also appeared to be foregrounding the struggles of Indigenous peoples against ongoing processes of settler colonial dispossession and extraction.

This dissertation attempts to contextualize the conflicts over the Trans Mountain Pipeline within a broad history of the colonial capitalist present. By tracing this history from Indigenous forms of organization, to the fur trade, to the incursion of the settler colonial state, and the more recent transition from Fordist to neoliberal models of colonial capitalism, I demonstrate that the forms of political authority, economy, and territory which have shaped the present moment are not static, but have been configured and reconfigured quite radically over time. What also becomes apparent is that these changes in the dominant political-

economic logics are accompanied by concomitant changes in the orientation and movement of goods along supply chains. What I refer to as the capillaries of capital – the infrastructures that facilitate the movement of things – conform to different patterns in accordance with these different forms of political-economic organization. As political and economic power is periodically reconfigured, the patterns of the movement of things must likewise be realigned. I argue that the current expansion of this pipeline, and the recent rush to build other new pipeline mega-projects across North America, is reflective of, and bound up in, these shifting constellations of capital, nation, space, and territory. Re-orientating the flows of fossil capital is necessary at this moment in order for the dominant structures of settler colonial and capitalist power to be consolidated and reproduced; however, if this is the case, then it would likewise suggest that preventing the reorientation of these flows could open up possibilities for the germination of new material assemblies and flows that are grounded in more reciprocal relations of mutual aid. This dissertation is thus a study of both the contemporary logics of political-economic power that undergird this pipeline project, and the oppositional movements endeavouring not just to disrupt the material flows of colonial capitalism, but also to bring new socio-ecological worlds into being.

Recognition, Jurisdiction, Solidarity

Bobby Arbess is a veteran Vancouver Island activist who I first met at a tree sit action over a decade ago. While he continues to work to prevent the logging of old growth forests on the Island, today much of his activist energies are also committed to fighting the expansion of the Trans Mountain Pipeline, which transports diluted bitumen from the tar sands in Alberta to tidewater on the coast of British Columbia. Bobby was one of the lead

organizers of a four-day, 75-kilometer ‘Walk 4 the Salish Sea’ that took place in the spring of 2017 to raise awareness of the ecological perils involved in the pipeline expansion.

Furnishing banners, placards, and cut-outs of each of the Salish Sea’s beloved southern resident orcas, hundreds participated in the walk which departed from Lekwungen territory in Victoria BC, traversed the Salish Sea by ferry, and proceeded to march through downtown Vancouver before finally arriving at the pipeline terminus on the Burrard Inlet, territory of the Tsleil-Waututh, Squamish, and Musqueam nations.

I interviewed Bobby about the ‘Walk 4 the Salish Sea,’ and he shared a story with me about how, during the walk, he glanced down and noticed the shirt of someone walking alongside him briefly lift up over their belt revealing a concealed gun: ‘I thought, who the heck is that? Someone on our walk with a gun? This was supposed to be a non-violent walk [...] Our walk had a strong commitment to non-violence, which includes not carrying firearms.’ After discussing this with one of the other organizers, it became clear that the person with the gun was a plain-clothed police officer. As Bobby expressed to me, ‘by no stretch of the imagination could we be perceived as a threat to the security of anybody. We were walking primarily as a fundraiser to support Indigenous legal defence against the pipeline, and it was a very peaceful group of people.’

Bobby brought the matter to Eagle Eyes, the Coast Salish elder in charge of leading Indigenous protocol on the march. Eagle Eyes immediately stopped the walkers, gathered everyone alongside the road, and asked Bobby to identify the officer. Knowing that it is illegal to identify a plain-clothed officer, Bobby tactfully asked the group, ‘Would the officer with the gun in his belt please step forward?’ Shockingly, four people stepped forward. Eagle Eyes called the officers over to speak with him, and addressed them in his Coast Salish

language. What happened next was perhaps even more surprising – one of the Royal Canadian Mounted Police (RCMP) officers responded to Eagle Eyes in the Coast Salish language. As Bobby recounted, ‘She spoke with [Eagle Eyes] and was very amicable. It was maybe a sign of the times to see an elder and an officer exchanging words in a local Indigenous language.’ Eagle Eyes explained to the officer that, in accordance with the Coast Salish protocol that had been established on the walk, the RCMP was not welcomed to join the walkers. Displaying deference, the officers obliged. As Bobby described, ‘You could see they were respecting the protocol and they were respecting the authority of that elder, and they were certainly not wanting a confrontational situation.’ However, after some discussion back and forth, it was determined that the officers would continue to walk, but that they would do so across the street, apart from the larger group.

Curiously, though, the RCMP’s willingness to observe and obey Indigenous protocol applied only when the Coast Salish elder remained present. At times during the walk, Eagle Eyes required rest and would catch a ride further along the route where he would await the group. At these moments when Eagle Eyes was absent, the RCMP officers would integrate back into the larger group. Bobby likened this behaviour to that of a criminal who always ‘gets away with it when they can, and never stand on principle.’ While mingling with the walkers, the officers appeared to be easygoing and amicable, striking up friendly conversations and affirming how much they loved the walk while casually slipping in probing questions about the participants. As Bobby recounted, ‘We knew they were doing intel. Trying to gather information about organizers and leaders [...] [T]his movement was growing, and they wanted to understand the organizational M.O. [*modus operandi*]. Who are the organizers? Who is going to take action? [...] They were there essentially trying to figure

out how to control the game and defeat this movement.’ In fact, nearly a year later, Bobby was one among 15 activists personally named in an injunction filed by Kinder Morgan Canada – the company that owned the pipeline at the time – and he directly attributes this to the role that he played in organizing the non-violent march for the Salish Sea. As Bobby expressed to me, ‘the only interface I’ve had with law enforcement really was during the walk, so that’s interesting how that’s the connection between the cops on our walk and the injunction.’

I begin with this story because it captures several of the issues and dynamic that are central to this dissertation, such as how political authority and jurisdiction are distributed in the settler colonial and capitalist present, how this jurisdiction becomes spatially organized, and how Indigenous peoples and settler activists are working in common cause to prevent extraction and the development of pipeline infrastructures that facilitate the movement of fossil fuels across global space. Oil pipeline developments have become heated flashpoints of conflict across North America in recent years, as communities have been pushing back against, and directly confronting, the expansion and reproduction of ‘fossil capital,’ demanding new social, political, economic, and ecological futures. Many Indigenous people and nations have been on the frontlines of these struggles to disrupt the supply chains of global capitalist extraction by asserting claims to legal and political jurisdiction over their lands in opposition to extractive industries and the settler colonial state (Coulthard 2014; Pasternak and Dafnos 2017; Pasternak 2017). Indigenous peoples have a strong basis for these claims, especially in contexts where Indigenous title to lands and waters have never been ceded, and where Indigenous political and legal systems have never been extinguished (Borrows 2002, 2010; Christie 2013; Tully 2009a, 2009b; Simpson 2014). So long as the

rightful claims to legal, political, and territorial authority of Indigenous peoples persist, the settler colonial project remains incomplete, and the state's claims to sovereign authority over a bounded and contiguous territory remain illegitimate, or specious and precarious at the very least (Bruyneel 2007; Wolfe 2006).

Questions regarding who has legal authority, or what *authorizes* authority (Pasternak 2017), remain disputed and unresolved even *within* colonial law (see Asch 1984, 2014; Christie 2014). These unresolved claims to authority become expressed spatially in intriguing ways at moments when competing claims to jurisdiction between Indigenous peoples and the settler colonial state come into contact or overlap. The story of the Walk 4 the Salish Sea described above offers a compelling example of this. The incomplete authority of the settler colonial state became apparent when the state's police force appeared to acknowledge, and submit to, the jurisdiction of Indigenous protocol by walking separately from the rest of the group. Similarly, Indigenous law appeared to supersede Canadian law during protests against the Trans Mountain Pipeline on Burnaby Mountain in 2014, when police formed a barricade to enforce a provincial court injunction preventing demonstrators from entering an area where Kinder Morgan was conducting geological surveying activity, but allowed people to move freely back and forth across the police line in order to tend to a sacred fire that was started by a Squamish First Nation elder (Moreau 2014). In instances such as these, where Canadian law encounters Indigenous law or protocol on unceded territory, the supposed sovereign authority of the state appears to be differentially applied, and these differentiations are expressed in the spatial organization of Indigenous and non-Indigenous people.

There are reasons to be encouraged by the ways that Indigenous law, authority, and claims to territory are being put forward as powerful impediments to the expansion of

resource extraction and fossil fuel industries by Indigenous people and settlers alike. As

Naomi Klein (2015) writes:

[I]t is within this context that a great many Canadians are discovering that First Nations land rights and title – if robustly defended – represent the most powerful barrier to [the] destructive, extractivist mindset. And so, unprecedented coalitions are emerging to fight tar sands pipelines in British Columbia, fracking in New Brunswick, and clear-cut logging in Ontario. In these battles we are beginning to see the outlines of a new kind of relationship, based on nation-to-nation respect, not assimilation or merger' (xi-xii).

Klein (2014) describes how pipelines pose a 'common threat' to differently located people, and thereby have the potential to bring people together into new coalitions that she refers to as 'Blockadia.' Klein writes that, 'despite their huge differences, everyone along the [pipeline] route is up against a common threat and therefore are potential allies' (315).

Likewise, Zoltan Grossman (2017) celebrates the 'unlikely alliances' of settlers and Indigenous peoples in rural parts of the United States – which he has observed coming together in common cause, fighting projects such as the Keystone XL pipeline – in ways that may not have been thought possible a generation ago. However, even if non-native activists and environmentalists have found that backing Indigenous rights and title is an advantageous and expedient means by which to block extractive activities and protect the environment, this does not necessarily mean that the future worlds these frontline activists are striving to bring about are necessarily aligned with those of Indigenous communities. Indeed, in some cases, these imagined futurities appear incommensurably at odds (Tuck & Yang 2012).

People's differing understanding of the Canadian state is one place where visions of a post-extractivist socio-ecological future tend to diverge. For instance, turning back to the Walk 4 the Salish Sea, Bobby described to me how different people on the walk held different attitudes about the RCMP being in their midst. Some freely engaged with the officers, seeing them as having a neutral presence and as people who were just there to do their job w to 'serve and protect' the public. However, Eagle Eyes later shared with the

walkers stories of the violence that he and members of the Sechelt nation had experienced at the hands of the RCMP over the course of his lifetime. He explained to the non-Indigenous walkers why the very presence of the police is threatening and triggering for many First Nations people. As Bobby pointed out, ‘it is a settler privilege to be able to regard the police as safe and neutral people just doing their job, when in fact they are agents of oppression in this country.’ He continued, ‘we know that the RCMP have always been a paramilitary force that has facilitated colonialism, and colonialism has always been based on the unbridled flow and extraction of natural resources. In fact, that is the *raison d’être* of this country. So never think that the police are still not doing their job as originally mandated to them from the beginning of this colonial regime that we live in – can’t call it Canada.’

So, while it may be true that every group fighting the Trans Mountain Pipeline expansion claims to support and stand in solidarity with First Nations, the meaning of solidarity, and the ways that it is expressed or extended, can differ considerably. Some understand solidarity to mean support for Indigenous rights and self-determination within the existing legal and political apparatus of the Canadian state – a form of self-determination that Glen Coulthard (2014) argues serves to further entrench ‘colonialist, racist, patriarchal state power’ (3). These claims to Indigenous solidarity therefore diverge from the visions of decolonization held by many Indigenous people that involve the repatriation of lands and claims to the jurisdiction or sovereignty of Indigenous legal-political systems (Alfred 2004; Alfred & Corntassel 2005; Coulthard 2014; Simpson 2011; Pasternak 2017). Whereas environmental organizations in BC have been criticized in past campaigns for appealing to concepts of pristine nature that erases Indigenous people and silences their voices (Barnes and Hayter 1997; Braun 2002; Magnusson & Shaw 2003), today many environmental

organizations include Indigenous peoples in their campaigns, but in problematic ways by making shaky claims to Indigenous solidarity.

Rather than portraying the ways that native and non-native peoples are coming together to oppose pipelines as being smooth and seamless, or as exemplarily of what reconciliation can look like, my emphasis in this dissertation is on the incongruences that continue to persist within frontline spaces of resistance, and my focus is on how these differences are understood and negotiated within the context of on-the-ground efforts to build solidarity (Chapter 6). In doing so, my intention is not to disparage the efforts of frontline communities to build these coalitions and to work together to stop pipelines and thereby disrupt the material flows upon which the extractive industries of global capitalism rely. Rather, my hope is that efforts to build solidarity across difference can be strengthened by a firm understanding that resistance movements are structured by many of the same dynamics of racialized colonial capital that they seek to transform and dismantle. Within these movements, we are therefore each positioned differently, and hold different understandings, orientations, and commitments. Seeking to resolve this difference by harmonizing heterogeneous political imaginaries or commitments is not what makes a strong basis of solidarity, nor is such harmonization of difference even possible. This is not to say that we need to necessarily accept or respect each person's political commitments as being inherently 'worthy of respect' (Taylor 1994). However, it does mean that efforts to act collectively to transform the hetero-patriarchal and racialized colonial capitalist present always risk reproducing many of the same structural dynamics that we oppose (Bosworth 2018). We must therefore learn to carefully navigate the tensions, contradictions, and incongruences that will necessarily arise within solidarity movements themselves. We need not shy away from

these challenges. One of the themes of this dissertation (particularly in Chapter 6) is how these dynamics have been navigated by groups contesting the Trans Mountain Pipeline expansion.

Captured by Oil?: Trans Mountain Pipeline Background and Context

When I arrived at the protests against the Trans Mountain Pipeline expansion at the Burnaby Mountain Conservation Area in November 2014, I had not the faintest idea that this pipeline and the conflicts stemming from it would eventually become the topic of my dissertation. These protests erupted during the first semester of my doctoral program, and at the time I had envisioned writing on the political ecology of food systems and urban agriculture. But, there was undeniably something really special about this mobilization. For one, the energy behind it seemed unrelenting. At first, only a dozen or so people came out to protest the geological surveying activities contracted by Kinder Morgan in preparation for their pipeline expansion in Burnaby BC, a neighbouring municipality of Vancouver. But, the crowd that gathered grew with every passing day until it numbered in the thousands and the actions were suddenly making national news, attracting Canadian celebrities such as David Suzuki. Unlike many frontlines against resource extraction industries, this battle was being fought directly within a major metropolitan region with a seemingly endless pool of people who were willing to show up, take a stand, and risk arrest. The resolve and passion of these protests, and the sense that few people living alongside the Salish Sea or in the lower Fraser Valley favoured this development, suggested that this opposition was far more likely to build over the years than to dissipate, and that this was a struggle against Big Oil that people might actually be able to win. In addition, the fact that I myself have lived as a settler on Coast

Salish territory for most of my adult life and care deeply about these lands and waters, led me realize that this is where my attention and research efforts ought to be focused.

The central concern of this dissertation is not to provide is a full-fledged account of the ways that the Trans Mountain Pipeline expansion has been contested in electoral campaigns, legislative assemblies, and the courts over the past several years. However, I do not deny that state institutions are important sites in this conflict, and for this reason I would like to offer a brief overview of this political context. The first wave of protests against this project on Burnaby Mountain occurred in the fall of 2014 during the reign of Canadian Prime Minister Stephen Harper's Conservative Party government, which resolutely and unconditionally supported the development and growth of tar sands industries. Harper's government withdrew Canada from the Kyoto Protocol, placed gag orders on government scientists preventing them from publically discussing climate change-related research, and gutted environmental regulations and environmental review processes, while placing oil industry insiders on the board of the government's energy regulator (the National Energy Board), which was granted full authority to approve pipeline projects. Harper's government passed other legislation that fortified and expanded government surveillance powers, such as the Anti-Terrorism Act (Bill C-51), which many feared would be used to criminalize dissent by environmentalists and Indigenous people opposed to pipelines and other extractive industries. During the Harper era, government officials brandished pipeline opponents as foreign-funded extremists with a radical ideological agenda, and signalled that the Canadian government would do everything in its power to ensure that new pipelines from the tar sands would be built.¹

¹ For more details on the Harper era policies mentioned above, see: Preston 2013; Zalik 2015b; Peyton & Franks 2016.

Justin Trudeau brought an end to nearly a decade of Harper's rule after being elected to power in the fall of 2015, promising that 'sunny ways' lie ahead. Upon coming to power, Trudeau pronounced that Canada's relationship with First Nations was the 'most important,' and promised a 'renewed relationship' based on reconciliation between the Canadian state and Indigenous peoples, while pledging to implement the United Nations Declaration on the Rights of Indigenous Peoples which Canada had opposed during the Harper years. Trudeau also presented himself as an international climate leader, and within his first six months in office signed the Paris Agreement which committed world leaders to reducing emissions sufficiently to keep the average increase of global temperature below 2°C. During his election campaign, Trudeau promised to end government subsidies to the fossil fuel industry, and to 'restore robust oversight and thorough environmental assessments' for resource extraction projects, in order to 'ensure that decisions are based on science, facts, and evidence, and serve the public's interest' (Liberal Party of Canada 2015). Trudeau assured that these new measures would apply to all pipeline proposals that were already under review at that time in addition to any future developments, and he specifically claimed that a government under his leadership would not allow the Trans Mountain Pipeline expansion project to proceed unless it received approval from an overhauled National Energy Board review process (Linnitt 2015). Trudeau frequently repeated that 'while governments grant permits for resource development, only communities can grant permission,' a refrain that was written into the Liberal Party's campaign platform (Liberal Party of Canada 2015).

However, after winning the election, Trudeau announced in November 2016 that his government would approve both the Trans Mountain Pipeline expansion and the Enbridge Line 3 replacement project without requiring either to undergo the revamped approval

process that was promised during the election campaign.² At the same time, Trudeau also announced that the government would reject Enbridge's proposed Northern Gateway Pipeline – a project that the federal courts had already determined to have failed the legal requirements of consultation with First Nations (Tasker 2016). As Trudeau would later admit during a speech to energy industry leaders in Houston, TX, he believed that 'no country would find 173 billion barrels of oil in the ground and just leave them there,' suggesting that it was inevitable that tar sands bitumen be extracted (Maclean's 2017). Since approving the Trans Mountain project, the Liberal Prime Minister frequently boasts that he has succeeded at something that Harper did not during an entire decade in office – namely, building a new pipeline from the tar sands that will deliver this 'natural resource' to foreign markets. Trudeau avows that the development of this infrastructure is firmly in the national interest and should be pursued at all costs, as evidenced by his willingness to use government funds to purchase the pipeline for \$4.5 billion in August 2018 after the previous owner, Kinder Morgan Canada, seemed ready to walk away from the project. By purchasing the infrastructure, the Canadian government also signalled its willingness to front the additional construction costs of the expansion, estimated to be between \$6-12 billion (Morgan & Snyder 2018).

Provincial politics in Alberta have likewise followed a pattern of broad support for tar sands industries across political parties. In 2015, the Progressive Conservative government of Alberta lost an election after more than 40 years in power, and was succeeded by the left-of-centre New Democratic Party (NDP) government of Rachel Notley, who has since become a

² Rather than requiring the project to undergo a revised approval process, Trudeau's government appointed a three-person panel to review the NEB decision that was made under the Harper-era approval process (Hall 2016).

strong ally of Trudeau and one of the tar sand's most resolute proponents. The nearly unanimous support for pipelines and tar sands industries across these different federal and provincial political parties is especially striking given the strength of opposition to the Trans Mountain project among the broader population,³ and leads one to question whether the Canadian state has become an oil rentier state, or a 'petro-state,' that is 'captured' by industry interests, and which is so dependent on oil revenues that it has become more responsive to the industry than to that of the population at large (Karl 1997; Campbell 2012; Adkin 2016b; Carter & Zelik 2016). However, it is worth noting that substantial points of opposition remain within both the electoral system and some branches of government. Federally, the Green Party and some members of the NDP have taken a strong stance against the Trans Mountain expansion. In British Columbia, an NDP minority government led by John Horgan and backed by the provincial Green Party took office in 2017, claiming that they would do everything in their power to stop this pipeline from proceeding (Bakx & Johnson 2017).

While some First Nations band councils have backed the pipeline project, most have not. Forty-three First Nations signed "Mutual Benefit Agreements" (MBAs) with Trans Mountain, while 97 of the 140 First Nations whose lands and waters would be directly affected by the project have opted not to sign MBAs. Although the signing of MBAs is often pointed to as evidence of First Nations' support for the pipeline, signing these agreements

³ Although public opinion polls are not necessarily the best gauge of the strength of support or opposition to the pipeline, it is worth noting that polling shows that the Trans Mountain Pipeline expansion is highly contentious with substantial numbers both for and against. Polls conducted by the Angus Reid Institute in December 2014 showed that 56% of respondents supported protests against the pipeline, while about 51% stated support for the pipeline proposal (Angus Reid Institute 2014). The same polling firm showed that in February 2018, half of Canadians supported the position of the BC government which sought to delay construction, whereas half supported the Alberta government's efforts to avoid delays (Angus Reid Institute 2018a). Polling shows regional differences in opinion, with stronger support for delaying the project in BC (56%), and stronger support for avoiding delays in Alberta (82%). In June 2018, when asked if the federal government made the correct decision to purchase the pipeline, again respondents across the country were split directly down the middle, with higher levels of support in Alberta (Angus Reid Institute 2018b).

does not, in itself, signify an endorsement or consent for the project. Signing an MBA with the owners of the pipeline ensures that if the pipeline is eventually built, these nations will at least receive some compensation for the risk and damage to their homelands that they will be forced to incur. Twelve First Nations brought forward legal challenges against the project (Owen 2018), while other band councils opposed to the project did not have the financial resources required to wage the expensive legal battles.

The legal and political pushback from the BC government, municipalities, and First Nations, as well as the waves of civil disobedience actions, succeeded to create enough economic uncertainty around the project that Kinder Morgan, the Houston-based company that formerly owned the pipeline, began to waiver on whether or not it was willing to proceed with the project. In April 2018, the company suspended all project operations and threatened not to proceed at all if, by the end of following month, they could not secure greater clarity regarding how this project could advance (Kinder Morgan Canada Ltd 2018). Trudeau's government responded by announcing in May 2018 that it would directly intervene by purchasing the pipeline and all related infrastructure, including its terminals and pumping stations, from Kinder Morgan for \$4.5 billion, thereby absorbing the financial risk that private capital seemed no longer willing to wager.

Flashpoints: Some Background on Pipeline Conflicts across North America

Existing oil and gas pipelines form a densely tangled web that stretches many thousands of kilometers across Canada and the United States. For the most part, this immense network was quietly constructed over the past century largely absent of serious conflict, treated as projects of a technical and logistical nature rather than as a 'political concern'

(Barry 2013; Szeman 2017). Of course, there have been important exceptions to this, of which perhaps the most notable would be the Mackenzie Valley Pipeline proposal of the 1970s, which was strongly opposed by Dene, Inuit, and Métis peoples, who ultimately prevented the project from being built (Berger 1978; Bregah 1981; Sabin 1995; Coulthard 2014: 66-75).⁴ However, pipeline developments have recently become the expectation rather than the exception, emerging as highly controversial objects of heated conflict and contentious issues in federal and provincial/state elections, and sparking collective acts of civil disobedience on both sides of the border.

⁴ I should note here that international geopolitical competition over oil and gas pipelines is certainly not new. Competition between states, empires, and capitalist investors to secure access to oil and gas reserves, and to control the direction of its transportation, have existed since fossil fuels first became a commodity of global geopolitical importance. For instance, Makay (1984) discusses the efforts of Czarist Russia to secure transportation routes of oil from the Caspian Sea across the Caucasus to the Black Sea as far back as the late-19th century. During the Cold War, pipelines frequently became topics of geopolitical controversy, as the US and the Soviet Union competed to secure control world oil reserves for themselves and their allies (Jentleson 1986; Little 1990a; 1990b). Of course, geopolitical interest in pipelines did not end with the Cold War – arguably it has only intensified (Klare 2007). Today, the politics of pipelines in the Caspian region continues to be a matter of great concern and competition involving not only the United States, Russia, but also other regional powers such as Turkey, Iran, in addition to the powerful oil companies themselves (Ozturk 2002; Barry 2013). International bodies such as the World Bank have been accused of undermining the sovereignty of nations in the Global South in the post-Cold War period by trying ram through pipeline developments in the service of oil companies as part of loan guarantees and structural adjustment programs (Rosenblum 2000; Sawyer 2004: 109-112). However, the focus of this dissertation is on pipeline developments in a North American context, where these developments have remained relatively less contested as matters of geopolitical competition between states.

In the Canadian context, the Trans Canada pipeline – the longest pipeline in the world at the time it was built – became subject of ‘The Great Pipeline Debate’ in 1956, which ultimately brought down Louis Saint Laurent’s federal government after 22 years of Liberal Party rule (Kilbourn 1970). However, this debate primarily surrounded the Parliamentary procedures and government financing of the pipeline as opposed to questions over the desirability of oil and gas pipeline developments themselves. Arguably, debate in North America around whether or not pipelines developments were desirable began in the wake of the OPEC crisis during the 1970s when a number of pipeline proposals emerged to transport oil from the Beaufort Sea to southern markets in Canada and the US. The Mackenzie Valley Pipeline, the Alaska Pipeline, and the Alaska Highway Gas Pipeline, each faced push-back from Indigenous communities as well as environmentalists (Kilbourn 1970; Berry 1975; Berger 1978; Bregah 1981; Sabin 1995; Coulthard 2014). Aside from the important pushback against these pipelines in the 1970s however, pipeline disputes since then have been infrequent in North America up until the past decade, during which we have witnessed fierce opposition to many pipeline developments, including (but not limited to) Keystone XL, Dakota Access, Northern Gateway, Trans Mountain, Line 3, Line 9, and Energy East.

Actions to stop pipeline developments have taken place across North America. The Keystone XL pipeline project was first proposed in 2008 and opposition began emerging shortly thereafter, with broad coalitions of groups staging regular protest rallies and civil disobedience actions, including a massive march on Washington that drew tens of thousands people in February 2013 (Russell et al. 2014). In Québec, groups such as *Stop Oléoduc* and *Coule Pas Chez Nous!* connected communities along Enbridge's Line 9 and TransCanada's proposed Energy East pipeline, forming a highly decentralized grassroots network of opposition. In December 2015 and January 2016, unaffiliated groups of activists manually shutdown Enbridge's Line 9 pipeline on at least three separate occasions at different pumping stations located along its 800km route between Sarnia, ON and Montréal, QC. The following October, a group of five activists who become known as the "Valve Turners" simultaneously closed every tar sands pipeline that crosses the US/Canadian border, temporarily halting all tar sands crude from entering the US. Jessica Reznicek and Ruby Montoya from Des Moines, Iowa took even more radical actions, using oxy-acetylene torches to cut through the Dakota Access Pipeline in 2017 before proceeding to set fire to valve stations using gasoline-soaked rags.

Others have occupied space along the routes of proposed pipelines in order to prevent construction. Since 2009, members of the Wet'suwet'en nation's Unist'ot'en clan have maintained a camp on their territory where seven different pipeline developments have been proposed to cross their lands and waters. The Sacred Stone Camp was founded by members of the Standing Rock Sioux tribe in the spring of 2016 to prevent construction of the Dakota Access Pipeline. The camp swelled to over 10,000 people in the fall of that year, becoming the largest mobilization of Indigenous peoples in North America in the past century, as water

protectors from Indigenous nations across the world, along with many non-Indigenous supporters, journeyed to the camp in a show of solidarity. Other resistance camps are actively preparing for forthcoming conflicts, such as the Anishinaabe-led Camp Makwa in northern Minnesota, which is determined to prevent Enbridge Line 3 pipeline from crossing their territory. Indigenous-led resistance camps such as these serve not just as sites of opposition to pipeline projects, but also as powerful sites of Indigenous resurgence, where practices of Indigenous law, culture, and governance are asserted and strengthened in opposition to those of the settler colonial state and its seemingly insatiable appetite for capitalist extraction (Alfred & Corntassel 2005; L. Simpson 2011; Coulthard 2014).

Faced with this strong opposition, some of these pipelines have been successfully defeated. The Northern Gateway, a proposal by Enbridge to bring tar sands bitumen to coastal waters in BC, failed to secure approval from the Canadian federal government's cabinet. The Energy East pipeline, which was proposed to extend from the tar sands to port in New Brunswick, was abandoned by TransCanada after the company concluded that it was no longer an economical investment. Other projects, such as the Dakota Access Pipeline and the Enbridge Line 9 reversal have now been completed, whereas others still, such as Keystone XL and Enbridge Line 3 have been formally approved but are yet to be constructed. Needless to say, opposition to these uncompleted projects continues.

Regardless of the outcome of any one of these individual struggles, it is apparent that oil pipelines in North America are no longer the dull, apolitical, technocratic infrastructures that they once were – on the contrary, pipelines delineate the new frontlines of resistance to climate change, the fossil fuel economy, settler colonial dispossession, corporate greed, and neoliberal global capitalism. But, this relatively recent ignition of controversy and opposition

to these infrastructures provokes one to ask, why have pipelines emerged as such highly politicized sites of contestation now? Or, as Andrew Barry (2013) asks more broadly, how does an object come to be a ‘matter of political concern’ when it was not in the past? And, further, what does the emergence of these conflicts teach us about the contemporary political moment?

To some extent, contemporary opposition to pipelines can be explained as a culmination of decades of environmentalist consciousness-raising and organizing in opposition to the oil and gas industries. Catastrophes such as Exxon-Valdez in 1989, and BP’s Deepwater Horizon blowout in 2010, have imprinted strongly upon the North American environmentalist imaginary, making the costs of oil spills to both the environment and to people’s livelihoods abundantly apparent in North America. Likewise, awareness of the devastating impacts of emitting carbon into the atmosphere and altering global climate by combusting fossil fuels, which threaten to cause ‘severe, pervasive and irreversible impacts for people and ecosystems’ (IPCC 2014: 8), has resulted in strong demands for an immediate ‘just transition’ to clean energy sources such as wind and solar (Newell & Mulvaney 2013; Albo & Yap 2014). Indeed, in the midst of the ‘Anthropocene’ and the ‘Sixth Great Extinction,’ continued investment in fossil fuel infrastructure appears to be not only antiquated but also a perilous threat to life on the planet as we know it. Fierce political opposition to further investment in these infrastructures is therefore not only sensible, but seemingly crucial and urgent. Klein (2014) argues that it is precisely this urgency to take action which has inspired ‘a powerful mass movement’ that is taking a stand against both ‘a savagely unjust economic system and a destabilized climate system’ (8), and pipeline opponents are one expression of this wider movement.

In addition to the growth of environmental awareness over the past decades, it is argued that pipeline opposition can also be understood as part of a powerful moment of Indigenous resurgence, as many of the Indigenous peoples who have taken a strong stand against pipelines, at sites such as Standing Rock and Unist'ot'en Camp described above, do so by making claims to the longstanding relationships of their nations and ancestors to their lands and waters. Of course, Indigenous people have always resisted the imperial incursions of settler colonial dispossession, capitalist extraction, and the desecration of lands, waters, food systems (Hill 2010). Nevertheless, the capacities of many communities to effectively resist these onslaughts was diminished by experiences of epidemics, dispossession of land and waters, colonial-induced changes to Indigenous food systems, residential schools or boarding schools, and systemically enforced cultural genocide. The inter-generational effects of these experiences on Indigenous communities continue to impact Indigenous communities today. Still, Indigenous resistance to colonization and genocide has taken many shapes. For instance, Leanne Simpson (2011) describes how the Anishinaabe ancestors resisted by safeguarding the songs and stories of their people that hold within them the basis of Indigenous worldviews, law, and governance. Simpson likens this to saving seeds that can be passed down to future generations to nourish and grow, and from which a resurgent Indigenous culture can proliferate (15).

Arguably, this strategy of planting the seeds of resurgence has borne fruit in recent generations, as Indigenous communities across North America have taken strong stands against settler colonial states. Here, I would point to examples such as the actions of the American Indian Movement in the 1960s and 1970s (Smith & Warrior 1997; Hill 2010), resistance to the Canadian government's White Paper in the 1960s and 1970s (Manuel 2015),

the Dene Declaration of 1975 (Coulthard 2014: 69-71), the standoff between the Mohawk nation and the Canadian military at Kanehsatà:ke ('the Oka Crisis'), and the numerous other standoffs throughout the 1990 and 2000s at sites such as Ipperwash, Gustafsen Lake, Grassy Narrows, Caledonia, and Burnt Church (see, for instance, Edwards 2011; Steele 1997; Edwards and Gombu 2006; King 2013; Manuel 2015). Nick Blomley (1996) recorded 55 separate instances of Indigenous peoples using blockades to prevent extraction from their lands and waters during a 15-year period between 1980 and 1995 in British Columbia alone. In more recent years, the Idle No More movement has carried on this tradition of resistance to colonialism grounded in Indigenous cultural resurgence (Coulthard 2014: 159-65; Kino-nda-niimi Collective 2014). This brief account of resurgent Indigenous resistance to colonialism and capitalist extraction remains woefully incomplete, and certainly misses many of the actions taken by Indigenous peoples and nations to protect their lands and waters that have received less attention, as well as the innumerable everyday acts of Indigenous resistance and resurgence that remain unseen. But still, even this incomplete account attests to the continued power of Indigenous communities and nations to boldly affirm their unceded claims to territory and the legitimacy of their unextinguished legal and political systems, which is reflected in many of the pipeline opposition struggles today.

The ongoing history of Indigenous resistance to the incursions of colonial capitalism has also contributed to strengthening the legal standing and rights of Indigenous people within the Canadian courts and constitution. As a spokesperson from the Tsleil-Waututh nation reminded the National Energy Board during 2014 hearings on the expansion of the Trans Mountain Pipeline, their nation was not even consulted when the Trans Mountain Pipeline was first built through their territory in the 1950s, nor were they allowed access to

legal representation within the Canadian courts at the time (NEB 2014: 3019). Today, the Tsleil-Waututh band council is using every available means, including litigation and testimony in public hearings to prevent the pipeline's expansion. Arguably, this extension of Indigenous legal standing within settler colonial law, as well as the accompanying discourse of 'recognition,' results in the 'domestication' of Indigenous expressions of self-determination by containing it within the apparatus of the Canadian state (Coulthard 2014). But, nevertheless, some First Nations actively use this strengthened position within Canadian law in order to prevent pipeline developments and extractive activities, while also continuing to make strong stands to protect their lands and waters in accordance with their own laws, inspired by the resistance of their ancestors and the gains made by previous generations.

My purpose here is not to provide a comprehensive account of these histories of environmental movements or of Indigenous resistance to colonization in North America, as each of these would entail an enormous undertaking of their own. Instead, I have merely attempted to paint some broad brush strokes, undoubtedly incomplete and insufficient, strictly for the purpose of providing some context for the struggles to oppose pipelines and fossil fuel extraction today, and because the growth of environmentalist movements and Indigenous struggles for decolonization and self-determination are often pointed to as an explanation for why pipelines have become so contentious in recent years. However, my primary intention in this dissertation is to foreground a different aspect of pipeline conflicts that helps to explain why these conflicts are particularly salient in this moment. Specifically, I want to place emphasis on the reasons why so many of these new pipeline megaprojects are being built at this time, what these new infrastructures and the conflicts around them teach us

about the contemporary logics of political and economic governance, and what lies at stake in these infrastructures for the project of securing structures of colonial capitalist power.

This dissertation does not provide a thorough account of all the arguments for and against tar sands extraction or pipeline development that are put forward by the oil industry, federal and provincial political parties, Indigenous leaders from different nations and communities, or the many environmental groups engaged in these issues. My sense is that these arguments are already well documented (see for instance Levant 2010; Nikiforuk 2010; Klein 2014), so rather than revisiting this well-trodden ground, my intention here is to foreground the political economic conditions, and the historical-geographical processes, that structure these conflicts, and which produce and reproduce the spaces of pipeline contestation today. Specifically, I want to centre processes of historic and ongoing settler colonialism, capital accumulation, and neoliberalization, as among the conditions of possibility that have given rise and expression to these conflicts over the Trans Mountain Pipeline. Moreover, I want to call attention to the configurations of power, and the logics of governance between the state and capital, that act to reorganize space and territory and to direct the flows of materials along infrastructures such as pipelines, thereby structuring the field of these conflicts.

Constellations of Power: The State, Capital, Territory, Settler Colonialism

The primary focus of this dissertation is on how historical and ongoing processes of settler colonialism and capital accumulation have produced the political-ecologies of extraction in Alberta's tar sands, and how these processes structure contemporary conflicts over tar sands extraction and related pipeline infrastructures today. Given that the roles of

state, capital, and settler colonial power are central to my analysis, I would like to make a few brief theoretical remarks regarding how I conceptualize each, and the relationships between them. Rather than presenting each of these as discrete forms of power, I want to suggest that we think of the state, capital, and settler colonialism as mutually-constitutive elements within a broader field – or assemblage – of power relations.

Consider the state, for instance. Traditional liberal democratic theorists of pluralism portray the state as a kind of neutral playing field, wherein groups of people of varying political persuasions or affiliations compete to have their ideas and policies executed through the institutions of government (de Tocqueville 1835; Dahl 1961; Hirst 1989). In contrast, Marxist theorists tend to portray the state as a tool in the service of capital, or what Marx and Engels described as ‘a committee for managing the affairs of the whole bourgeoisie’ (Marx and Engels 2000). On the Marxist account, if members of the capitalist elite do not occupy the seats of government themselves (which they often do), they are nonetheless able to influence those in government, either directly through financial contributions or indirectly because government officials are dependent on taxes (and therefore dependent on a robust capitalist economy) in order to successfully implement their programs and policies. The party in power is therefore somewhat irrelevant in this account because those who control the economy ultimately dictate the program of the political elite, and thereby control the functionings of the state. However, what both of these liberal and Marxist accounts share is a somewhat deterministic cause and effect understanding of this relationship between political and economic power. On the one hand, we have a (liberal-democratic) account where the state is the primary actor, and where government officials determine economic structures and conditions through the enactment of state power. On the other hand, the opposite is true –

that is, the economy is primary and ultimately determines how state power is exercised (the Marxian account). I want to distance myself from both of these reductionist understandings of political economic power, and to think instead of both the state and the capitalist economy as entangled in far more fluid, amorphous and co-determined *constellations of power relations*.

The picture that emerges over the course of this dissertation is one wherein the logics and arrangements of political authority, economy, and territory shift, change, and take unique forms over time. I begin in Chapter 2 by considering the mercantilist economy of the fur trade in what is today known as Western Canada, which was governed through relationships between powerful trading companies and Indigenous peoples who maintained their own forms of legal and political authority. I then follow these strands of political authority, economy, and territory as they begin to unravel and reassemble in the late-19th century with the emergence of the Canadian state and an economic order premised on dispossession and resource extraction. Here I show how the consolidation of state authority over this territory allowed for these lands and waters to be reconstituted as ‘natural resources,’ and how this reconceptualization of the territory as resources concurrently served to justify and make possible the authority of the settler colonial state and economy. In other words, processes of state-making, the resource extraction economy, the delineation of the territory of Canada, and the dispossession of Indigenous peoples, were all co-constitutive and contemporaneously emergent processes. In the chapters that follow (Chapters 2 through 4), I describe how these configurations of power changed once again beginning in the mid-1990s as state regulation took new forms, as new economic orthodoxies emerged, as new markets were produced or

redefined, and as the directions in which commodities moved were reoriented – processes collectively associated with ‘neoliberalization.’

Just as the logics of the state and economy take different forms over time, so too do the logics of settler colonial power. As emphasized by scholars such as Patrick Wolfe (2006), Jim Glassman (2006), and Glen Coulthard (2014), the dispossession of Indigenous peoples is not an event that occurs at a singular moment in history when capitalist relations first take root in a region as a pre-condition for accumulation (Marx’s primitive accumulation). As with state power and capitalist relations, settler colonial forms of power must be continually reproduced. Through these processes of reproduction, the form that settler colonial power takes changes in concert with other shifting logics of economy and political authority.

Taiaiake Alfred and Jeff Corntassel (2005) refer to the ability of settler colonial structures of power to adapt to changing conditions in this way as its ‘shape-shifting’ character. Indeed, the operating logics of colonial power in North America have changed over time from explicit policies of dispossession and genocide (Wolfe 2006), to later efforts to assimilate Indigenous peoples within settler societies, and most recently to the politics of recognition which seeks to undermine Indigenous self-determination through the acknowledgement of difference (Coulthard 2014). While each of these logics of power are different, each remains nonetheless *colonial* insofar as they serve to undermine Indigenous self-determination and maintain dispossession.

Further still, as these constellations of power shift, morph, and reconfigure over time, so too does the organization of space. The production of socio-ecological space is not just an incidental outcome of the settler colonial capitalist order; rather, it is integral to the organizing logic and reproduction of these systems of governance (Smith 1984; Harvey

1996; Simpson and Bagelman 2018). These structures of power are predicated on reproducing spatial arrangements that determine how, and by whom, these socio-ecological environments are used and inhabited. The maintenance of dominant political-economic structures therefore requires the continual fashioning and re-fashioning of space. However, these structures of power do not produce space in a one-directional sense (Smith 1984); rather, forms of spatial organization are interwoven into this assemblage. There is no clear separation or hierarchy between the structures of power that 'produce' space and the spaces that they 'produce' – again they are mutually constitutive.

In sum, I want to think of the relationships of political authority, economy, settler colonial power, socio-ecological space, and territory as tightly interwoven, co-emergent, and constantly changing constellations. It would be difficult to untangle any one of these threads from the others and then identify it as a discrete entity with clean edges and clearly distinguishable boundaries, unhinged from relations with other conceptually independent objects. Moreover, because these assemblages of power must be continually produced and reproduced, they are not permanent and unchanging, but rather they remain in flux. As configurations of capital, nation, territory, and political authority rub up against their limits, they must be reorganized and reconfigured if they are to be sustained. All of this requires adjustments to the spatial orientations and infrastructures of these governing orders, and the production of new socio-ecological spaces.

However, if indeed these constellations of state, settler colonial, and capitalist power are constantly shifting and changing in relation to one another, this provokes one to ask what causes these changes to occur. Here I want to suggest that there is no singular explanation. To posit a coherent theory of change would be to suggest that there exists either a metalogic,

an internal rationale, or some other predetermined and discernable teleology operating quietly in the background. Here, I part company with the intellectual lineage that travels through Hegel, Marx, and Harvey. While I am indebted to each of these thinkers for the contributions they have made to thinking about the changing forms that governing structures take over time, I nevertheless push back against the idea that this change follows any sort of comprehensible logic. Even if any such logic were to exist (a premise which requires a leap of faith to accept in the first place), the suggestion that one could definitely decode its workings, determine how it operates, and then claim to understand how history unfolds, requires an epistemological confidence (might I say arrogance) that I simply cannot subscribe to. Here, I think of Kierkegaard, who critiques Hegel's teleological reading of history by suggesting that so long as we exist within history, we cannot position ourselves as an all-knowing observer who understands it objectively, as if we were looking at an external object (Kierkegaard 1973).

However, I will contend that the de-territorialization and re-territorialization of these constellations of power often occurs because colonial capitalism falls short in its efforts to exert hegemony over worldly (both human and more-than-human) relations (Gibson-Graham 1996; Scott 1998; Tully 2009a, 2009b). Cracks and crevices in the matrices of power will always emerge, creating openings for ways of acting otherwise and possibilities for existing relational alternatives to be practiced. The refusal of human and non-human worlds to entirely abide by colonial capital power is intransigent. As these structures of power fail, they fail forward, forced to improvise and take on new forms in desperate efforts to shore-up and sustain control (Peck 2010). On this account, change unfolds not in accordance with predictable and systematic patterns, but rather in a somewhat eradicate and unforeseen

manner as the contemporary structures of power respond and react to threats, thereby altering the entire relational assemblage as they do so. This dissertation argues that the current expansion of the Trans Mountain Pipeline and the recent rush to build other new pipeline megaprojects across North America is reflective of, and bound up in, these shifting constellations of capital, nation, space, and territory that are periodically required to reproduce and consolidate settler colonial and capitalist power.

This ongoing imperative of settler colonial capitalism to continuously restructure and rearrange these constellations of power and territory speaks as much to its systemic precarity and ongoing vulnerability as it does to the ability of these structures to adapt to changing circumstances given that these changes are always forced by pending crisis. As Tracey Osborne (2018) states, ‘projects and processes of neoliberalizing nature produce not only a host of fallouts associated with them, but also a set of politics that are challenging the very foundations of capitalism’ (38). Indeed, if these relations of power are not static but instead constantly in need of reconstitution, as I have suggested, then it follows that the political possibility of creating new, more reciprocal relations of mutual aid must also always exist. It is in these spaces of ‘overdetermination’ where the seeds of future relational assemblages germinate (Gibson-Graham 1996). Equally central to this dissertation is thus the politically creative ways in which people endeavour to contest and unravel the spatio-ecological order of the colonial and capitalist present by disrupting the flow of materials across global space from sites of production and consumption, aspiring to bring other relational worlds into being.

Of course, building relational alternatives to the colonial capitalist present is easier to theorize than it is to put into practice. Indeed, just as the hegemony of colonial capitalist

power can never be complete or totalizing, nor is there such a thing as a perfectly smooth or complete 'counter-hegemonic bloc.' As I show in Chapter 6, oppositional movements also fail forward in their own ways, and are never entirely disassembled from the same structures and constellations of power which they oppose. Consequently, I argue that rather than thinking of resistance to the colonial capitalist present as standing from an outside position of purity, we must think of this resistance as a messy and emergent nodes embedded within these webs of contemporary power relations. Indeed, precisely because resistance movements are entangled within these larger assemblages of colonial capitalist power, the ripples that they instigate have the potential of contributing to the reassembling of these relations in new and oftentimes entirely unexpected ways.

The Flows of Fossil Capital

I want to turn briefly now to a small but growing literature that can help us think about how different energy regimes structure both the forms that political-economic governance takes, as well as the possibilities that are presented for opposition and resistance. Andreas Malm (2013, 2016) argues that the transition from hydro-powered watermills to coal-generated steam power during the early Industrial Revolution in England can be explained not because 'water was scarce, less powerful, or more expensive than steam,' but rather because coal was a more geographically mobile energy source (2013: 31). As Malm (2013) writes, '[n]ailed to the landscape, the flow of water was not only immovable, but exposed to shifts in the weather. A river might freeze, overflow, ebb and peter out' (40). Although coal was more expensive as a source of energy per unit, its advantage was that it could be transported in ways that water could not, granting industrial capitalists far greater

flexibility regarding when and where production could occur. In Malm's words, '[i]nstead of going reverently to the mountaintops and rivers and establishing its businesses there, capital produced a matrix of nodes and arteries through *its own* circuits' (54). Specifically, coal-fired steam engines provided producers with the ability to move factories to cities, where higher concentrations of people were located, therefore offering greater 'access to exploitable labour' (33). Access to a larger labour pool meant cheaper costs of labour, which helped offset the higher costs of coal per raw unit of energy. Hence, Malm argues that 'capital turned to steam because it offered superior power over labour' (44).

Malm goes on to state that the mobility of coal enabled capitalists to break away from a 'concrete' spatial-temporal rhythm of production, by which he means that productive activities were no longer bound to the specific time and place that hydropower energy was available. Coal allowed capital to create 'abstract' spatial-temporal rhythms of production that could happen at any time and any place in accordance with the demands of capital alone, no longer limited by physical worldly constraints (54-55). However, in making this argument that coal allowed capital to break free of its bondage to the material dictates of time and place, Malm seems to ignore the basic material fact that the availability of coal for production remained entirely dependent on its transportation to these sites of production. This transportation, in turn, required infrastructures such as roads and rail. Consequently, steam power did not entirely unhinge capital from time and place by making production possible anywhere, but rather it allowed production to reconstitute, organizing in accordance with new patterns of spatial-temporal organization that mirrored the patterns and availability of supply chain infrastructures.

These narrow transportation corridors that were needed to move coal from sites of extraction to the cities or other sites of production, brought with them new limitations and vulnerabilities for capital. Timothy Mitchell (2011) has argued that while coal provided access to higher concentrations of labour by allowing factories to congregate thereby leading to the development of industrial cities, this came with new opportunities for labourers to organize and make stronger demands for democratic concessions and for more equal distributions of wealth and power. Workers were able to exploit the vulnerability of the energy source that factories relied on by disrupting rail lines in order to leverage these demands. As Mitchell (2011) writes, '[t]he widespread use of coal gave workers a new power [...] Democratic claims for a more egalitarian collective life were advanced through the flow and interruption of supplies in coal' (236).

Mitchell goes on to argue that the subsequent transition from coal to oil, which accelerated in the post-war era, enabled energy to become even more flexible, mobile, and unrestrained. Mitchell explains that, '[o]il was light enough to carry in pipelines and across oceans following more flexible networks' (237). This mobility allowed capitalist production to expand globally, providing new sources of even cheaper labour. Moreover, Mitchell argues that this new energy source was far more difficult to disrupt. Because the physical properties of oil allowed it to be transported underground in expansive subterranean infrastructures, the delivery of fuel was rendered invisible. Whereas rail workers involved in the movement of coal could effectively shut down the entire energy system of a nation by withdrawing their labour, this was not the case with pipelines because once they were up and running, there was effectively no labour to be withdrawn. Further still, the expansiveness of oil transportation networks also meant that a disruption in any one place could more easily be

circumnavigated by re-routing the fuel supply. The transition to an oil-based energy regime furthered the detachment of capitalist production from place by rendering fuel more mobile, while restricting the ability of workers to interrupt energy supplies, thereby enabling the capitalist class to contain worker demands more effectively.

Oil provided greater mobility not only to capital, but to the working classes as well. Matthew Huber (2013) emphasizes that cheap and abundant oil afforded North American workers unprecedented capacities for movement. Oil, Huber argues, transformed not only spaces of production but also spaces of social reproduction, offering new possibilities for homeownership outside of the cities, and providing access to new spaces of recreation for working and middle class families. These new affordances that oil provided shaped and moulded the very notion of freedom among the working class itself. As Huber writes, oil ‘powers forms of social life that allow individuals to imagine themselves as severed from society and public life [...] its combustion often accompanies deeply felt visions of freedom and individualism’ (xi). Consequently, workers themselves have become dependent upon the petro-capital economy, and have developed deep-seated affective attachments to its affordances that have proven difficult to concede even as we are now increasingly aware of the devastating socio-ecological costs of burning fossil fuels.

Taken together, the work of Malm, Mitchell, and Huber suggest that different energy regimes of global capitalism structure forms of political-economic governance as well as the possibilities for resistance to these political-economic systems. Indeed, the biophysical and material qualities of different energy sources such as hydro, coal, and oil impact how energy circulates, where and when production can occur, and the different moments and spaces in which these regimes become vulnerable. Forms of energy that have greater mobility and

fluidity provide greater opportunities for capital investment and production to expand into new spaces where new sources of labour and raw materials can be accessed, thereby increasing profitability. One might imagine that if a transition to renewable energy were to ever successfully occur within the framework of a capitalist economy, this new energy regime would have to be structured in such a way that would ensure capital the same degree of global mobility as currently provided by fossil fuels (Castree and Christophers 2015; McCarthy 2015).

Thinking through this lens, I now want to return to the major pipeline infrastructures being proposed in North America in recent years, and the conflicts that have taken shape around them. Part of what these pipeline developments promise is greater flexibility and fluidity of fossil fuel movements across global space as the global capitalist economy requires. As I argue in Chapter 3, increasing access to tar sands bitumen is not a matter of ‘peak oil,’ forcing producers to scrape the bottom of the world oil supply barrel as many believe. Rather, what these pipelines offer is increased mobility of oil across what Hannah Appel, Arthur Mason, and Michael Watts (2015) refer to as the ‘global oil assemblage,’ thereby providing more options for capital to respond to increasingly unpredictable market conditions. Here I follow the work of scholars of supply chains, logistics, and global production networks, and argue that the drive to build new pipeline infrastructure across North America is bound up in processes of spatial reorganization of the global capitalist economy and its efforts to reorient flows of materials in order to circumvent crises in accumulation (Bridge 2008; Labban 2008; Cowen 2014a; Coe & Young 2015).

Colonial capital has always relied upon securitized supply chain infrastructures in order to move products and resources across space from sites of extraction and production to

markets and spaces of consumption. The staples theorists of Canadian political economy have long stressed the importance of these transportation infrastructures, such as canals or railroads, in determining the direction of trade across the global capitalist economy, and hence the economic relationships between these spaces (Watkins 1991; Barnes and Hayter 1992; Drache 1995; Barnes 1996; Innis 1999; Hayter and Barnes 2001). In this dissertation, I emphasise the ways that patterns of distribution and the infrastructure that facilitate these flows themselves periodically change and reorient, often in response to moments of structural crisis and reorganization of the capitalist economy. During the mercantilist fur trade era, for instance, supply chains effectively followed lakes and rivers that branched out across the continent to forts and trading posts where furs were procured through trade with Indigenous peoples. Once furs were obtained, these same routes were followed back out to the ocean where the commodities would be taken overseas and sold back to the imperial centre at a profit (Chapter 2). Spatially, these supply chains therefore followed a dendritic – or what Deleuze and Guattari (1987) call ‘arborescent’ – pattern, which branches out from a central stem or trunk. In this case, the stem of the supply chain would be the transoceanic route from Britain to North America, and the branches would be all the waterways that branch out across the continent. Watersheds themselves follow a dendritic pattern, and this pattern was well-suited for an economic formation based on collecting goods and funnelling them back to a central location of colonial power.

The consolidation of the Canadian state in the late 19th century introduced new logics of political-economic governance and associated patterns of spatial organization, as discussed above. At its core, this state-building project involved securing legal and political control over a congruent territory delineated by national borders, achieved through the de-

legitimization and colonization of existing Indigenous legal and political systems. Securing control over this territory, and dispossessing Indigenous peoples from control of their lands, ensured direct access to resources from these territories that could then be used to procure wealth and build a national economy. But, the construction of a national economy required new supply chain infrastructures, such as the Canadian Pacific Railway, that could move commodities across this newly defined political territory. The emergence of the legal and political systems of the settler state therefore occurred in concert with the emergence of new spatial understandings of territory and political boundaries, the transition from a mercantile to a national economy, and the construction of new supply chain infrastructures that facilitated a reorientation of the movement of materials accordingly. Changes in the orientation of supply chains and the direction of the movement of things were bound up in this process of the reordering of authority, territory, and economy (Cowen 2014a).

The Trans Mountain Pipeline was initially built in the early 1950s to serve this national Canadian economy. The explicit intention of the project was to move oil to the west coast of Canada to provide energy to domestic markets and to fuel domestic industrial production in the service of the ‘national interest’ (Chapter 5). However, with the emergence of neoliberalism as a new economy orthodoxy beginning in the 1980s, these infrastructures needed to be modified and reoriented once again to move goods across space to reach global markets. Supply chains have since reorganized to reflect more of what Deleuze and Guattari (1987) describe as an assemblage, or rhizomatic pattern, where there are discernable nodes, but far more points of connection and no discernable centre. As Deleuze and Guattari argue, the weakness in the arborescent supply chain model is that, because it depends on a branching hierarchy, the entire system can be disrupted by cutting off supplies along the

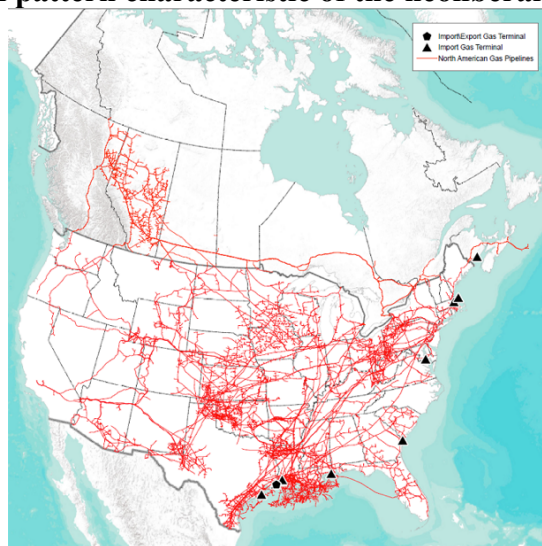
main stem. In contrast, because there is no singular centre in a rhizomatic assemblage, if any one line is disrupted, a new ‘line of flight’ can emerge around which the assemblage reorganizes (or ‘de-territorialize’ and ‘re-territorialize’). I will argue then that a primary reason why the Trans Mountain Pipeline expansion is required by the global capitalist economy today is to increase the connectivity of the ‘global oil assemblage’ (Appel et al. 2015). Increasing the connectivity and mobility of this fuel source allows capital greater options to avert disruption in supply and thereby more effectively evade crises of accumulation (Coe and Yeung 2015).

Figure 1.1: Fur trade supply chain routes demonstrating the dendritic patterns characteristic of the mercantile economic form

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Source: Cole Harris, *The reluctant land: Society, space, and environment in Canada before confederation*, UBC Press, p.380.

Figure 1.2: Existing oil and gas pipelines in North America today, illustrating a networked supply chain pattern characteristic of the neoliberal economic form



Source: National Energy Board and Energy Information Administration. Retrieved from: <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/fttrtdl/2017-07-18ntrlgsrgltns-eng.html?&wbdisable=true>

This is where it becomes apparent that there are broader stakes in flashpoint moments such as the conflicts over pipeline infrastructures. These struggles are not merely about any singular pipeline. If the impetus for building this infrastructure is rooted in the larger ongoing efforts of colonial capitalism to reproduce its power, then the disruption of these processes of spatial reorganization could prevent the further entrenchment of ‘fossil capital’ and thereby cause ripples throughout the governing relational assemblage. These ripples could potentially make room for alternate relational forms and socio-ecological futures to strengthen and proliferate - and indeed, some of these relational alternatives emerge and take shape through these efforts of opposition and resistance themselves.

At a rally I attended near the headwaters of the Fraser River in the Rocky Mountains in the summer 2018, members of the George family from the Tsleil-Waututh nation gathered with members of the Manuel family from the Secwepemc nation. Relations between these families date back many generations. Two generations ago, in the 1970s, George Manuel, who served as President of the National Indian Brotherhood and later as President of the BC Union of Indian Chiefs, was a friend and colleague of Dan George, a Tsleil-Waututh Chief who went on to have a successful acting career. But, this relationship goes back much further than this. For countless generations, the Secwepemc and Tsleil-Waututh peoples have been connected by the Fraser River. The Secwepemc live at the Fraser’s headwaters in the Rocky Mountains, while 1,375 kilometers downriver lies the Tsleil-Waututh territory, at the mouth of the river. As a Secwepemc elder explained on this day, their people always ensured that, as they drank and fed from the river the water remained as clean leaving their territory as it was found on their territory because they knew that the river was shared by others downstream. Likewise, the Tsleil-Waututh ancestors knew that the salmon they fished on the

coast were the same salmon that journey many hundreds of kilometers upstream, feeding the Secwepemc and many other nations along the way. Despite the great distances separating their territories, the Secwepemc and Tsleil-Waututh have therefore long been connected by a relationship of mutuality and care mediated by the salmon and the water of the Fraser River. Today, these two families are connected by their shared determination to protect these waters by preventing the Trans Mountain Pipeline expansion.

Thinking about the relationships between the George and Manuel families, and between the Tsleil-Waututh and Secwepemc nations, reminds me that the flows of materials across space can connect people in ways that are either reciprocal and mutually beneficial, or harmful and violent. If the waters of the Fraser River are contaminated, this impacts all those who live downstream of its flows. Likewise, if the Pacific salmon are harmed on the West Coast, this harm is felt by the human and more-than-human communities upstream all along the Fraser. In this sense, we can understand the struggle against the Trans Mountain Pipeline as a struggle for flows of reciprocity that support relations connected by care that benefit all.

Narrative Arc

There is a methodological difficulty that quickly becomes apparent when studying an object that is roughly 1,100 kilometers in length and over 65 years old. In each space through which this pipeline passes, different histories and different geographies are encountered, different concerns raised, and different constraints and possibilities presented. How, then, does one speak of a singular object when it is experienced as such a multiplicity? This is as much a problem of scale as it is a problem of methodology and epistemology. On the one hand, the Trans Mountain Pipeline can be explained as the product of world-historical

processes, structures, and logics of political-economic power. And, yet, the telling of such a grand narrative risks assimilating, obscuring, and concealing the multitude of stories, encounters and understanding of this object. As with any story, there will always remain more left untold than that which is told. It is the difficult responsibility of the author and narrator to determine which incomplete stories to foreground, and which perspectives and storylines must remain sidelined or silent, at least for the time being.

This task is made even more difficult by the fact that the Trans Mountain Pipeline is not a fixed or stable object that one can ever permanently capture, but rather it is an object that remains in flux. It has been three and a half years now since I first arrived at the protests at Burnaby Mountain. Much has occurred in that time, including changes in the leadership of the federal government in both Canada and the US, and changes in the provincial governments of Alberta and British Columbia. Just as I neared a complete first draft of this dissertation, the Canadian government made the surprising announcement that it would purchase the Trans Mountain Pipeline from Kinder Morgan Canada. No longer could this project be referred to as ‘the Kinder Morgan pipeline’ as I and others had habitually come to label it. It is likely that by the time people read this dissertation, circumstances will have changed once again, and my description of events will no longer resemble the object that I am trying to describe in quite the same way. The beginning and end of a story can only ever be relative and arbitrary.

Rather than endeavouring to provide a complete account of the Trans Mountain Pipeline then, I envision this dissertation as a series of partial stories, small slices that cut in at different places and at different moments in time. That being said, there is a general narrative arc of the text that roughly follows the flow of tar sands bitumen, historically and

geographically, from the first colonial encounters of this material oozing out of the banks of the Athabasca river, to present day conflicts at the gates of Trans Mountain tank farm facility on Burnaby Mountain. As I sat down to begin writing about the Trans Mountain Pipeline, I realized that I could not understand this pipeline without understanding the material that moves through it, and so I began researching the tar sands and bitumen at their site of extraction. This resulted in my first two chapters, neither of which were initially expected or intended, but which, taken together, offer an attempt to understand how processes of settler colonialism and capital accumulation have sculpted and produced the landscapes of the Athabasca region as they are encountered today.

I begin in Chapter 2, *'An Empire of Resources,'* by asking, how did tar sands bitumen come to be understood and conceptualized as a 'natural' resource targeted for extraction from its environment. Bitumen is a material that has been well known and used by Cree and Dene people of the Athabasca region long before Europeans ever stepped foot in the region. The reconceptualization and transformation of this substance into the commodity that is extracted and circulated along global supply chains today has entailed a drastic, and at times violent, reconfiguration of Indigenous spatio-ecological orders. I ask, what are the ontological and epistemological presumptions that one must commit to in order to conceive of a material in this way, and what are the legal, political, and economic structures that must be set in place to render the extraction of such a material possible? Drawing on journals, maps, reports, and other artifacts of knowledge produced by early traders, explorers, and government geologists, I find that conceptions of tar sands bitumen changed alongside transitions in the dominant mode of political economic organization from the mercantilist fur trade, which was governed by relations between Indigenous peoples and the Hudson's Bay Company (HBC), to a

capitalist mode of production governed by the settler colonial state of Canada.

Accompanying this transition, conceptions of tar sands bitumen changed from being an object of curiosity to an object of geological inquiry and economic worth. With the emergence of the settler colonial state, government geologists began surveying the Athabasca region, carefully measuring the physical and chemical properties of bitumen in order to determine its possible applications, potential economic value, and methods of extraction. The production of this geological knowledge and the re-constitution of bitumen as an extractable resource occurred in parallel with the dispossession of Cree, Dene, and Métis people of their lands, the reorganization of this space in accordance with the baselines and meridians of colonial cartography, and the institutionalization of private property allowing this land to be bought and sold. Each were necessary conditions of possibility for the extraction that occurs there today.

Once these structures of settler colonial power were established and consolidated, capital investment was enabled to enter into this region and proceeded to drastically alter its landscapes. In Chapter 3, *'Speculation, Extraction, Reclamation'*, I explore three different but inter-related circuits of capital investment, each of which have sculpted and refashioned this region, producing distinct socio-ecological formations, or 'natures.' Here we see how the circuits of colonial capital became inscribed in the environment, legible in landscapes. I argue for a move away from thinking about the production of 'neoliberal nature' (McCarthy & Prudham 2004; Castree 2008a, 2008b; Bakker 2009, 2010) as a singular arrangement, and I call instead for thinking about how neoliberalism employs multiple, contemporaneous and pluri-rhythmic circuits of nature-production. This is to say that neoliberal re-regulation creates multiple interdependent circuits of capital investment, each of which accumulate

profit while producing unique spaces that are both distinct and metabolically connected. In the case of the tar sands, I identify interlocking circuits of speculation, extraction, and reclamation. Spaces of extraction are the sites that are most commonly associated with the tar sands – landscapes denuded of vegetation and terraformed in order to produce a commodity, leaving toxic tailings ponds and mucky barren pits behind. However, spaces of speculation are also essential to the accumulation process. These are spaces from which oil companies can accrue value without actually needing to extract bitumen simply by buying, selling, or holding leases that confer the legal right to extract from these spaces in the future. I argue that these reserve holdings create a separate circuit of accumulation that operates as a type of speculative oil futures market. Finally, spaces of reclamation are the spaces where oil companies invest in ecological restoration activities, that constitute yet another entirely novel set of socio-ecological formations, and which operate as a type of ‘sustainability fix’ (While et al. 2004) for the industry, while also generating profit directly. I argue that while each of these nature-producing circuits of investment are unique, they are also entangled and co-dependent. What results is thus not a singular landscape of extraction, but rather an uneven and variegated landscapes, each of which serve the accumulation process in distinct ways and at different spatial and temporal scales.

Proceeding along this supply chain from the sites of extraction to sites of circulation, Chapter 4 and Chapter 5 focus on the movement of crude oil across global capitalist space. Chapter 4, *The Annihilation of Time by Space*, takes a brief detour away from the tar sands in order to think more generally about what the circulation of oil can teach us about the movement of commodities along global supply chains. Whereas most of the literature on capitalist circulation from Marx onwards emphasizes the imperative of speedy distribution, I

consider sites such as Cushing, OK, where the movement of commodities across global supply chains is intentionally slowed down for the purpose of capital accumulation. I argue that tank farms and other infrastructures of oil storage act as a spatial fix for producers during moments of overproduction. When there is a glut of oil on the market and prices are low, oil is held in place with the intention of garnering greater returns at a future moment in time. However, as tanks fill up, the crisis of overproduction re-emerges, and begins to express itself as a shortage of storage capacity. In the absence of tank space, speculators turn to supply chain infrastructures such as railcars and oil tankers as impromptu storage alternatives. Any empty space remaining in tanks becomes highly valued and traded as its own commodity. Ultimately, this chapter offers a corrective to recent literature on supply chains by demonstrating that capital accumulation relies not only on the speedy movement of commodities across global space, but rather capital employs pluri-rhythmic temporalities of circulation. Moreover, because oil storage is largely driven by futures markets, I argue that this offers us a way of thinking about how circuits of financial capital and speculation produce nature and space in distinct ways.

Chapter 5, *Capillaries of Capital*, discusses the history of the Trans Mountain Pipeline, exploring the political and economic logics behind its initial construction in the 1950s. Drawing on House of Commons debates, I show that when the pipeline was built initially, it was framed as a project that would serve the ‘national interest,’ just as the pipeline’s expansion is framed today. However, I go on to show that although the discourse of the ‘national interest’ has remained, the substance and meaning of this discourse has changed. Whereas the pipeline was originally said to be in the national interest because it would prioritize the supply of domestic markets over foreign markets, today the expansion is

said to be in the national interest because it does precisely the opposite – it provides direct and immediate access to foreign markets. Engaging with recent scholarship on supply chain logistics, I argue this changing understanding of the ‘national interest’ reflects the shifting constellations of capital, nation, and political authority associated with the transition from Fordist to neoliberal orthodoxies, and that the recent impetus of oil companies to build new pipeline megaprojects are bound up in these processes. However, I also proceed to argue that, at least in this case, the construction of neoliberal supply chains does not occur in an idealized spatio-political field. By electing to follow the same route as the existing pipeline infrastructure rather than sending crude bitumen to sites better suited for export, the pipeline owners will save on the cost of construction while limiting the volume and frequency with which their product can be shipped. Here I argue that the actually existing shape that neoliberal supply chains take is not necessarily strictly dictated by the imperatives of capital to move materials quickly and efficiently across space, but rather it is also informed by the existing supply chain infrastructures of previous economic formations, and the particular historical-geographical and socio-economic conditions that are encountered in sites along the way.

In Chapter 6, *Lines of Resistance*, I arrive at the terminus of the Trans Mountain Pipeline, the site of the Trans Mountain tank farm facility on Burnaby Mountain, BC, where settler activists and Indigenous people are attempting to restrict the movement of tar sands bitumen by placing their bodies on the line to prevent pipeline expansion. Drawing on interviews, participant observation at the frontlines of this struggle, as well as social media posts and transcripts from National Energy Board hearings, I consider the approaches of three different groups that are each using direct action and civil disobedience tactics to

prevent the Trans Mountain expansion. The primary focus of this chapter is on the approaches that these different settler-led groups take towards building relationships with the local First Nations communities that are also struggling to stop the pipeline's construction. Today, virtually every group opposed to Trans Mountain makes claims to standing in solidarity with the struggles of First Nations, but as I show in this chapter, what solidarity means and how far it extends differs from one group to the next. Here, I foreground how the different structural positions, understandings, political objectives, and strategies of pipeline opponents come into tension with those of Indigenous peoples at different moments during the struggle. The purpose of this chapter is not to critique the efforts of these groups, but rather to think carefully about, and draw attention to, some of the structural difficulties, tensions, and contradictions that must be navigated and negotiated as pipeline opponents endeavour to build solidarity around common cause when these relationships themselves are imbricated in many of the very same structures of colonial capitalism that these groups oppose.

Methodological Considerations

I am a white settler man who calls the lands of the Coast Salish people home. My family came to Canada from Britain, seeking economic opportunity after the Second World War and settled in Kingston, Ontario, which is on the traditional territories of Iroquois (Huron-Wendat) and Anishinaabe (Mississauga-Ojibway) peoples. I continued the westward movement of my grandparents, moving to Coast Salish territories in my early-20s to pursue a Master's degree at the University of Victoria, and I have not ventured far from the Salish Sea since. As someone who has lived on the west coast of British Columbia for most of the past

15 years, I care very deeply about protecting these lands and waters from the continued acts of environmental destruction that are being committed here in the interests of capital accumulation. And, at the same time, I am appalled and outraged by the profound injustices of dispossession and cultural genocide that have been and continue to be perpetrated by the state that claims to represent me as a Canadian citizen. The words of my friend Bobby, who I discussed in the opening of this chapter, continue to resonate with me. As he stated, ‘Canada is in a position where there is a choice [whether to continue] existing as a genocidal regime that is not a country of peace, that is not a country for the environment, that is not a country that should be respected as it has been for so long by the international community, but is a country that is fully prepared to grind Indigenous peoples down to the ground, assimilate them fully, co-opt their leaders, and to continue the process of exploiting the natural world to the point of climate chaos. So, there is that connection between the struggle to decolonize Canada [and to protect the environment].’ What is clear to me is that ecological violence, colonial dispossession, and capital accumulation are inter-related processes that cannot be adequately addressed in isolation from one another. This is one reason why I believe it is imperative for settler environmentalists and social justice activists to understand the ways that their own movements contribute to further entrench colonial logics, and learn to be equally as committed to decolonization and the self-determination of Indigenous peoples as they are committed to protecting ecological well-being and abundance. I agree with Osborne (2018), who remarks that considering the ‘longer history of land dispossession as it informs the character of and locus of struggle [...] demonstrates that the solution might lie beyond Keynesianism and market reform and involve a more radical de-commodification of land, labor and money’ (40).

I chose to write on this topic of pipelines and the tar sands in part because it is an issue of immediate importance to activists and people in the communities I now call home, but also because it is a site of clear confluence between these ongoing processes of colonial and capitalist power. As a researcher, I want to orient my research towards issues and causes that are relevant to existing struggles for social and environmental justice (Dixon 2014), and as an activist, I want my work to enable me to spend time on the frontlines of the struggles, and to contribute in some way to efforts to bring about a more just and equitable world. By focusing my research on the place I live, my research benefited from established connections and existing relationships of trust with many of the people involved in this struggle. But, as a settler scholar, I remain very much entangled and bound up in many of the same tensions and contradictions of the colonial capitalist present that I attempt to identify and critique in the pages that follow. As with the relationships of solidarity that I attempt to describe in Chapter 6, there is no clear way of stepping out of these tensions, nor is there a clear way of definitely resolving them. The methodological question thus becomes how to generate imperfect knowledge from within this compromised position that does the least harm and offers the most benefit to communities of resistance.

Using participant observation research methods to study frontline actions that are often spontaneous and ephemeral presents its own methodological challenges – namely that these actions do not always occur at times that are predictable or in accordance with a research agenda and timeline. As mentioned earlier, my first encounter with the opposition to the Trans Mountain Pipeline was during protests of surveying work being conducted in the Burnaby Mountain Conservation Area in November 2014, long before the proposed project had even been approved by the Canadian government. After Kinder Morgan's surveyors

packed up and left later that year, widespread use of direct action and civil disobedience tactics against the project didn't pick up again until late-2017 and early-2018. Of course, even when political actions dissipate, the people involved in them remain, so in the years between the fall of 2014 when I was just beginning my PhD studies, and the spring of 2018 as I was wrapping up, I continued to build relationships with people involved in this movement. I attended every protest march and rally that I could, as well as many public talks and events that were organized, and some organizing meetings as well. In the summer of 2015 and again in the summer of 2016, I participated in a five-day paddle through the Gulf Islands in the Salish Sea, which was organized to raise awareness of the dangers of pipelines to coastal communities, during which I built and strengthened connections and relationships with local activists and organizers.

During this period, I also spent time in frontline communities that were fighting other proposed pipeline developments elsewhere in North America. In the summer of 2017, I visited the Unist'ot'en camp in Wet'suwet'en territory, where I spent five days participating in their "action camp" convergence (see Rowe and Simpson 2017). In the fall of that same year, I visited Camp Mukwa in Anishinaabe territory of northern Minnesota. Even though these other spaces of pipeline resistance were not directly related to the Trans Mountain opposition, certainly these struggles and the people involved in them are connected, and there was much to learn from these parallel struggles against the tar sands infrastructure that threaten the lands, waters, and people in other places. I typically entered these spaces primarily as a supporter rather than as a researcher, and tried to find ways to support by turning up with supplies, washing dishes, cooking food, or helping out with projects rather than prioritizing interviews, information gathering, or any formal documentation. But

nevertheless, I learned much from informal conversations and through observing and participating in these spaces of resistance and Indigenous resurgence, and I kept a journal of these experiences. Unavoidably, spending time in these frontline communities shaped the ways that I think of the Trans Mountain Pipeline opposition in important ways.

Most of the chapters in this dissertation do not focus on the frontlines of resistance, but grapple instead with the historical-geographical and political-economic conditions that have led to and continue to structure these conflicts. In so doing, I rely on a variety of different types of research methods and sources. Chapter 2 draws on historical archival texts including journals of fur traders and explorers, historical maps, Government of Canada reports, and House of Commons debates. Chapter 3 relies on government and industry economic data, oil industry journals, and corporate promotional materials. Chapter 4 primarily draws from industry data and media reports. I also conducted one interview with an expert who works in the oil storage industry. In Chapter 5 I refer to House of Commons debates, journals, economic data, evidence presented to the National Energy Board, and reports compiled by government, industry, First Nations, and non-profit environmental groups. The bulk of this research that was used in these chapters was completed in the fall and winter of 2017/18. During this time, I also read through much of the transcripts from public hearings related to the Trans Mountain Pipeline expansion, and any government documents related to the project that I could find. This research on the history and political economy of the tar sands and pipelines kept me busy during a snowy winter in Minneapolis, as I awaited a resurgence of resistance activity on the West Coast come spring.

The anticipated civil disobedience against Trans Mountain resurfaced just as it was time to begin writing Chapter 6. I was fortunate to be on hand in March of 2018 at a crucial

moment in the campaign, when a mass-mobilization of over 10,000 supporters walked alongside First Nations leaders and observed the building of the *Kwekwecnewtxw* (Watch House) discussed in Chapter 6. During this time, I also helped organizers who were busy establishing a new activist support camp, and orchestrating a new wave of civil disobedience and direct action at the gates of the Trans Mountain tank farm. By showing up and finding ways to help at the camp during those first days, I found that I was able to establish trust quickly, and made new friendships along the way. In general, I have found that being useful on the ground is the best way to reciprocate for all of the knowledge shared by communities of struggle. Being available to provide frontline activists help with everyday needs, such as offering rides when needed, can be an effective way of supporting their work while building relations along the way.

Throughout the summer of 2018, I continued to be available to show support. I had an opportunity to paddle with Tsleil-Waututh leaders along the fenced off Westridge Marine terminal in the Burrard Inlet, where tar sands bitumen is loaded onto oil tankers and shipped overseas. In August of 2018, I joined a caravan of activists who departed Victoria and Vancouver and journeyed to Secwepemc territory in the Rocky Mountains where Kanahus Manuel, daughter of the late Art Manuel, and the Tiny House Warriors had placed small mobile structures along the Trans Mountain Pipeline route in order to demonstrate use and occupancy of those lands. I also travelled to the Athabasca region where I camped for four days at an Indigenous-led healing gathering, and learned from elders and members of the local Cree and Dene Nations. Following this gathering, I stayed in the Fort McMurray region for several days and explored the tar sands region, chatted with workers at the pub, and was granted access to extraction and reclamation sites at Syncrude.

Over the course of this research, I have learned from countless informal conversations with people involved, in one way or another, with these conflicts over the tar sands and pipelines, but I also conducted a small number of formal interviews. Typically, my approach is to try to build relationships of trust with frontline activists and organizers before requesting interviews, and in many cases I opted not to request formal interviews at all where I sensed that doing so was not appropriate. In the case of the groups involved in these struggles, most had specifically designated spokespeople to whom I was directed. Between March and September 2018, I interviewed spokespeople from many of the groups actively involved in the Trans Mountain project opposition: Camp Cloud, Stand, Greenpeace, Sierra Club BC, The Justin Trudeau Brigade, Dogwood Initiative, Tiny House Warriors, and the Walk 4 the Salish Sea.

I have also found social media to be an indispensable research tool. I had resisted joining Facebook for many years before embarking on this project at which point I came to understand how vital it was for conducting social movement research. Rather than using it as a social networking service, I restricted my use to following activists and organizations working both in support of, and in opposition to, the Trans Mountain Pipeline. Many of the groups that I have built relationships with livestreamed their actions on Facebook, including their interactions and confrontations with the police, which meant that I could continue to watch some of what was happening on the frontlines even from a distance during the time when I was based in Minneapolis. I drew from some of this online content as additional data and evidence while writing Chapter 6.

I knew that the story that I am telling would not be complete or sufficient without a chapter discussing the inspirational efforts of people working on the frontlines to prevent the

Trans Mountain Pipeline extension, and yet I remained reluctant to write this chapter because I felt overwhelmed by the responsibility of representing the perspectives of these communities. Specifically, as a white settler researcher studying frontline actions and opposition, much of which was led by Indigenous communities, I remained aware of the possibility, perhaps even the likelihood, that I would unintentionally do harm to the communities I was writing about by portraying their struggles inaccurately or inappropriately, either because I would fail to adequately understand, or because the scholarly demands to engage with certain academic conversations, concepts, or conventions can easily result in the miscontextualization and mischaracterization of people's voices. Additionally, I remained concerned that I would not be able to fully anticipate how the information presented in this dissertation might circulate as an object of knowledge in the world on its own in ways that I cannot control and which could result in unintended harm.⁵ I think that these fears of misrepresentation led me to focus far more on the history and political economy of this project than I had ever anticipated. Working with archival sources,

⁵ Here, I am mindful of the cautioning offered by scholars of Indigenous and 'decolonizing' research methods. Linda Tuhiwai Smith (2012) opens the book *Decolonizing Methodologies* with the provocative claim that research is "probably one of the dirtiest words in the indigenous world's vocabulary" (30), due not only the long history of researchers disrespecting Indigenous protocols, but also because of the ways that research has been used to inform harmful government policies (see also, Denzin et al. 2008; Deloria 1969). Moreover, Tuhiwai Smith emphasizes how research tends to benefit the researcher regardless of its impacts on native communities, writing that it makes "careers for people who already had jobs" (33). Renee Paulani Louis (2007) suggests that it is better not to conduct research about Indigenous communities if the outcomes are not beneficial to the communities. Louis writes that 'Indigenous people need to protect themselves from further misrepresentation, misinterpretation, fragmentation, mystification, commodification, and simplification of Indigenous knowledges' (132) and that 'If research does not benefit the community by extending the quality of life for those in the community, it should not be done' (131). Of course, it is difficult to know in advance the impacts that research might have on communities. Elizabeth Carlson (2016), notes that this potential for harm exists even among well-intentioned researchers, noting the potential for a "clash between the 'good intentions' of conscientious settler scholars and the actual impacts of their academic activities and outputs" (1). Sarah de Leeuw & Sarah Hunt (2018), call attention to the structural limitations of academia and specifically the field of geography, noting that 'despite good intentions, efforts at decolonizing geography are inherently limited because colonization continues to structure the field of geography and the academy more broadly' (1). Shaw et al. (2006) emphasize the harm that can be done with research is employed as a tool in ways that were not intended by the researcher, noting that 'meaning easily escapes the intention, and what may appear innocuous can become damaging in the hand of others' (273).

economic data, and oil industry publications somehow seemed like a far safer place to hang out than with actual people to whom I would be accountable. I had to think for a long time about how to approach Chapter 6 – the chapter where I address the work of frontline activist groups – before I worked up the courage and confidence to actually write it.

In the end, I chose to navigate these fears of misrepresentation by focusing my gaze not directly upon Indigenous communities themselves, or upon any particular research subject for that matter, but rather on the *relationships* between settler activists and settler-led environmental groups, and the Indigenous peoples with whom these groups make claims to solidarity. Still, by making this my focus, I want to acknowledge the danger of re-centring the experience of the white settler subject even while I critique the exclusions and violence of settler colonial power.⁶ This tension of not wanting to speak on behalf of Indigenous peoples (Spivak 1988; Ashcroft et al. 2003), while also not wanting to re-centre the white settler experience and thereby marginalize Indigenous voices even as I advance a critique of settler colonialism, is a tricky one to navigate. While I don't believe that I can definitively resolve this difficulty, I do remain reflexively aware of the dilemma, and my hope is that I have navigated these tensions responsibly and with adequate care. Ultimately, it is also my hope that, by contributing to the deconstruction and dismantling of the logics, discourse, and

⁶ Indigenous studies scholars have expressed concerns that the recent emergence of the subfield of 'settler colonial studies' fails to engage with the experiences of Indigenous peoples or people of colour even while critiquing the racialized structures of settler colonial power. For instance, Macoun & Strakosch (2013) warn that settler colonial studies' structuralist analysis 'can be mobilized by settler scholars in ways that delegitimize Indigenous resistance and reinforce violent colonial relationships' (426). Similarly, Snelgrove et al. (2014) note that 'settler colonial studies can displace, overshadow, or even mask over Indigenous studies' (9). Kehaulani Kauanui (2016) argues that 'any meaningful engagement with theories of settler colonialism [...] necessarily needs to tend to the question of indigeneity' and that 'settler colonial Studies does not, should not, and cannot replace Indigenous Studies'. Joanne Barker (2017) writes that 'a certain analytic within settler colonial studies has, however unwittingly, foreclosed and even chilled understandings of Black and Indigenous histories and identities.'

rationale of settler colonial power, I can thereby contribute to creating room for Indigenous scholars and Indigenous people who already give voice to other ways of understanding, being, and relating in the world beyond the settler colonial and capitalist present. In sum, rather than attempting to speak on behalf of Indigenous peoples in these struggles against pipelines, or attempting to explain Indigenous perspectives or worldviews, as a white settler scholar I see my role as one of critiquing the structures of settler colonial power while amplifying the existing work and perspectives of Indigenous scholars who already envision and articulate what a decolonized future might look like.

Accordingly, there are also questions that I have chosen not to ask in the pages that follow, and stories that have been shared with me over the course of this research which I will not reproduce in my dissertation (or in other published research) because it is simply not appropriate for me to do so. Here, I take guidance from Audra Simpson's (2014) writing on 'ethnographic refusal.' Simpson reminds us how ethnographic accounts of Indigenous stories, experiences, and knowledge shared by settler academics can do material harm to Indigenous communities and nations when these accounts are either misunderstood and misrepresented by the scholar, or appropriated by the settler colonial state and used against the interests of these very same communities that are their object of inquiry. This leads Simpson to insist upon the right of Indigenous peoples and Indigenous scholars to *refuse* to share any information or knowledge that they wish not to circulate. I understand this right of ethnographic refusal to also entail that settler scholars, such as myself, hold a responsibility to not speak on behalf of Indigenous communities without adhering to the appropriate protocols, and to avoid speaking as an authority on Indigenous culture or worldviews in general. Simply put, Indigenous stories and knowledge are not mine to share. Likewise, as a

settler who is not from the Indigenous communities engaged in this pipeline struggle, I do not believe that it is my place to discuss the dynamics or tensions that exist *within or between* Indigenous nations or families, simply because I do not fully understand these relationships and their histories. These are matters that I believe would be best shared by community members themselves, or scholars who are from these communities, should they choose to do so.

These are just a few of the methodological tensions, problems, and difficulties that I have grappled with in the writing of this text. Surely, there are many other shortcomings here of which I am not yet even aware. My hope is that I can remain sufficiently open to critique, and to learning from any additional oversights, failures, and shortcomings herein that people are willing to bring to my attention, so that I can continue to learn how to become a more responsible and accountable scholar and activist.

Chapter 2 - ‘An Empire of Resources’:

The Production of Settler Colonial Space and the Making of a Natural Resource in the Athabasca River Basin

I shall conclude my remarks upon this occasion by saying that the members will, I fully believe, feel quite satisfied if they have been instrumental, even in a slight degree, towards showing Canadians the richness of their vast domain, which is an empire in extent of resources in all that is necessary to make a nation great. Parts of it we do not now need for colonization, but it is well to know what we have in reserve, it may be called in bank parlance a ‘rest’ to draw upon in the future.

- John Schultz, Statement to the Senate of Canada, May 7th, 1888

What Makes A Resource?

In 1882, geologist Robert Bell entered the Athabasca river basin to assess the region’s geological composition on behalf of the nascent government of Canada. Reporting on the Athabasca tar sands, Bell commented that although the European explorers who previously travelled through the region had taken interest in these deposits, they had seen them merely as ‘natural curiosities rather than from any appreciation of their possible future use.’ In contrast to these times past, Bell proclaimed that the tar sands may now ‘be regarded as of great scientific interest and economic importance’ (Bell 1884: 32). This chapter begins with Bell’s observation as an entry point from which to ask how the Athabasca tar sands were transformed in the minds of European explorers from curious oddity to material of global economic significance. More broadly, this chapter asks how it is that materials come to be re-imagined and re-fashioned as “natural resources.” By doing so, I join other scholars who have worked to destabilize and unsettle the category of resource by revealing the philosophical and political-economic underpinnings that make the concept thinkable, and by

questioning what modes of governance the resource imaginary enables and constrains (Merchant 1982; Braun 1997a, 2000; Tsing 2003; Bridge 2007; 2009; Shiva 2010).

Bruce Braun (1997) writes that ‘it is essential to recognize the colonial histories and neocolonial rhetorics that continue to infuse common sense categories and identities like “nature” and “resources”’ (3), and my objective here is to do precisely that, by tracing some lines of the colonial history that infuse thinking about Alberta’s tar sands. I do so by examining the history of colonial encounters with Athabasca bitumen as recorded in the journals of early traders and explorers, and later in the studies and reports produced by state-sponsored geological expeditions of the nineteenth century. Upon tracing this history, it becomes apparent that the changing understandings of bitumen were bound-up in broader transformations in the structures of economy and governance, and the concomitant spatial re-organization of the region.

Prior to the extension of the Canadian state into the Athabasca, the political economy of the region was characterized by Cree and Dene forms of organization, decision-making, production, and exchange, as well as the mercantilist economy of the fur trade. Indigenous people retained control of their lands and produced foods and other items required for sustenance, and supplemented this with European goods that were traded in exchange for furs. Under this arrangement, European traders were only concerned with securing control of land so far as it was needed to secure trade routes that thread together a series of forts, trading posts, ports, and markets. The mercantile supply chains that were established by European traders primarily followed lakes, rivers, and shorelines. Consequently, the powerful companies of the fur trade, such as the Hudson’s Bay and North West companies, took much

greater interest in producing knowledge of the waterways than they took in the land or what lay beneath it.

However, as the Canadian state expanded into this region in the second half of the 19th century, new political, economic, and territorial logics were introduced. Politically, the state's project was to secure its claims to sovereignty over an unbroken territory. Economically, the project was to extract materials from the land that could be sold on global markets for profit. The settler colonial state thus became invested in *knowing the land* in a way that the trading companies had not been. It is in this context that we begin to see the discourse of "resources" arise. Government surveyors swept through the Athabasca region, recording and indexing any materials that held potential economic value. I demonstrate how the maps, reports, and other artifacts of knowledge that were produced by the Canadian state at this time suggest a reterritorialization of the Athabasca region in accordance with settler colonial fantasies of building an "Empire of Resources" belonging to the Canadian nation. Of course, the realization of this fantasy was also contingent upon the displacement and elimination of existing claims to territory, modes of economy, forms of legal and political authority, patterns of spatial organization, and ways of seeing or understanding the world. I thus examine the role that the geological sciences played in consolidating the authority of the settler colonial state, while displacing existing Indigenous legal-political orders and economic systems, and colonizing Indigenous lands, waters, and food systems.

It has long been acknowledged by scholars of resources that the materials to which this label applies varies in relation to time and place. This was nicely captured by Erich Zimmermann (1951) who stated that 'resources are not, they become' (15), suggesting that the qualities that make something a resource are not intrinsic to the thing itself, but rather

they can only be attributed in relation to a social context. Following Zimmerman, Alexander Spoehr (1956) emphasized that because different cultures have different uses for different things, it follows that different cultures also have different understandings of which things they consider to be resources (93). Thomas De Gregori (1987) emphasized the role that technological development plays in determining what counts as a resource, stating that the ‘creative process of fashioning the material and non-material stuff of our environment in a form usable and serviceable to human beings is determined by science and technology’ (1241). In each of these above mentioned senses, we can therefore state that ‘resource’ is a socio-ecological category (Le Billon 2012: 10). However, while these earlier scholars emphasized the social relativity and fluidity of what counts as a resource, the category of ‘resource’ itself typically remained accepted as a trans-cultural and trans-historical concept that is applicable to all peoples. David Harvey’s (1974) account of resources offers a case in point. Although Harvey emphasizes that ‘resources can be defined only with respect to a particular technical, cultural, and historical stage of development,’ and that what counts as a resource therefore changes from one society or historical period to the next, he nevertheless defines resources as ‘materials available in nature that are capable of being transformed into things of utility to man’ (272). On this account, a resource is merely a material found in nature that has the potential to be transformed into a useful item, and since all peoples make use of materials from nature, all peoples therefore have resources. In other words, while it is readily acknowledged by Harvey and these other thinkers that the *content* of the category “resource” is relative, the *category itself* is assumed to be applicable throughout time and place.

However, a later generation of scholars emphasized the cultural particularity of even thinking about the living and non-living worlds in accordance with the concept of ‘resources.’ To begin with, thinking of the world as resources requires a prior set of ontological and epistemological commitments. It is to imagine life and the material world as being parsed up into discrete objects that can be separated or extracted from their environment, torn away from the relational context in which they are encountered, and transformed into ontologically self-contained, fixed and bounded units. Once objects have been isolated from its environment in this manner, they are said to exhibit known properties and given behaviours. A resource is an isolated object that can be objectively quantified, qualified, and valued. To think world-as-resources is therefore to accept a particular worldview and set of philosophical premises that make it possible to conceive of the world as an aggregation of things (Merchant 1980; Shiva 2010). As Vanadna Shiva (2010) puts this, the category of resource suggests a world composed of ‘dead and manipulable matter’ (228).

But, in addition to the philosophical underpinnings and worldly orientations that make resources imaginable, the materialization of this imaginary also requires very specific political and economic conditions. The refashioning of living and non-living matter into discrete objects of value awaiting circulation assumes particular structures of social, political, and economic organization. Certainly, extraction requires specific *technological* capabilities; but it equally requires the coordination of *social* relations such that the labour of extraction can be performed. Further, the circulation of resources as commodities presumes an object that can be bought, sold, and owned, therefore necessitating a system of private property. Private property requires not only that institutional structures of ownership be put in place, but also structures of enforcement that can police this ownership. Further still, this circulation

of commodities implies markets, which also require structures of governance and policing, in addition to transportation infrastructures that enable the distribution of materials across space, ensuring their timely delivery to sites of production and consumption. In sum, there is nothing “natural” about “natural resources;” rather, as Gavin Bridge writes, resources are ‘the products of cultural, economic and political work’ (Bridge 2011: 821).

What follows from this however, is that where these worldviews, orientations, and structural conditions do not already exist, other ontologies, epistemes, legal-juridical and economic structures, and ways of relating to and understanding the world must be displaced, disposed of, and colonized, in order for the resource imaginary to take hold. And, where this displacement is necessary, the category of resource is consequently a product of colonial violence. As Bridge (2009) nicely describes, ‘One group’s natural resource can be another’s dispossession [...] From dams to mines to plantations and conservation reserves, resources ‘become’ only through the triumph of one imaginary over others’ (1221). The story I wish to tell about resources is therefore not one that centres themes of scientific, technological, or cultural advancement (Zimmerman 1951; De Gregori 1987), or the progressive unfolding of civilizations in accordance with stages of historical development (Rostow 1990). Rather, this is a story of ontological and material violence. This is a story of changing regimes of power and knowledge which made resources thinkable, as well as the ongoing violences that are required to sustain these regimes and fantasies in the settler colonial present.

In advancing these arguments, I am thus following the path of other scholars who have explored the role of colonial power and knowledge in reshaping the world in accordance with the logic of resources (Braun 1997a; Scott 1998; Braun 2000; Peluso & Vandergeest 2001; Tsing 2003; Porter 2007; Bridge 2007; Shiva 2010). However, the case

study of the Athabasca tar sands also points towards several dimensions of resource-making processes that have tended to be overlooked or under-emphasized in this literature to date. For instance, much of the existing literature emphasizes how the re-ordering of the world as resources is pursued in the service of extraction and capital accumulation. Shiva (2010) argues that resource-making in the colonies followed two phases, the first of which was characterized by rapacious exploitation, and only after this first phase led to ecological degradation and resource scarcity did a second phase of resource *management* begin, which was intended to ensure a continued supply of raw materials to industry (229). The rapacious exploitation is apparent today in the tar sands, however this case suggests that there is something more to the story than capitalist extraction.

While the Canadian state always maintained an eye toward the development and eventual extraction and commercial production of this material as a commodity to be circulated on capitalist markets, it began to index, quantify and qualify, and govern the tar sands as a natural resource long before extraction was either feasible or necessary, and nearly a century before the commercial production of bitumen commenced. In this case, the production of knowledge of bitumen as a resource served an even more immediate purpose – to consolidate the state’s claims to authority over territory (see also Braun 1997a, 2000). As much as the state produced resources by setting in place the onto-epistemological and political-economic conditions required to rethink and govern the world in accordance with this logic, resources equally produced states insofar as the known existence of resources legitimated state control and management of these territories. The production of objective, scientific knowledge of the territory presupposed authority over territory, legitimated new forms of resource governance, and provided settlers with a sense of a patriotic pride in their

newfound ‘empire in extent of resources.’ Here, I find it helpful to think of Deleuze and Guattari’s (1983) concept of the desiring machine, which suggests that there are no ontologically-prior objects and subjects of desire because the desired and the desirable are co-constituted – they produce one another through the relationship of desire itself. Building from this, we may think of the settler colonial state as a *resource-desiring-machine*, insofar as the state produces the object of its own desire, and that object of its desires legitimates its own existence in turn. The settler colonial state and the resource are thereby mutually-constituted and ontologically dependent.

Here, I think it is also useful to distinguish between three colonial concepts – nature, resource, and commodity – which I understand to be conceptually related but distinct categories. Nature (or wilderness) connotes an ecological condition that remains absent of any human intervention, untouched by societies. As numerous scholars have argued, this idea of a landscape devoid of human intervention is a construct that typically denies any Indigenous presence and has been repeatedly deployed to legitimate colonial possession (Cronon 1992; Braun 2002; Simpson and Bagelman 2017). Resources (or natural resources) are the subset of materials found in nature that have been identified as having the potential to be extracted and circulated as commodities. Resources are thought to be found in nature – hence ‘natural’ resources – but are yet to be extracted and circulated in markets as commodities. In Heidegger’s language, resources remain ‘on call,’ ready to be directed ‘toward furthering something else’ (1977: 14-15). Heidegger uses the fitting example of coal, writing that ‘[t]he coal that has been hauled out in some mining district has not been supplied in order that it may be present somewhere or other. It is stockpiled; that is, it is on

call, ready to deliver [the energy] that is stored in it (1977: 15). Heidegger describes this way of ‘setting upon’ the world:

Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering. Whatever is ordered about in this way has its own standing. We call it the standing-reserve (1977: 17).

Following Heidegger then, to think resource is not only to think of matter as extractable from its environment, but also to think of it as stored potential for future circulation and use towards furthering another objective someplace else. The commodity, in contrast, is the resource that has been extracted and placed into circulation, readily bought and sold on markets for purposes of capital accumulation (Marx 1967). A resource can thus be thought of as a commodity-in-waiting, or a potential commodity that remains in nature, awaiting circulation, in a state of standing-reserve.

I should also distinguish the sense in which I am referring to resources from the commonplace understanding of resource as an item that has some form of usefulness or use value. Indeed, Cree and Dene people of the Athabasca region are known to have used tar sands bitumen to patch and seal canoes, and it is also likely that they used it as a fuel source prior to the onset of settler colonialism, and in this sense one might contend that bitumen has been a ‘resource’ long before the Canadian state arrived on the scene. But here, I would respond by arguing that there is qualitative difference between the use of a material and the state’s management of the living and material world as a ‘natural resources.’ To manage the world as resources, or as commodities-in-waiting, entails a very particular mode of governance that involves counting and measuring assets, calculating volumes, assessing value, synthesizing data, inventorying territories, and simplifying and reducing landscapes into maps and reports that allow regulations to be determined from afar (Clayton 2000; Harris 2004; Scott 1998).

A final argument that I would like to put forward in this chapter speaks to the relationship between resources and violence. There has been much discussion in academic literature regarding when and how resources cause violence. The thesis of the resource curse contends that states that are dependent on resource extraction become prone to breakdowns in democratic governance, which can result in a proliferation of autocratic state violence and also renders these societies more susceptible to armed conflict and warfare (see for instance, Auty 1994; Ross 1999, 2001, 2012, 2015; Humphery, Sachs and Stiglitz 2007; Collier 2008; Colgan 2013). Others scholars have added nuance and complexification to these strong resource curse claims (Le Billon 2001; 2012; Watts and Peluso 2013). Philippe Le Billon (2012) argues that resources themselves do not *cause* conflicts (5), but that conflicts over certain resources in certain institutional conditions can be either more or less likely to lead to different types of violent conflicts (67). For instance, Le Billon argues that oil's impact on state violence will depend on whether or not the oil is produced onshore or offshore, and whether benefits are accrued by the weaker party or stronger party in a conflict (67). Watts and Peluso (2013) build from Le Billon, putting forward an approach to thinking about 'resource complexes' which takes into account all of the political and economic structures built up around specific resources that might contribute to explaining the relationship between resources and violence (194-5).

Here, I would like to push this line of thinking further by considering the underlying structural violence that is necessary in order to re-order the world as resources in the first place, as well as the forms of violence that are necessary to sustain this logic of governance. Or, in the words of Anna Tsing (2003), I want to consider 'how resources are traumatically produced' (5100). Much of the literature on resource violence tends to work from a starting

point at which ‘resources’ are assumed to have been already established as a category of governance and contestation. But, to begin from the presumption that the natural resource is naturally a resource is to skip over any analysis of the colonial violence involved in processes of primitive accumulation, and accumulation by dispossession that is required to both establish and maintain the category of ‘resource’ (Marx 1967; Harvey 2003; Glassman 2006; Coulthard 2014). As Gavin Bridge (2008) notes, the resource curse literature ‘largely assumes land and resource access rights have been settled and [...] focuses on political conflicts arising from the allocation of revenues rather than the wresting of land and resources’ (406). But, neglecting to grapple with the historical processes that bring the resource into being performs the additional political work of concealing and obscuring the structural violence that make the resource imaginary possible. By exposing and critiquing the structural conditions that underlie this concept, I hope to offer a different way of thinking about the relationship between resources and violence. Rather than debating how or when resources cause violence, as much of the literature on the “resource curse” has done, I want to think of resources *as* violence – that violence is implicit in the very concept of the resource. In other words, I want to think of violence as the condition of possibility through which resources are constituted and sustained. By doing so, I additionally hope to contribute to efforts to strengthen different orientations toward the material world, and make a different form of material politics possible.

“A Natural Curiosity”

The Athabasca region is the homeland of Cree, Dene, and Métis peoples. While it is not my intention to provide a complete historic or ethnographic account of this region’s

original inhabitants (nor would that even be possible), it should suffice for my purposes to state the obvious – that prior to first contact with European peoples and the introduction of the fur trade in this area, the people of the Athabasca region had developed complex socio-ecological systems, structures of legal and political governance, economic practices and systems of exchange, and ways of understanding and relating to the non-human and material worlds (see Athabasca Chipewyan First Nation 2003; McCormack 2011). It was Cree and Dene people from this region who first informed Europeans of the existence of the tar sands well before Europeans ever stepped foot in the Athabaskan river basin – the written archive makes clear that bitumen was not “discovered” by European explorers, as many contemporary narratives suggest. The earliest known account of tar sands bitumen recorded by a European comes from 1715 when Thanadelthur, a Dene woman, informed James Knight, a trader stationed over a thousand kilometers east of Athabasca at York Factory on the shores of Hudson’s Bay, about ‘a Certain Gum or pitch that runs down the river in Such abundance that they cannot land but at certain places’ (Knight 1715). Several years later, also at York Factory, Henry Kelsey recorded that Wâpisiw, a Cree man, had presented him with a sample of ‘that Gum or pitch that flows out of the Banks of that River’ (MacGregor 1981 pp.35-6).

Europeans did not arrive in the Athabasca region until 1778, after being taught how to cross from the Hudson’s Bay watershed to the Arctic watershed across what came to be known as the Methye portage – a 12-mile overland route that connects present-day Lac la Loche with the Clearwater River, which then flows into the Athabasca River at the present-day site of Fort McMurray, Alberta. This pass quickly became a corridor that was heavily trafficked by the European traders, and the Athabasca soon emerged as the fur trade’s most

profitable region. By 1801, the Northwest Company reported having over 250 traders stationed in the region (Innis 1999: 238).

It was in this context of the Athabaskan fur trade that Europeans first encountered the tar sands in their environment. Numerous traders and explorers of this era noted the tar sands as a unique feature of the landscape through which they passed. In 1790, Alexander Mackenzie of the North West Company expressed intrigue while travelling along the Athabasca River near the present-day location of Fort McMurray, writing:

At about twenty-four miles from the Fork [of the Athabasca and Clearwater Rivers], are some bituminous fountains, into which a pole of twenty feet long may be inserted without the least resistance. The bitumen is in a fluid state, and when mixed with gum, or the resinous substance collected from the spruce fir, it serves to gum the canoes. (Mackenzie 1970:129)

The following year, Peter Fidler, who accompanied HBC cartographer Philip Turnor, recorded the following:

Found great quantities of Bitumen a Kind of liquid Tar oosing out of the Banks on both sides the river, in many places which has a very sulphurous smell & quite black like real Tar, & in my opinion would be a very good substitute for that useful Mineral (Hearne & Turnor 1934: 386).

David Thompson of the North West Company is said to have also described the lower course of the Athabasca River as ‘abounding in bitumen’ in his journal notes of 1799 (Russel 1870: 91). In the following century, Sir John Richardson passed through the region on a mission to find the lost Franklin Expedition in 1848 and noted that ‘The whole country for many miles is so full of bitumen that it flows readily into a pit dug a few feet below the surface’ (Richardson 2013: 126).

While each of these traders and explorers found the existence of bitumen to be noteworthy, their remarks are also notably succinct. The traders’ observations of the tar sands are usually mentioned in the context of describing the waterways through which they were passing. Mackenzie’s notes suggest that he took more time to investigate the tar than others.

Both he and Fidler mentioned possible uses for the substance. However, none of these traders considered possible economic or *exchange* value of this material, nor did they take any interest in it as an item of trade. For the most part, the tar remained a curious feature of a largely unfamiliar landscape.

Perhaps it is not surprising that the fur traders would take only a passing and limited interest in the tar sands. They entered the Athabasca region as employees of the trading companies that were beholden to powerful investors from the financial centres of Montréal, Toronto, and London. As such, their primary purpose was to procure furs that could be transported back to trading posts and eventually on to ports where they would then be shipped to global markets, yielding profits for the companies and their investors. The most expedient way for the traders to procure these furs was to trade with native peoples who were skilled trappers with intimate knowledge of both the lands and animal behaviours. As Patricia McCormack (2011) describes, profit in the mercantile capitalist economy is derived by traders not through direct engagement in production, but rather through the purchase of goods from producers below their market value, and the sale of these goods at market value to a buyer in another location (33). What McCormack calls the ‘fur trade mode of production’ could be understood as an economic formation where the native peoples were the producers who retained control of the means of production (their lands) and provided a product (furs) in exchange for other goods. The role of trader in this ‘mode of production’ was to trade for these goods and ensure their efficient delivery to global markets.

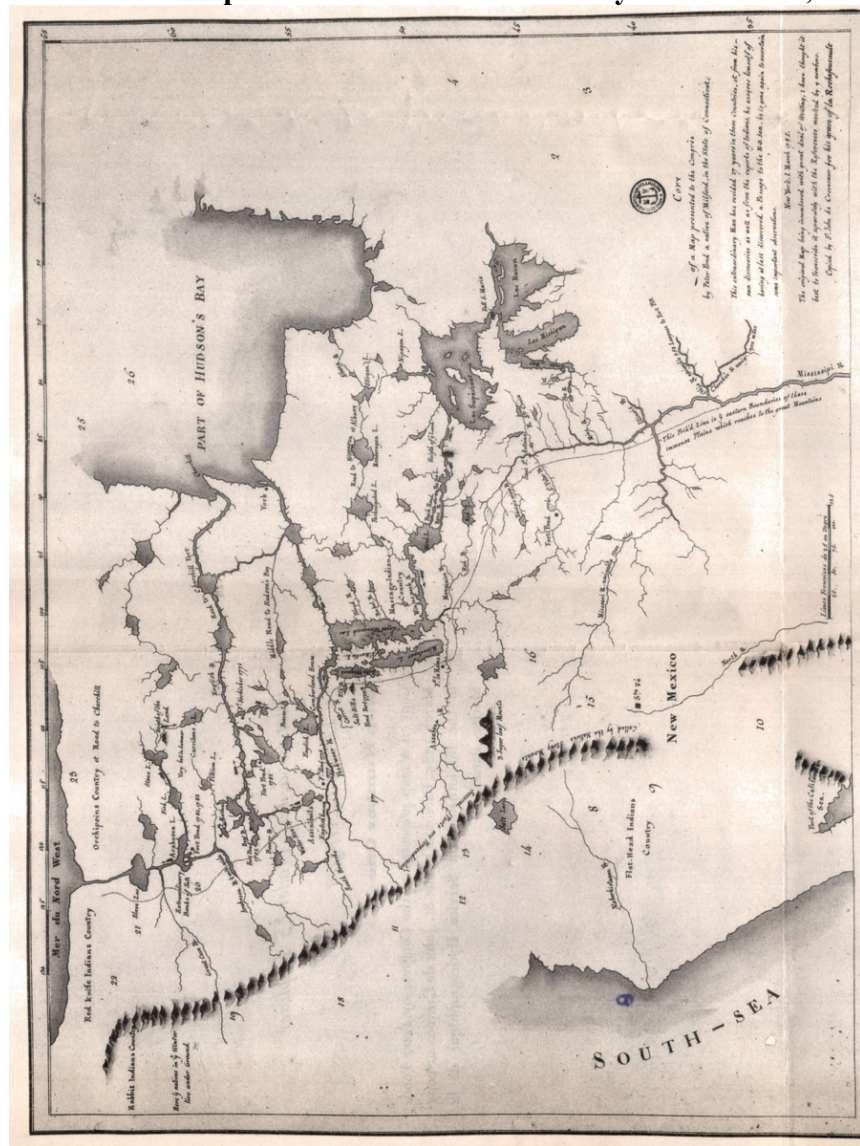
Consequently, as an economic formation that depended on the hunting and trapping activities of native peoples, a crucial feature of the fur trade is that it relied not only on the knowledge and skills of native peoples but, importantly, it also hinged on native peoples

retaining control over their lands so that they could engage in these productive activities (Fisher 2011). Outside of the spattering of posts and forts that the traders established as spaces of exchange, control of *land* was not a priority or interest for either the traders or the companies for which they worked; rather, it was knowledge about navigating the lakes and rivers that was of primary importance. In the context of this economic system, the tar sands, and other features of the land, were of little value to the traders, aside from any ways that they might assist navigation. The tar deposits were noteworthy to the traders in these ways because they were a distinguishing feature of the riverbank that could help the traders locate and position themselves along waterways, and as noted by Mackenzie, the substance also had useful applications for sealing damaged canoes.

The journals and records kept by the European fur traders and early explorers are very telling of the type of information they considered to be significant and relevant to their objectives. These records provide considerable detail regarding the navigability of waterways, as well as distinguishing features of shorelines and riverbanks, but provide very few details regarding the interior character of the landscape. The same can be said about the maps and visual representations that these traders and explorers produced. Consider, for instance, the maps created by Peter Pond, who is believed to be the first European to cross into the Athabasca region after being introduced to the Methye portage in 1778 (Figure 2.1). Pond's maps depict the names and approximate shapes and sizes of all the lakes and rivers stretching from Lake Superior and the Hudson's Bay to the Northwest, as well as the location of notable forts and trading posts such as York Factory and Fort Churchill. Pond also regularly included speculative representations of waterways that he had never actually visited. Figure 2.1, for instance, correctly depicts a river running north of Great Slave Lake to

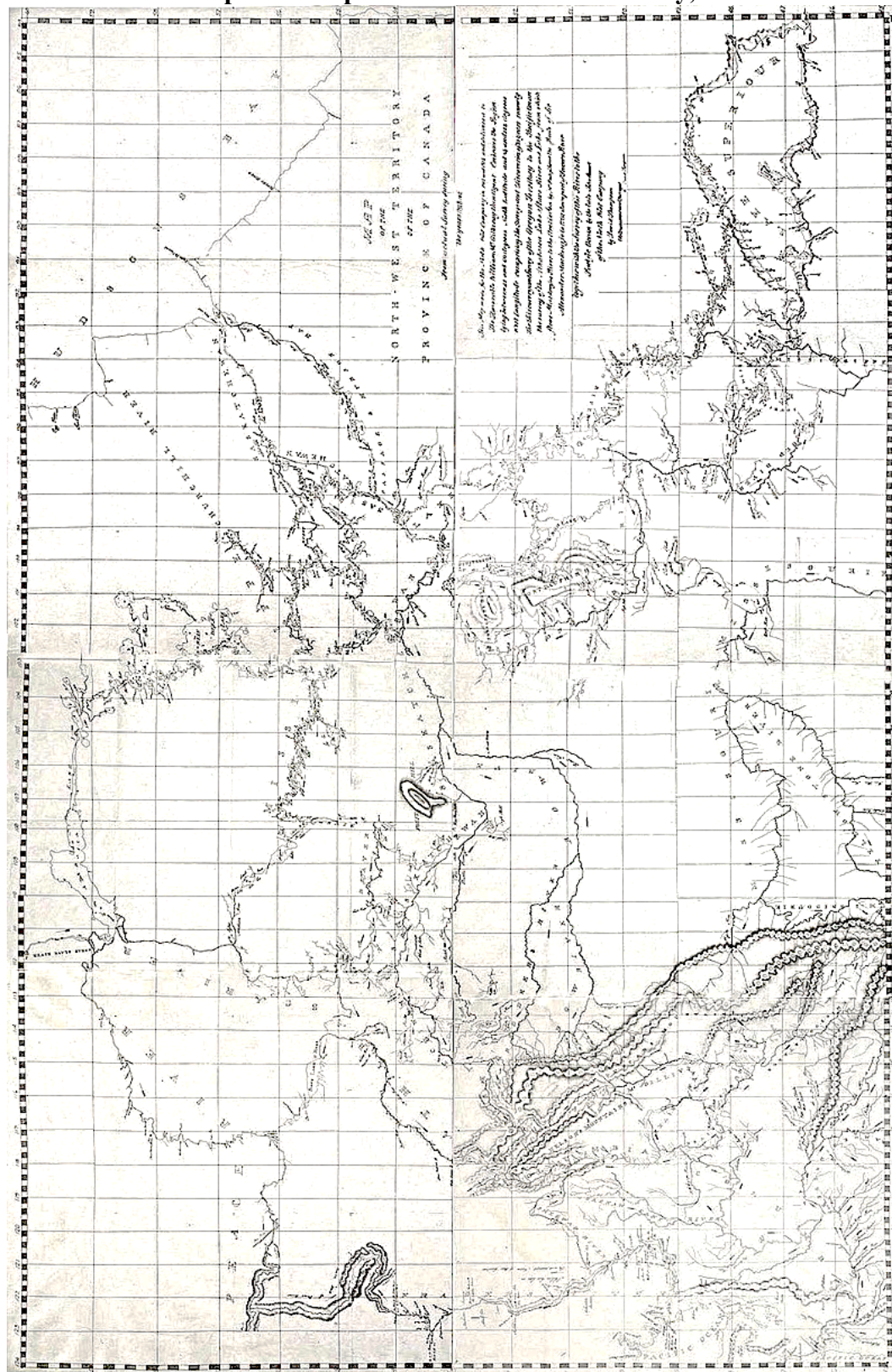
the Arctic Ocean, the existence of which Pond had derived from information he was given by native people (Hayes 2015:140). This map also speculates (incorrectly) the existence of a river exiting Great Slave Lake and flowing west across the Rocky Mountains to the Pacific Ocean. Again, the possible existence of the long sought Northwest Passage would have been of tremendous interest to the fur trade companies and financiers eager to find a more efficient route with which to transport furs from North America to Asian markets.

Figure 2.1: Peter Pond's map of the North West Territory trade routes, 1785



Source: University of Toronto Map and Data Library. Retrieved from: <http://maps.library.utoronto.ca/cgi-bin/files.pl?idnum=1296>

Figure 2.2: David Thompson's Map of the North West Territory, 1792-1812



Source: Musée McCord Museum, Accession Number: M5455. Retrieved from:
<http://digital.library.mcgill.ca/nwc/mapsandroutes/historicalmap.htm>

What is notably absent from Pond's maps are details regarding the lands themselves. As was typical of maps of the North West produced at this time, Pond represents the lands between the lakes and rivers as largely empty space, save for the Rocky Mountains – that imposing continental divide that had yet to be traversed by Europeans at the time of Pond's renderings. Pond's maps do note the names of native groups from various regions, which again is information that would have been relevant to the fur trade economy. But a description of the land, or the existence of any sites of human habitation aside from European forts and trading posts, appear to be absent, suggesting that the land itself had little real significance to Pond. The map of David Thompson (Figure 2.2), who explored this region between 1792-1812 on behalf of the North West Company, conforms to a similar pattern, accurately depicting the waterways from the Great Lakes and Hudson's Bay to the Athabasca region and the Pacific Ocean while leaving the space in between blank.

What these fur trade era maps do depict, with remarkable detail, effectively amounts to wide-ranging supply chain routes that connect not just the Athabasca but the whole of the territory that came to be known as the "North West" to markets throughout the British Empire's mercantile economy. As these illustrations suggest, networks of lakes and rivers, forts and trading posts, ports and shipping routes, were linked together allowing goods to be transported long distances across space to and from the North West. The fact that these traders took time on their long and arduous journeys to produce these maps and representations with such detail and precision attests to the importance of these supply chain routes to the traders and the financial interests that backed them. Indeed, profitable exchange for the fur trade mercantilists depended upon a secure, stable, and predictable supply (Harris 1997). Access to knowledge about these supply chains was one way of securing trade flows,

thereby helping to ensure that trading companies would get the products that they wanted when they wanted them. Likewise, the lack of detail regarding the geography of the lands between these routes suggests that this information was of relatively little importance to the fur trade companies.

Settler Colonial Fantasies And The Production Of Resource Knowledge

When the Dominion of Canada was decreed into existence by a British Act of Parliament in 1867, the founding document of this incipient country stipulated the conditions under which other colonies and territories, including ‘Rupert’s Land and the North-Western Territory,’ could be incorporated into the Union at a future date (British North American Act 1867, Section XI). The nascent government moved quickly to pursue incorporation of these western lands, including the Athabasca region, by passing a House of Commons resolution during the very first session of the first Parliament of Canada. This resolution called on the Crown to ‘unite Rupert’s Land and the North-Western Territory with the Dominion of Canada, and grant to the Parliament of Canada authority to legislate for their future welfare and good government.’ It claimed that extending the Dominion ‘westward to the shores of the Pacific Ocean’ would ‘promote the prosperity of the Canadian people, and conduce to the advantage of the whole Empire’ (Government of Canada 1867: 159). Introducing debate on this motion, the government’s Minister of Public Works, William McDougall, asserted that it was the obvious and natural destiny that these territories, stretching from ocean to ocean, be united under the common authority and nationality of Canada. McDougall stated that he ‘looked forward to the time when the whole expanse from the Atlantic to the Pacific would be peopled with a race the same as ourselves, enjoying the same political rights, and moving

forward to the same destiny' (Government of Canada 1867: 182). Others in Canada's House of Commons echoed this sentiment.

This ideological vision of a racially homogenous nation stretching across the continent was never far removed from the material objective of securing and extracting resources from these territories. The same resolution that called upon the Crown to transfer jurisdictional authority from the HBC to the Government of Canada stated that this was necessary in order to ensure the 'colonization of fertile lands of Saskatchewan, the Assiniboine, and the Red River districts, the development of the mineral wealth which abound in the regions of the Northwest, and the extension of commercial intercourse [...] from the Atlantic to the Pacific' (Government of Canada 1867: 159). Much of the debate regarding annexation of these territories that ensued in the House of Commons centred on questions regarding just how much wealth these resources would yield, and whether they would generate sufficient value to make annexation an economically viable venture.

Notwithstanding the presumed destiny of this colonizing project, the assumption of jurisdictional authority over these territories by the Canadian government was not straightforward or obvious, even in accordance with imperial law. The British Crown had already granted this authority to the HBC by Royal Charter in 1670. Cognizant of this potential legal hurdle, many Members of Parliament sought to discredit the Royal Charter's legitimacy. One position that was frequently advocated by parliamentarians was that the HBC had invalidated its legal claims to these territories on the grounds that it had failed to create settler colonies. McDougall argued that the commercial interests of the HBC (namely the fur trade) were at odds with the objectives of creating colonies, and thus colonization could never be achieved unless authority was transferred to the Canadian state (Government

of Canada 1867: 181). Others in Parliament followed suit, asserting that ‘the Company had failed to carry out the objects contemplated,’ that ‘the whole course of the Company was opposed to the settlement of the country,’ that the HBC was ‘effete and truly incapable of governing or developing the resources of that interesting country,’ that it ‘sat as an incubus and curse on the country,’ and that it should be held liable for having ‘prevented the march of civilization’ (Government of Canada 1867: 182-94). The following year, the British Crown passed the Rupert’s Land Act, which effectively ceded claims to legal and political jurisdiction over these territories to the Dominion in exchange for a paltry sum of monies paid to the company as compensation.

Importantly, the Rupert’s Land Act marked more than just the *transfer* of authority from one governing body to another – it also marked a *transformation* in the political and economic logic of this authority. Whereas the trading companies’ primary interest was to secure transportation routes along lakes and rivers, the government of Canada’s interest was in securing control over the land. As stated explicitly in the House of Commons resolution on Rupert’s Land, the state’s interest was in the ‘colonization of the fertile lands’ and ‘development of the mineral wealth.’ This shift in priorities from control over supply chains to control over territory is evident when we compare the knowledge artifacts produced in each period. Whereas the trading companies produced detailed maps and documents outlining the lakes, rivers, and shorelines of the North West, while depicting the unknown lands in between these waters as largely blank space, the changing political and economic logics associated with the Canadian state were accompanied by a proliferation of maps and studies that quickly filled in these blank spaces. Nearly immediately after the passing of the Rupert’s Land Act, the Geological Survey of Canada (GSC) set out to map and collect data

from these territories.⁷ GSC scientists dutifully documented the geological composition and strata, soil fertility, topography, and botanical features of this immense territory. The political and economic objectives behind these scientific pursuits were clear – the knowledge generated was intended to serve the economic project of extracting wealth from these lands, while also forwarding the associated political project of consolidating authority over the territory. Indeed, as Director Alfred Selwyn stated in the introduction of the GSC's 1875-6 Report, the objective of the geological survey was to make the 'varied mineral resources of Canada more widely known, and thus promote their legitimate and successful development' (Geological Survey of Canada 1877: 3). Selwyn remarked that, 'rising nations require to know what their resources are' (17).

It is in this context, as the HBC withdrew from the North West and the nation-building project of the Canadian settler colonial state attempted to expand into the region – an institutional change that was accompanied by a change in political and economic logics of governance – that we begin to see the lands and minerals of the North West explicitly referred to as "resources." Seeing like settlers, visitors to the Athabasca region increasingly looked upon the landscape with a *resource gaze*, seeking materials that could be extracted and exploited to procure wealth. As GSC scientists entered the Athabasca to study the tar sands, not only did they assess its physical properties, chemical composition, and the surrounding lithology, but they equally considered the volume of reserves, possible industrial applications, estimated economic value, potential technologies and methods of extraction, as well as questions related to the transportation and delivery of these resources to markets. These economic and extractivist musings were not tangential or unrelated to the geological

⁷ For a more complete history of the Geological Survey of Canada see Zaslow (1975), and Zeller (1984).

pursuits of the survey; indeed, they were central to the GSC's mandate (see Braun 1997a, 2000; Zeller 2000;).

In 1875, John Macoun became the first GSC scientist to arrive in the Athabasca region, and he took great interest in the tar sands. Macoun collected samples of the 'tar conglomerate,' described its properties and textures, noted the surrounding geology, approximated its depth, and hypothesized how this substance was biophysically produced. But in addition to his geological observations, Macoun also noted important details that were more relevant to economic extraction than pure geology, such as potential steamboat routes into the region that could 'open up an immense region to trade and settlement' (Macoun 1877: 171). Visions of future settlement and development were never far from Macoun's mind. In his report to the GSC, he describes laying in silence along the banks of the Athabasca river one night during his expedition, imagining the sounds of development that would soon ring through these lands:

I lay and thought of the not far-distant future [...] when the white man would be busy with his ready instrument, steam, raising the untold wealth which lies buried beneath the surface, and converting the present desolation into a bustling mart of trade (Macoun 1877: 170).

Orwam (1980) describes how Macoun's geological and botanical work in the West led him to become a 'publicist and propagandist' for Canadian expansionism (156). In diaries that Macoun kept during this trip, he reflected on his purpose for engaging in these distant geological expeditions, stating, 'I shall not rest until the Canadian public knows the value of this immense country both as regarding its resources and its capability of development' (quoted in Orwam 1980: 156). According to Orwam, Macoun's ideological investment in the Canadian settler colonial imaginary was so resolute that it bordered on faith, and at times he was known to lash out aggressively towards those who did not share his commitment to this imperious project.

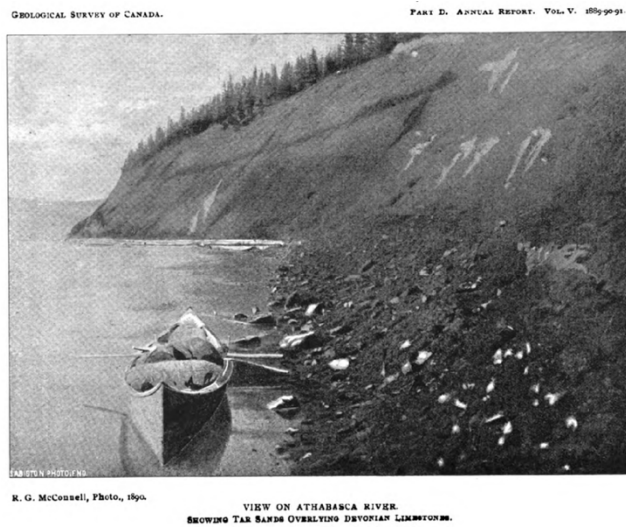
The resource gaze is even more apparent in the GSC report published in 1884 by Dr. Robert Bell, who followed Macoun into the Athabasca region. It was Bell who made the comment discussed in the opening of this chapter about how the tar sands can now be regarded as more than just a natural curiosity but rather an item ‘of great scientific interest and economic importance.’ In his report, Bells speculates on the potential economic value of many of the region’s minerals, including gold, iron, lignite, ocre, clay, limestone, maris, sand, graphite, and salt. But again, it was the region’s fossil fuel resources in which Bell took the most interest, noting that ‘Petroleum and Asphalt were the most important substances which came under my notice during the season’ (Bell 1884: 33). Bell then proceeded to carefully document a variety of different potential economic applications of tar sands, and considered potentially ‘profitable means of extracting the oil and paraffin which it contains’ (Bell 1884: 34).

Bell sent samples to the GSC laboratory in Ottawa where chemist G. Christian Hoffman conducted tests to determine the chemical properties and composition of the material. In a paper titled, ‘Chemical Contributions to the Geology of Canada,’ Hoffman reported the tar sands’ specific gravity, its consistency and plasticity at different temperatures, its reaction to certain other chemicals, and its granularity. Hoffman also determined the composition of the ‘bituminous sand-rock’ to be 12.42% bitumen, 5.85% water, and 81.73% siliceous sand. Based on his findings, Hoffman suggested several potential industrial applications. Given the material’s ‘intimate combination of the mineral and organic constituents,’ he advises that it would make an effective asphalt ‘suitable for employment in the construction of roads, foot-paths, court-yards, & for asphaltting the flooring of granaries, basements of warehouses, and the like, and further as a roofing

material' (Hoffman 1883: 309). Hoffman also considers methods for separating the bitumen and sand, recommending that it be boiled or macerated in a container with hot water allowing the 'bitumous matter to rise as a scum to the surface' where it can then be skimmed off while the sand particulate falls to the bottom. Hoffman reports being able to remove near 69.26% of the sand using this method, and notes that the sand itself could be commercially valuable to glassmaking industries (310).

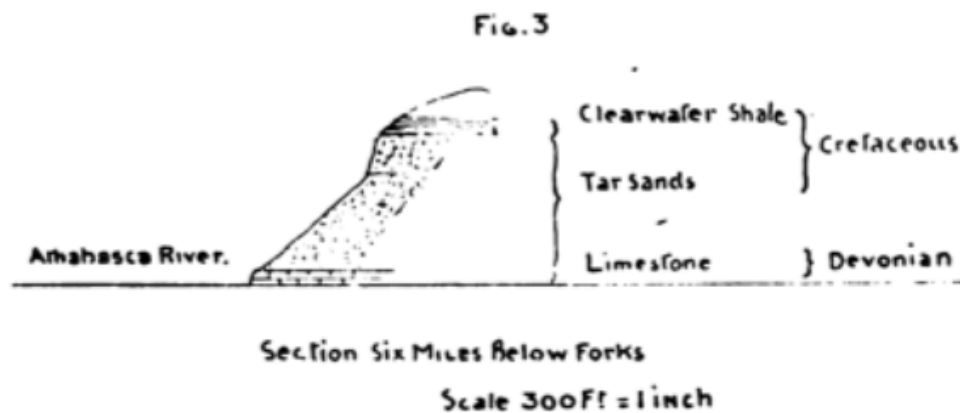
GSC interest in the tar sands continued in the 1890s, led by Richard McConnell who produced yet another report on the geology of the Athabasca region published in 1893. Much like Macoun and Bell before him, McConnell took care to classify the landscape in accordance with botanical taxa and geological strata. He collected fossils and other samples, measured or approximated quantities, described qualitative features, recorded locations, and noted items of economic interest as he proceeded through the region. McConnell also provided much greater detail regarding the stratigraphy of the tar sands than his predecessors, and provided photographs of outcrops along the banks of the Athabasca river, and field sketches that diagram its sedimentary structure (Figure 2.3 & Figure 2.4). These stratigraphic recordings provided clues regarding where oil might be found, how much of it might exist, and how it might be most effectively extracted (64-6). McConnell refers to this work as 'economic geology,' and remarks that although 'the commercial value of the Tar sands, as exposed at the surface, is at present uncertain' they would most certainly 'be profitably utilized for various purposes, when this region is reached by railways,' (McConnell 1893: 65-6).

Figure 2.3: Richard McConnell's photo of tar sands oozing out of outcrops along the Athabasca River (1890)



Source: McConnell (1893)

Figure 2.4: Richard McConnell's Geological Cross Section

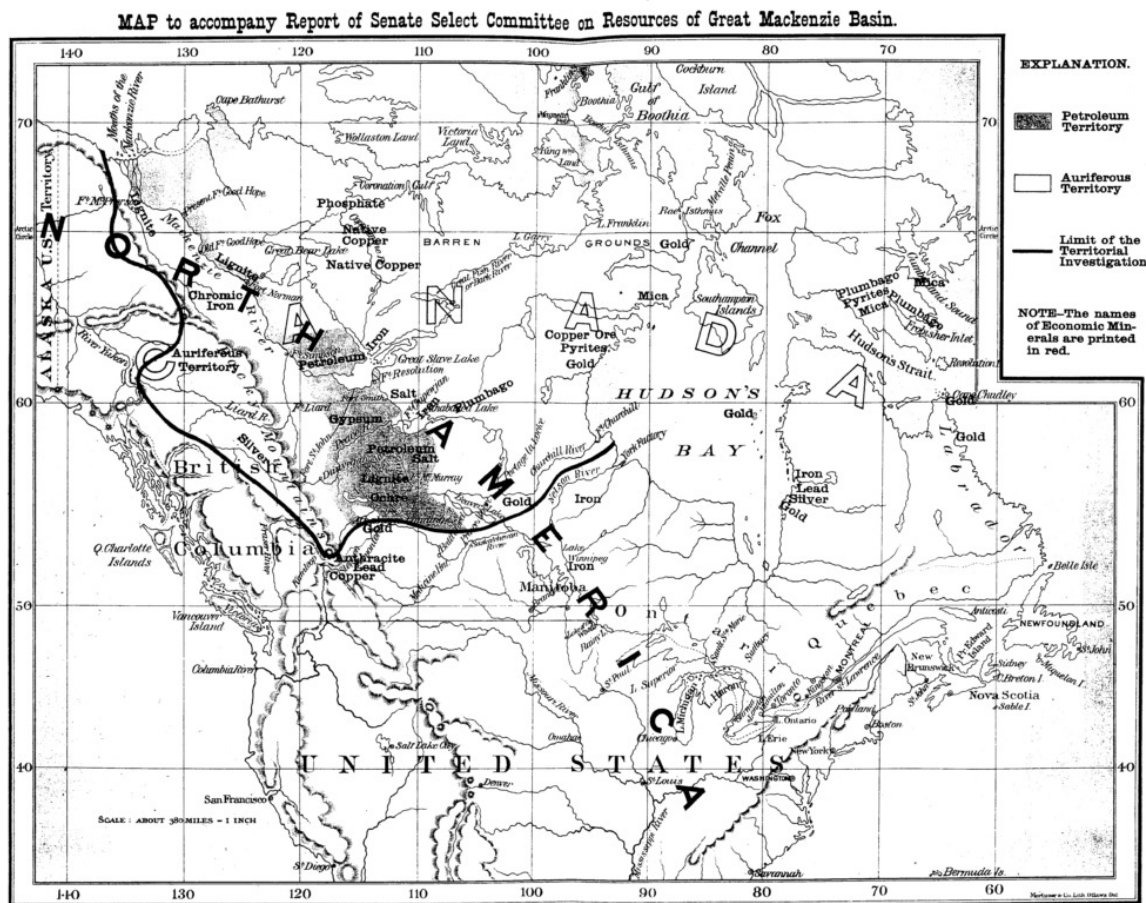


Source: McConnell 1893 (p.34D)

In addition to the work of the GSC, the government of Canada additionally appointed a Senate Committee to investigate the commercial value of the resources of the Mackenzie basin (including the Athabasca region) in 1888. Roughly two dozen people thought to be familiar with the region offered oral and written testimony before this committee, appropriately named the Select Committee of the Senate Appointed to Inquire into the

Resources of the Great Mackenzie Basin. Committee members questioned expert intervenors in order to ascertain information related to the navigability of lakes and rivers, the extent of arable lands, and the commercial viability of fisheries, forests, mines, and agriculture in the region. In the Committee's final report, Senator John Schultz describes 'the existence in the Athabasca and Mackenzie Valleys of the most extensive petroleum field in America, if not the world' and anticipates that 'this great petroleum field will assume an enormous value in the near future and will rank among the chief assets comprised in the Crown domain of the Dominion' (Shultz 1888: A1-14).

Figure 2.5: Map accompanying the Report of Senate Select Committee on Resources of the Mackenzie Basin (1888)



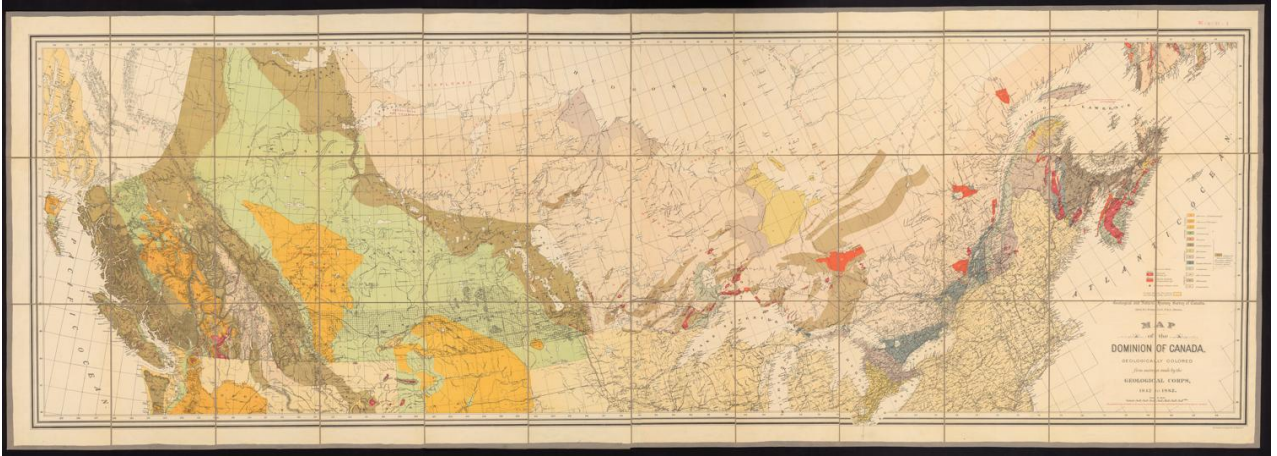
Source: Third Report of Senate Select Committee of the Resources of the Mackenzie Basin. Retrieved from: http://parl.canadiana.ca/view/occihm.9_07154_22_2/317?r=0&s=2

Speaking before the Senate, Schultz praised the work of the Select Committee, which he believed would demonstrate to Canadians that ‘their vast domain [...] is an empire in extent of resources’ (Government of Canada 1888: 567). Nevertheless, he advised against imprudent action to extract these resources, suggesting instead that the Canadian state hold them ‘in reserve.’ Comparing these resources to a bank account, Schultz stated: ‘[W]e do not now need [the resources] for colonization, but it is well to know what we have in reserve, it may be called in bank parlance a “rest” to draw upon in the future’ (567). As Schultz observes, beyond merely facilitating resource extraction, the production of resource knowledge served state-building purposes by fostering a sense of resource nationalism among this newly formed government’s political subjects:

the more we know of it the prouder we will be of this great Dominion, which [...] should foster and encourage that natural feeling of confidence in our own resources which is calculated to increase the patriotism of our people and prepare them for that high place among the nations, which, in my opinion, is Canada’s ultimate destiny (Government of Canada 1888: 568).

It is worth noting the numerous ways that the production of resource knowledge by state bodies contributed towards advancing the settler colonial project. First, this production of knowledge re-storied the land as an aggregation of resources and identified new frontiers for capitalist extraction. This entailed more than just a flat or horizontal expansion of the frontier, but also the ‘producing of vertical territory’ (Braun 2000). As Braun has argued, as the state ‘geologized’ the territory, revealing its ‘inner architecture,’ the capitalist frontier expanded in three dimensions, drawing the subterranean into global circuits of extractive capital (Braun 2000: 24; see also Braun 1997a; Scott 2008). This calls to mind Neil Smith’s (1984) warning that ‘[n]o part of the earth’s surface, the atmosphere, the oceans, the geological substratum, or the biological superstratum are immune from transformation by capital’ (79).

Figure 2.6: Map of the Dominion of Canada geologically coloured, made from surveys by the Geological Corps, 1842 to 1882



Source: E-rara.ch. Retrieved from: <http://www.e-rara.ch/zut/content/titleinfo/12007194>

Additionally, the production of *resource knowledge* legitimated and enabled practices of *resource governance* – new techniques and logics of planning, structuring and regulating entire landscapes and corresponding social relations in accordance with imperatives of natural resource management. As Bakker and Bridge (2006) describe, ‘mineral exploration negotiates an extremely heterogeneous biophysical world and creatively produces the target resource’ (9). The ontological reduction of this heterogeneous world into an assortment of discrete things, which is required in order to objectify matter-as-resource, legitimates the governance of this world as such. The careful measurement, quantification, and testing of materials in laboratory conditions abstracted from the surrounding environment, as practiced by scientists from the GSC in their explorations of the Athabasca region, served to render matter a known object with properties and behaviours that can be predictably governed in accordance with natural laws. Moreover, the production of artifacts of knowledge that travel, such as the maps and reports generated by the government of Canada, allows this resource governance and management to be conducted from afar. These abstract representations rendered large territories intelligible to decision makers in far-off centres of financial and

colonial administration, thereby allowing decisions about these spaces to be made by officials who had never stepped foot in them (Clayton 2000; Harris 2004). This was certainly the case with the cartographic representations and knowledge produced by the GSC (see Braun 2000).

Finally, by filling in the blanks of fur trade era cartographic representations, the resource cartographies produced by the settler colonial state performed the work of presenting a complete and unbroken territory governed by the singular political authority of the Dominion of Canada. Unlike the maps produced by the fur trading companies which presented the land as empty space, the expansion of the Canadian settler colonial project – and the new political, economic, and territorial logics that accompanied it – filled these spaces in (Braun 1997a). The state's economic interest in resource extraction, and political interest in asserting uninterrupted sovereignty over a singular territory stretching from the Atlantic and Pacific, lent to mapping the land in a way that the trading companies of the mercantile economy had not. We see this clearly in the maps produced by both the state's Select Committee, which labels the land in accordance with its associated resources (Figure 2.5), and the GSC, which colours in the previously blank space in accordance with its geological characteristics (Figure 2.6). By suggesting that the state had complete and objective knowledge of these lands, these documents strengthened its claims to sovereignty over this territory vis-à-vis other competing colonial powers as well as its inhabitants. The production of geological knowledge in the Athabasca region was thus not just a politically or economically neutral scientific endeavour that merely described the physical properties of an objective world; geological sciences re-narrated the lands as resources awaiting extraction.

This knowledge was produced by, and reinforced, the institutions of colonial capitalism, and was entangled and entwined in violent processes of dispossession in the Athabasca.

Maps such as these re-storied and re-territorialized in ways that gave expression to the settler colonial fantasy of a singular “empire of resources,” and effectively provided a blueprint for how these fantasies might unfold over time. As Senator Shultz remarks, this depiction of a vast resource Empire belonging to the Canadian nation offered a vision of a territory with which the new-born political polity of Canada could associate itself with patriotic pride and attachment. Needless to say, this re-territorialization simultaneously erased other existing understandings of these lands which were not represented on these maps. And indeed, this territorial erasure was a condition of possibility that would have to be achieved in order for the resource fantasies of Canada’s settler colonial project to be realized.

Producing Settler Colonial Space & The Violence Of The Resource

The rendering of matter as a resource requires more than just its ideational reconceptualization, the production of knowledge about a material’s chemical composition, physical properties, industrial applications and economic value, and the re-imagining of territory as a collection of discrete things that can be separated out from their environments, rendered into commodities, and sold for profit. The realization of the settler colonial fantasy of an empire of resources awaiting extraction and circulation additionally requires a set of legal and political institutions that make the extraction and circulation of these materials possible. These legal, political, and economic structures are themselves founded upon acts of dispossession and the extinguishment of existing claims to territory and forms of legal and political organization.

Even before the Dominion of Canada assumed jurisdiction over the North West Territories and Rupert's Land, government surveyors fanned out to measure the baselines and meridians that would form the skeletal frame of a continent-wide private property system. Beginning with areas that were deemed either most fit for settlement and agriculture, or where valuable mineral resources were identified, surveyors working on behalf of the Dominion Land Survey swept across the continent, measuring, mapping, and laying out a massive grid of townships, sections, and individual parcels of land, each of which could be precisely located and enumerated. The surveyors moved systematically through these territories, dicing the landscape into discrete blocks and leaving behind standardized plots of land ready to be bought and sold as a commodity, following much the same pattern imprinted by colonial capitalism on socio-ecological landscapes elsewhere throughout the world (Scott 1998; Clayton 2000; Mitchell 2002; Blomley 2004; Harris 2008; Simpson & Bagelman 2018). As Figure 2.7 shows, within 50 years of the Dominion asserting its claims to these lands, most of the territory that is today known as the Western provinces of Canada had been parcelled up into townships in this manner, and a large portion of that land (depicted in orange), including the tar sands regions, had been subdivided further into sections and individual parcels of land ready to be acquired by settlers.⁸ And settlers were never far behind the surveyors.

⁸ On the history of the Dominion Land Survey see Thomson (1967). For more specifics on surveying in Alberta and the Athabasca region see Larmour (2005), and McCormack (2011).

Figure 2.7: Land Survey of Western Canada circa 1919



Source: Government of Canada, Department of the Interior (1920), Annual Report of the Topographical Surveys Branch 1917-18. Sessional Paper No. 25a. Surveyor General's Office.

The Dominion Land Survey, and the grid that it produced, were tools in the state's project of transferring control of land from Indigenous peoples into the hands of settlers. The laying out of meridians and baselines across the continent anticipated a radical trans-continental project of mass-dispossession, reorganizing space in accordance with the sharp lines of private property. Of course, the implications and consequences of this surveying activity did not go unnoticed or unchallenged. Indeed, nearly as soon as Dominion surveyors arrived in the North West in 1869, they were confronted by Métis on the Red River who challenged the state's jurisdiction in the area. The Métis had a well-established landholding system of their own, one that was customary rather than formal, based on people's relationships with one another rather than the abstractions of surveys, meridians, or paper

deeds and titles (J.R. Miller 2000: 200-1). Understanding the threat that the government surveyors posed to their lands and livelihood, the Red River Métis asserted their own jurisdictional authority by ordering the surveyors to immediately leave their territory before they arrested a group of government workers. These actions precipitated the armed resistance against the Canadian state's incursion into the territory which is now remembered as the Red River Resistance.

Following the events at Red River, the Canadian state adopted a new strategy, which was to sign treaties with the Indigenous nations upon whose lands it encroached. Treaty talks in the Athabasca region began in 1899, and the desire to secure control over the region's resources without conflict was among the government's explicit motivations for initiating this process. This motivation was made clear by Canada's Minister of the Interior Edgar Dewdney, who in 1891 recommended that the government pursue treaty negotiations 'with a view to the extinguishment of the Indian title,' noting the 'immense quantities of petroleum as well as [...] other new substances also of economic value' that were believed to exist in the region (quoted in Ray 1999: 12).

What came to be known as Treaty 8 was brought before the House of Commons for debate in 1899. Minister Clifford Sifton affirmed that the treaty was necessary because the native peoples of the Athabasca region did not recognize the Canadian state's claims to sovereignty or authority in the region, and would be willing to defend their lands from settlers if necessary. Sifton stated:

While in the minds of the average citizen of Canada there is no special difference in regard to the jurisdiction by the Dominion Government in respect of any particular portion of Canada [...] [t]he Indian of the North-west Territories knows where the line is which separates the ceded territory from unceded territory [...] beyond which the Government has no right [...] [and] they are quite willing and quite ready to threaten open and deadly hostilities against persons who go there before any treaty has been made with them. [...] For that reason I decided that negotiations for a treaty would have to be undertaken. (Government of Canada 1899: 7502).

During treaty negotiations, Indigenous leaders made clear that they would not sign any agreement with the government that did not guarantee that they would retain control of their lands and be able to continue their hunting, trapping, and fishing practices (Athabasca Chipewyan First Nation 2003: 57). The native leaders affirmed that they would not surrender title to their lands nor accept being confined to limited reserves as they had witnessed happen in other regions colonized by Canada. This message appears to have been understood by the Treaty Commissioners, who reported back the following:

[T]he Indians were generally averse to being placed on reserves. It would have been impossible to have made a treaty if we had not assured them that there was no intention of confining them to reserves. We had to very clearly explain to them that the provision for reserves and allotments of land were made for their protection, and to secure to them in perpetuity a fair portion of the land ceded, in the event of settlement advancing (Laird, Ross & McKenna 1899).

However, many of the terms and conditions to which First Nations of the Athabasca region agreed were never included in the written text of Treaty 8. In some cases, agreements that had been made verbally were omitted from the text, and in other cases the written document included stipulations that were never agreed to, including clauses stating that the native communities would be subject to government hunting regulations (Fumoleau 1975; Athabasca Chipewyan First Nation 2003: 57-9; McCormack 2011: 203-4). Whereas the First Nations communities of the Athabasca region believed Treaty 8 to be an agreement to protect their lands and livelihood, the state interpreted the agreement as the extinguishment of native claims to their territories, thereby lawfully permitting the dispossession of Indigenous lands. Prime Minister Wilfred Laurier effectively described the treaty as such, stating before the House of Commons that with the signing of Treaty 8 ‘we have secured peace in that land, and they have surrendered the territory’ (Government of Canada 1899: 7518).

From the perspective of the Prime Minister and the settler state, treaties were a legal mechanism that could facilitate lawful dispossession, and thereby forward the project of

resource extraction, while circumventing violent conflict by procuring the agreement of Indigenous peoples to ‘extinguish’ their rights to the land peacefully. Of course, as Blomley (2003) states nicely, ‘violence need not be physically enacted to be operative; it can be continually implied’ (130). The implied violence of the Canadian state’s legal apparatus weighed heavily on Indigenous peoples of the Athabasca who refused to cede their lands willingly, and who resisted the incursions of settler colonialism, but had already been weakened by recurrent epidemics as well as the changes in their socio-ecological and economic systems that were introduced by the fur trade.

Treaties became part and parcel of the settler state’s tools of dispossession that made the infrastructures of resource extraction possible. It is no mere coincidence that one of the government’s treaty negotiator, Charles Mair, gazed desirously upon the land as he passed through the Athabasca region signing treaty agreements with First Nations and Métis communities. Mair took particular interest in the resource potential of the tar sands, writing in his journal that:

The tar, whatever it may be otherwise, is a fuel, and burned in our camp-fires like coal. That this region is stored with a substance of great economic value is beyond all doubt, and, when the hour of development comes, it will, I believe, prove to be one of the wonders of Northern Canada. We were all deeply impressed by this scene of Nature’s chemistry, and realized what a vast storehouse of not only hidden but exposed resources we possess in this enormous country. What is unseen can only be conjectured, but what is seen would make any region famous. (Mair 1908: 121-2).

Although treaties between Indigenous and European peoples had previously been agreements of peace and friendship that upheld the legal authority, jurisdiction, and territory of the signatories, and although Indigenous peoples continued to understand their treaties in this way, after 1867 the Canadian state approached treaties as mechanisms of legal and territorial extinguishment.⁹ Far from peaceful agreements or legal protections against dispossession, the

⁹ Many thanks to Jim Tully for helping me clarify this point.

Canadian state employed treaties (much like surveys, and property-making practices) as an institutional mechanisms of dispossession, enforced through the ever-present threat of violence, thereby serving the project of refashioning the tar sands into a “natural” resource that could soon be feasibly extracted.

Conclusion: Rethinking Resource Violence

The refashioning of the Athabasca tar sands as a natural resource belonging to the Canadian nation, a process that began during the second half of the 19th century, was contingent on the disruption of other ways of understanding the human relation to non-human and material worlds, just as it depended on the extinguishment of existing legal and political systems and claims to territory. These conditions of displacement and dispossession were achieved through technologies of governance, including scientific studies, geological surveys, measuring meridians, laying out imperial cartography, signing treaties, imposing property laws, and the making of reserve space. The re-ordering and re-territorialization of the world in accordance with the resource imaginary was inseparable from the settler colonial project.

Colonial-capitalism created resources, in the sense that its institutions created and produced resource knowledge, reconfigured space, and set in place the political and economic structures (property lines, reserves, colonial law, railways, etc.) that made resource extraction possible. And yet, just as the settler colonial state created resources, so too was the settler colonial project propelled and fuelled by resource acquisition, insofar as its constant expansion into new territories was motivated by fantasies of resource production, extraction, and acquisition. Settler colonialism thus made resources just as resources made settler colonialism. The maps and artifacts of the Canadian settler colonial state depicted its desire

to transform the North West into an “Empire of Resources.” This resource-desiring-machine then proceeded to re-order, re-shape, and re-territorialize the land and all existing social and ecological relations in pursuit of this fantasy. However, as the state pursued this vision, re-ordering the world into resources along the way, it also brought into being a new resource-desiring subjectivity, that of the Canadian nation. The resource-desiring-machine of settler colonialism therefore created both the subject and the object of desire.

The example of tar sands bitumen helps to demonstrate that the resource comes into the world through acts of ontological, epistemic, and material violence. What seems to be missing from much of the literature theorizing the relationship between resources and violence is accounts of this constitutive moment of the natural resource, birthed through processes of colonial dispossession, and sustained through ongoing efforts to police and maintain the settler colonial spatio-ecological order. The removal of Indigenous people from their lands and waters involved clear cases of violence applied directly to Indigenous bodies. But, drawing on the work of geographers and other theorists of violence, we must also consider the role played by less immediately visible forms of violence, including the threat of violence (Blomley 2003), and the acts of ‘slow violence’ which produce harmful and traumatic impacts that only become apparent over lifetimes or generations, ‘unfolding over years, decades, even centuries’ (Nixon 2011: 3). As Simon Springer and Philippe Le Billon (2016) note, violence sometimes ‘comes in the form of an overt appearance, where we can easily recognize its horrifying effects and deadly consequences [and] [i]n other instances it is hardly recognizable at all, hidden beneath ideology, mundanity’ (1). While colonial violence does involve innumerable instances of direct physical harm enacted upon the bodies of Indigenous peoples, it also employs even more subtle and insidious forms of violence that

harm the spiritual, psychological, emotional, and cultural well-being of entire people (Fanon 1991; Watts & Peluso 2001; Le Billon 2012; Coulthard 2014; Springer & Le Billon 2016). Consider, for instance, the violence of colonial-induced ecological changes that disrupt and destabilize Indigenous food systems and cultures (Whyte 2017a), the inter-generational trauma that has resulted from the separation of Indigenous families by residential schools, and systemic policies of cultural genocide that included prohibitions against the use of Indigenous languages and spiritual practices (Truth and Reconciliation Commission 2015; See also: Miller 1989; Manuel 2015). Foregrounding the ‘slow,’ or intergenerational, harms of colonial dispossession helps to illustrate that violence is not limited to specific moments in time, but rather it unfolds through ongoing processes over time (Springer 2011; Tyner 2016a, 2016b).

Thinking about violence as the constitutive condition of the resource in this way offers a different way of thinking about this relationship between resources and violence. Rather than asking whether or not resources lead to violence, or whether violence is incidental to resources, we might think of the *resource as violence*, emphasizing the latent or embedded violence that is always already inherent in the category itself. It is the violence of institutions such as the state and property that make possible and sustain this category (Blomley 2003). Moreover, even to gaze upon the world through a resource lens enacts a certain form of ontological and epistemological violence, as it is to imagine that world torn apart from all its existing social and ecological relations. Re-conceptualizing the relationship between resources and violence in this way helps us to see that so long as we continue to see the world through the lens of the resource imaginary, we will continue to uphold the structures of violence which are this imaginary’s conditions of possibility. The solution to

resource violence is therefore not to find the correct redistribution or regulation of resources, so much as it is the dismantling of the category of resources altogether, as well as all the infrastructures that sustain this category. Of course, this radical refashioning of the world in accordance with the resource imaginary has not gone uncontested. Just as colonial violence remains ongoing, so too is opposition to the colonial present. Cree, Dene, and Métis peoples in the Athabasca region and elsewhere continue to resist the settler colonial state's incursions and to take measures to protect their lands and livelihoods from the colonial resource-desiring-machine, as exemplified by the struggles against tar sands extraction and pipeline infrastructures today.

Recently, in Canada, there has been much talk about the importance of seeking reconciliation between Indigenous peoples and the Canadian state. Prime Minister Justin Trudeau stated early in his term that '[n]o relationship is more important to our government and to Canada than the one with Indigenous peoples' (Trudeau 2016). And yet, simultaneously, the systematic extraction of resources such as the tar sands from Indigenous lands and waters continues apace with no signs of relenting. So we might ask, how does one "reconcile" with a resource-desiring-machine when this resource-desiring-machine is also an elimination-machine, premised upon one's own extinguishment (Wolfe 2006)? So long as we accept the continued logic of the desiring machine itself, then reconciliation requires one to either become a part of the machine (assimilation), or accept the fate of one's own extermination (genocide). Each are consistent with the logic of elimination. However, if neither of these options are deemed acceptable, then we must conclude that it is the resource-desiring and settler colonial elimination-machines – both their worldviews and logics of governance – that must be dismantled (decolonization).

Chapter 3 - Speculation, Extraction, Reclamation:

Three Accumulative Circuits of Nature-Production in the Tar Sands

As discussed in Chapter 2, the Canadian state has long coveted tar sands bitumen. Early settlers and state agents fanaticized about the wealth that they would one day generate upon extraction. When passing through the region in 1908, treaty negotiator Charles Mair remarked that there was no doubt that the tar sands would become ‘a substance of great economic value’ when ‘the hour of development comes’ (Mair 1908: 121). The Canadian government made efforts to develop and extract these resources beginning in the late 19th century and continued to do so throughout the 20th century (Bellows & Bohme 1963; Chastko 2004). However, it was not until the mid-1990s that this region experienced a bitumen boom. Enormous sums of capital flooded into the region almost overnight and production followed suit, rapidly transforming the landscapes and ecosystems of the Athabasca. Annual investment in the region continued to increase for nearly 20 years, until just recently when capital began to vacate nearly as quickly as it had arrived. By 2015, the *New York Times* declared that the tar sands boom had ‘dried up’ (Austen 2015).

This chapter begins by trying to make sense of this bitumen bonanza of the 1990s and early 2000s. If the settler colonial state had already identified the tar sands as a site of great economic importance over a century earlier, then why did the ‘hour of development’ strike only relatively recently? Why did the extractivist impulses of settler colonialism and global capital leave the boreal forests and peat bogs of the Athabaskan region relatively undisturbed, held in a state of standing reserve, for most of the 20th century, before capital poured into the

region? How might we explain why the extraction of this material became a political and economic imperative at this particular historical moment? And likewise, after two decades of rampant and unbridled extraction, why have some of the major players in the global oil and gas industry quickly packed up shop and relocated elsewhere over the past several years? Perhaps the larger question here is, what are the logics that govern where and when capital strikes down in certain spaces at certain moments, and radically reshapes socio-ecologies? How might we understand the spatial and temporal rhythms of investment and resource extraction under conditions of global capital? Spatially, I want to think about how capital creates uneven, variegated landscapes by extracting in some spaces while leaving others in an ongoing state of standing reserve. Temporally, I want to ask what explains the order in which lands and resources are extracted, exploited, and rendered commodities.

In pursuit of answers to these questions, I begin by considering two common explanations for the recent escalation in tar sands investment and extraction. First, I consider the peak oil thesis which contends that as conventional oil sources are gradually depleted, the cost of oil rises thereby making unconventional extraction (such as deepwater drilling, fracking, or the open-pit mining that we see in the tar sands) more profitable. Here, I problematize this peak oil argument on the grounds that it tends to reduce oil reserves to a biophysical object rather than treating reserves as a political and economic construct. The peak oil thesis thereby relies on, and reproduces, problematic Malthusian narratives grounded in assumptions of resource scarcity and population growth. Next, I consider what I call the argument from technological development, which asserts that recent technological innovations can explain Alberta's bitumen boom. In turn, I reject the suggestion that this

explanation is sufficient to adequately account for the timing of either Alberta's bitumen boom or its more recent bust.

While neither of these previously mentioned explanations are necessarily entirely wrong, I argue that they overlook the important role played by the political-economic conditions of global capitalism, which results in a structural proclivity of the oil industry towards alternating crises of oversupply and undersupply (Labban 2008; Zalik 2015a). In order to sustain accumulation in these unstable and unpredictable conditions, oil producers must find ways to easily shift capital investment and production from one site to the next. Securing a diversity of sites of potential oil production provides more options for capital switching in response to constantly shifting conditions of global markets (Zalik 2015a). Diverse sites of oil extraction worldwide are thus knit together as part of what Hannah Appel, Arthur Mason, and Michael Watts (2015) call the global 'oil-assemblage' – a worldwide network of 'lines, axes, hubs, spokes, nodes, points, blocks, and flows' (22), as well as the vast 'variety of actors, agents, infrastructures, processes, and imaginaries that give shape to our contemporary iteration of hydrocarbon capitalism' (24). It is not just oil but also capital investment that flow through these different sites of oil production worldwide. Describing these sites as part of an 'assemblage' underscores the importance of understanding any one site of extraction, such as the tar sands, as not simply a discrete location but rather one that is metabolically connected to other sites of fossil fuel extraction worldwide (see also Le Billon & Sommerville 2017).

As market prices of the commodity fluctuate, capital moves across the global hydrocarbon commodity chain (Bridge 2008: 394), investing in different infrastructures of fossil fuel extraction, processing, and distribution. However, in order for this movement of

capital between different oil reserves and sites of potential extraction to be possible, land must first be rendered ‘investible’ and investments ‘landable’ (Le Billon & Sommerville 2017). In other words, market conditions must be established and must be structured so that they favour capital accumulation by investors. Regionally, states and other jurisdictions compete to attract capital from other sites within this oil assemblage by creating the most favourable conditions possible for investment in future accumulation (Bridge 2008; Coe & Yeung 2015). I will argue that the neoliberalization of tar sands industries beginning in the 1990s (Preston 2013; Adkin 2016a; Carter 2016) can be seen in precisely this way – as an effort of the governments of Alberta and Canada to make tar sands extraction more profitable by reducing royalties and environmental regulation, and thereby attract capital investment into the region. As Mazen Labban (2008) notes, when we consider how changing political economic conditions determine where and when capital invests in oil production, the relative scarcity or abundance of oil thus becomes a socio-spatial question, not a purely biophysical one as is suggested in some crude formulations of the peak oil thesis.

In the second part of this chapter, I move on to consider what types of “natures” are produced by this movement of capital as it enters and then retreats from different sites of production, at different timescales, circulating throughout the global oil assemblage. I ask how space is ordered in specific ways that enable this circulation between sites of accumulation, and what impacts these movements of capital have on socio-ecological relations. In the case of the tar sands, I identify three distinct but inter-related spaces of nature that are produced by these circuits of capital accumulation. First, I consider how capital moves in and out of *spaces of extraction*, producing bitumen that can then be shipped and sold on global markets, while also producing denuded landscapes, toxic contaminants,

and massive industrial infrastructures. Second, I consider *spaces of speculation* – spaces in which oil companies invest to increase their reserve holdings, and from which they can accrue value without even needing to extract bitumen. Reserves derive their value not directly from the actual process of extraction, but from the probability or likelihood that they may become a site of extraction at some point in the future. Legal rights to these spaces are bought and sold as their own commodity, somewhat independent of the physical material of oil itself, creating a separate circuit of accumulation that operates as a speculative oil futures market. These spaces are managed, measured, and governed in ways that produce socio-ecological landscapes that are distinct from those produced in spaces of extraction. Third, I consider *spaces of reclamation*. These are the spaces from which extractive activities have moved on, but which then become a new site or frontier of investment and profit generation through ecological restoration activities, producing yet another entirely novel set of socio-ecological formations.

While each of these circuits of accumulation are unique, and produce distinct socio-ecologies, each nevertheless performs integral functions for the extractive industries in the tar sands on the whole, and can thus be understood as metabolically interdependent and co-constitutive spaces. For instance, while investors can profit from reserve spaces by treating them as a type of speculative investment, they also serve as a type of spatial-temporal fix for the extraction industry. Oil reserves attract investors by promising future rounds of accumulation. Similarly, while there is money to be made performing ecological restoration activities in spaces of reclamation, these spaces also provide a type of ‘sustainability fix’ (While et al.) for oil companies, by internalizing the ecological damage that extraction causes within the accumulation process and thereby giving oil companies grounds upon which to

counter social and environmental critics. What results is not a singular landscape of extraction, but rather a variegated and heterogeneous landscape consisting of different spaces and socio-ecological formations, each of which serve the accumulation process in unique ways and at different spatial and temporal scales.

Anna Zalik (2015) observes that while geographers have demonstrated how circuits of capital produce uneven urban environments, less attention has been granted to the way that these processes produce variegated spaces of resource extraction. When we begin to carefully investigate the socio-natures that are produced by extractive activities in the tar sands, it becomes quickly apparent that they extend far beyond what Gavin Bridge (2009) calls the ‘hole in the ground’ (Bridge 2008, 2009; Labban 2014; Le Billon & Sommerville 2017). In the case of the tar sands, while much attention has been directed towards the sites of extraction (see for instance Burtynsky et al. 2009; Mettler et al. 2010; Lenz 2011; Grossman & MacLean 2014), other spaces produced by tar sands industries that are related to the accumulative processes have received less attention. This chapter seeks to take a small step towards correcting this by attending to the diverse spaces that capital relies on in order to continue extraction, circulation, and accumulation. By doing so, I also want to suggest that we cannot think of “neoliberal nature” as a singular space or location that is produced and reconfigured by neoliberal re-regulation. Rather, we must begin to think about how multiple but contemporaneous and connected circuits of accumulation operate in different spaces and at different temporal rhythms, producing new natures or socio-ecological formations that are distinct yet metabolically dependent.

Three Explanations for the Bitumen Boom

In June 2004, the cover story in *National Geographic Magazine* warned of the impending ‘End of Cheap Oil,’ reporting that throughout the world, dependable sources of free-flowing, easily accessible crude hydrocarbons were becoming increasingly scarce. Following in the tradition of those who have forecasted the imminent moment of “peak oil” since Marion King Hubbert in the 1950s, the article suggested that, soon enough, the flow of conventional oil sources would reach their apex of production, and gradually diminish thereafter. The article predicted that once production begins to decline, the amount of energy and investment required to extract each barrel would inversely rise, and so too would the cost of oil. Moreover, it reported that even as the old sources of easily accessible cheap oil ‘can’t be counted on anymore,’ the global thirst for hydrocarbons showed no sign of slowing down. Consequently, *National Geographic* predicted that ‘Humanity’s way of life is on a collision course with [...] the stark fact that the Earth holds a finite supply of oil.’

However, *National Geographic* also reported that the industry had foreseen this collision course and, in attempting to stave off the descent towards depletion, had made ‘a desperate push to wrest oil from unconventional sources’ such as deepwater reserves, tight shale deposits, and perhaps most notoriously, Alberta’s tar sands. As a consequence of the shrinking supply and seemingly insatiable demand for oil, the price of oil had been driven upward, which in turn made extraction from these expensive and marginal oil sources economically viable for the first time. The physical depletion of oil was pushing extraction to new frontiers. Indeed, the article noted that Alberta’s tar sands had previously not even been counted as part of the world’s existing oil reserves because there was no way to extract it

without taking a loss, but with prices over \$50 per barrel, Canada had suddenly become an oil reserve superpower.

The peak oil narrative, which dates back as far as the 1950s and attracted attention in the 1970s, experienced a renaissance during the first decade of the 2000s.¹⁰ The discourse circulated widely, resonating with environmentalists, government officials, and oil companies alike (Bridge 2010). Notably, while many took up the peak oil call, it was employed in pursuit of different objectives and led people to remarkably different conclusions and prescriptions. Among environmental movements, the concept spoke to the general angst of what was perceived as impending economic and ecological collapse, as well as impulses to reduce ecological footprints and seek out alternative energy and alternative lifestyles that could forestall or evade this collapse. Groups such as Transition Towns and the Post Carbon Institute were leaders among these movements beating the peak oil drum barrel. Governments heeded the warnings as well. A 2005 United States Department of Energy Report written by senior energy advisor Robert Hirsh and colleagues warned of the ‘extremely damaging’ consequences were predictions of peak oil to prove veracious, and advised that governments pursue contingency plans such as investment in ‘substitute fuels’ such as the tar sands, in order to mitigate peak oil’s effects (6). Even some oil companies took up the peak oil call in the interest of justifying the expansion of oil extraction horizons and the opening of new frontiers of accumulation (Bridge & Wood 2010). The idea that society was rubbing up against production and consumption limits spoke to both the

¹⁰ See, for instance: Deffeyes (2006) *Beyond oil: The view from Hubbert's peak*; Kunstler (2007) *The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century*; Heinberg (2005). *The party's over: oil, war and the fate of industrial societies*; Lerch (2017) *The Community Resilience Reader: Essential Resources for an Era of Upheaval*; Greene, Gregory (2004). *The end of suburbia*; Gelpke & McCormack (2006). *A Crude Awakening*.

economic imperatives and cultural sensibilities of the moment, so much so that the narrative spread quickly from oil to other resources. Commentators, journalists, scientists, and other pundits began to speak of not only peak oil, but also peak soil, peak water, peak minerals, and indeed peak everything.¹¹

In recent years, however, the peak oil narrative seems to have lost its luster within popular discourse. One reason for this could be that the prophesy of a peak moment, when the wells run dry and industrial production grinds to a halt, has not delivered on its promises. Efforts to model oil supply curves and the approximate date of the peak oil crisis have been routinely re-calculated, modified, and adjusted as each year passes without any clear indications of the predicted signs, symptoms, or consequences. This points to the great difficulty of accurately measuring, modeling or predicting the future supply, demand, or price of oil. But, it also points to a fundamental shortcoming of the peak oil thesis itself – that it is premised on the assumption that oil supply and its price are direct reflections of the absolute quantity and volume of the biophysical resource that exists in nature, and the extent to which this resource has been physically depleted. While theorists of peak oil concede that new oil reserves are frequently discovered and can therefore grow as well as deplete, they contend that the volume of these new reserve findings is also peaking. New discoveries tend to be smaller and more expensive to find or access than those discovered in the past, suggesting that depletion looms on the horizon.

There is a distinct Malthusian logic of resource scarcity underlying the peak oil narrative. A rising global population and rising demand are taken as a given, as is the finitude

¹¹ See for instance, Ahmed (2013); Gleick & Palaniappan (2010); Prior et al. (2012); Heinberg (2010). Several decades earlier, the 'Limits to Growth' report of 1972 commissioned by the Club of Rome came to similar conclusion regarding global supply of resources.

of resources. Under these circumstances, it is reasoned that resources are bound to run out at some point, and according to some we have already begun the ‘long descent’ towards global resource depletion (Greer 2008). However, while the depletion of non-renewable resources such as fossil fuels is always a real possibility, a major flaw in the peak oil argument is that it tends to reduce and equate condition of resource scarcity to depletion, when often scarcity is a product of political and economic structures. As Jason Moore (2015) writes, ‘depletion is not everything [...] the geography of depletion is important, but scarcely determining. Since 2000, the high price of oil has surely been conditioned by geological realities that have propelled rising exploration and production costs. But these do not stand alone.’ Indeed, the suggestion that the price and supply of oil is reflective of proven reserves, and that reserves are a direct measurement of a fixed and finite quantity of a physical material existing in nature, does not account for the ways that reserves are social, political, and economic constructs as much as they are physical or material objects. As Gavin Bridge (2010) states, ‘peak oil is predominantly a discussion about below-ground geographies,’ but this discussion has a pervasive tendency to overlook the ‘above-ground factors’ that govern oil prices, investment, and production (527). Geopolitical struggles between nation states, the political priorities or ideologies of specific governments, trade agreements, military alliances, the role of transnational institutions, the circulation of financial capital – each of these contribute to determining oil supply, cost structures, taxation rates, and ultimately prices and spaces of production (Bridge & Le Billon 2017). Governments, oil producers, energy and securities regulators, and cartels such as OPEC routinely add or remove sources of actual physical oil from the global supply of proven reserves, which can be either expanded or contracted for specific strategic purposes. Likewise, demand for oil does not necessarily grow steadily, but

tends to fluctuate and is especially prone to decline when prices are high and consumers seek alternative energy sources or more fuel-efficient practices or technologies (Labban 2008: 3). In short, there are many factors aside from the quantity of the physical material in the ground that determine oil's availability and price structure. Theorists of peak oil tend to overstate the degree to which the accessibility and availability of oil can be explained by physical depletion. It follows that the rise of unconventional oils may not be indicative of a last ditch effort to scrape at the bottom of the planet's geophysical oil barrel, so much as it is the product of dynamics of global political economy.

A second common explanation for the sharp rise in tar sands extraction is what I will call the argument from technological development. Simply put, this narrative, which is commonly presented by the oil industry and its advocates, suggests that recent technological advancements have rendered tar sands bitumen accessible and economical, allowing it to be extracted and exchanged as a profitable commodity, and this explains the bitumen boom of the past two decades. As one promotional website funded by the Canadian Association of Petroleum Producers (CAPP) reads:

the oil sands [...] are a bit more complicated to extract from, compared to conventional oil. The oil is mixed with rock, sand and other substances, so it requires special technology for extraction. Fortunately, this technology is well-developed and the industry can now produce oil from the oil sands much easier (CAPP 2015).

This narrative of technological development is also one of the themes that runs through Paul Chastko's (2004) history of the tar sands, which states that until recently, 'very few people possessed enough technical knowledge to make the development of the oil sands even a remote possibility' (4). The pro-industry magazine *Alberta Oil* has referred to the tar sands as 'technological oil' (Thompson 2014) because without technological innovations it would not ever have been accessible nor considered part of global oil reserves. Proponents of the

technological development explanation will thus agree that reserves are not fixed or stable because progressive technological developments can always find ways to extract oil from places that were not previously accessible. As *Alberta Oil* magazine explains, each time the world has approached peak oil production, a new technology has been developed by the industry that has allowed it to transcend existing physical limitations and produce more oil:

Innovation was needed to overcome the world's dependence on declining conventional oil reserves. Unconventional sources like tight shale deposits and the oil sands called for radically new extraction methods [...] [S]cientific advances made in the past 10 years have led to a proliferation of unconventional production in North America, opening reserves many times larger than what was available in Hubbert's time. (Thompson 2014)

The article quotes Soheil Asgarpour, president of the Petroleum Technology Alliance Canada, who stated that, 'You are going to end up always overcoming [any limitations] so you never really reach a peak.' This explanation thus affirms an underlying story about faith in the ability of capitalist innovation and the progressive development of technology to overcome any biophysical limitations presented to oil production or to economic growth more generally (Shiva 2010).

However, a major shortcoming of this explanation is that the technologies used for tar sands extraction and upgrading have existed, and have been in operation, for decades prior to the bitumen boom of the 1990s and early 2000s. Karl Clark built a small separation plant at the University of Alberta in the 1920s. The first commercial operations began in the 1930s, and by the 1960s large-scale mining facilities were built by the Great Canadian Oil Sands Company, which began operating at a production capacity of over 30,000 barrels per day. Syncrude opened its first facilities in 1978 and began producing an additional 100,000 barrels per day (see Ferguson 1985; Chastko 2004).

In-situ extraction technologies have been more recently developed. This technique is used to obtain bitumen from tar sands found at depths that cannot be profitably accessed by

surface mining. It involves drilling wells into the earth and injecting high pressured steam into the ground, which separates the bitumen from the sand in place and forces it up a well. Bitumen extracted from the tar sands using in-situ techniques has gradually increased as a proportion of total extraction, and surpassed mined bitumen extraction for the first time in 2013. Some of this growth could be attributed to improved technology, such as the steam-assisted gravity drainage (SAGD) technique involving the drilling of horizontal wells, which were used commercially for the first time only in 2001. However, in-situ extraction has been a commercially viable technology since the 1980s when Imperial Oil began to use the vertical cyclical steam stimulation method at Cold Lake, which produced over 100,000 barrels per day on average throughout most of the later half of the 1980s (CAPP 2016). So, while technological developments are arguably a necessary condition for the expansion of tar sands industries, on their own they offer an insufficient explanation for the 1500% increase in capital investment in tar sands extraction. Further, even if technological development could adequately explain the surge of investment over past decades, this explanation fails to explain the even more recent contraction in tar sands investment.

Rather than hanging explanations of Alberta's bitumen boom on arguments about peak oil or technological development, I want to draw on the work of scholars who can help us to understand this as a consequence of changes in global political economy over recent decades, and the structural conditions of the oil economy itself. The political economy of oil is highly complex and difficult to wrap one's mind around. Indeed, in the introduction to their edited volume *Subterranean Estates*, Hannah Appel, Arthur Mason, and Michael Watts (2015) note that trying to study, understand, or explain the global oil economy is enough to trigger 'intellectual vertigo.' Not only is oil shrouded in secrecy, but it also exhibits a

startling degree of inexactitudes and ‘resistance to calculability’ despite being highly scientific and technical. Even basic questions such as how much oil is being produced, how much of it exists in the ground, where it comes from, and its market value can only ever be approximated with a remarkable imprecision (Appel et al. 2015). Even on the scale of the Alberta tar sands alone, the infrastructure and logistics required to produce bitumen, and to then upgrade, refine, and transport it to market, is immense.

It is the mobilization of capital that makes these projects possible, yet the mobilization of capital investment and its movement from one location to the next is itself perplexing. Volatility in the price of oil can lead to rapid changes in cost structure, amortization, and firm size, and can ultimately influence whether or not investment continues to sink into a committed site, or is withdrawn, retracted, and re-committed to the extraction of a different resource in a different part of the world. Price fluctuations themselves can be caused by any number of factors, including expanded or contracted supply by cartels, confidence in the US dollar, changes in tax codes or environmental regulations, international accords, conflict or warfare, ecological catastrophes, social uprisings, technological change, or the rise of alternative energies, just to name a few (see Le Billon & Cervantes 2009; Bridge & Le Billon 2017). More often than not it is impossible to parse out exactly which factors are responsible for specific changes in the market price of oil. To make things even more confusing, changes in the price of oil have increasingly become susceptible to following the price signaling of speculative trade in oil futures rather than reflecting the market fundamentals of supply and demand and the actual availability of oil as a physical commodity (Labban 2010). According to *Oil Sands Magazine* (2017), around 15% of fluctuations in the price of oil are caused by speculative trading. But, even while there may

be no clearly discernable rhyme or rhythm to changes in the market price of oil, nor any clear spatial logic to the patterns of investment, these periodic shifts have massive ramifications for social and ecological geographies and the production of spaces worldwide.

However, when we step into the vertigo of the oil economy's complexity, it becomes clear that no one site can be treated in isolation from the others. Global sites of oil production, in all their diversity, are inter-related as part of what Appel et al. (2015) describe as a vast 'oil-assemblage,' each part of which acts upon and co-constitutes each other. As they describe, the oil assemblage consists of 'a landscape of lines, axes, hubs, spokes, nodes, points, blocks, and flows' (22), but also incorporates a vast 'variety of actors, agents, infrastructures, processes, and imaginaries that give shape to our contemporary iteration of hydrocarbon capitalism' (24). I want to argue that the spatial diversity and complexity of the oil assemblage is actually a vital structural feature of the oil economy under global capitalist conditions, which allows production and accumulation to remain ongoing (see also Le Billon & Sommerville 2017).

Mazen Labban (2008) argues that the oil economy under capitalism is structurally prone to oscillating between crises of overproduction and underproduction. In general, producers tend towards overproduction, simply because the massive investment in fixed infrastructure expenses required to produce oil and bring it to market necessitate large-scale production to ensure profitability. However, this tendency towards overproduction can also limit profit in moments when there is a glut of oil on the market, causing prices to fall. Low prices, in turn, require companies to restrict production, and manage or constrain supplies. Herein lies the structural tension – if supply becomes too constrained and prices and profits remain high, then the surplus capital generated must now find new sites for investment in

order to ensure that this accumulation continues. Unconventional oil sources (such as the tar sands) become obvious candidates for the reinvestment of profit because higher oil prices also make these more expensive forms of extraction appear economical. Applying the language of David Harvey, we could say that investment in unconventional sites of oil production provides a spatial fix for capital, providing an avenue to escape from a pending crisis in overaccumulation. However, herein lies the rub – once these new frontiers of investment come online, production and supply increase, causing prices to decline, thereby rendering investments in these high-cost spaces of extraction unprofitable, causing the subsequent retraction and relocation of capital investment, and leaving fixed assets temporarily stranded.

This wavering between conditions of overproduction and underproduction of the global oil assemblage helps to explain both the massive investment in the tar sands during the 1990s and 2000s, as well as the divestment experienced in recent years. In moments of underproduction and undersupply, when the price of oil is high, the tentacles of the oil assemblage begin to expand into new frontiers of accumulation. In some cases, these new frontiers are accessed forcefully through acts of conquest and colonization of non-capitalist spaces, creating new resources that can be released into circulation in the global capitalist economy and exchanged as commodities (Marx's primitive accumulation, or Harvey's accumulation by dispossession). However, in cases where spaces have already been colonized by the capitalist economy, this surplus capital investment must be competed for between the governments and regional jurisdictions within the capitalist economy (Labban 2008).

As Neil Coe and Henry Wai-Chung Yeung (2015) describe, in the global capitalist economy regions compete to capture value and reinvestment within their territory. As they describe, '[t]he most crucial determinant of development outcomes becomes the ability and capacity of these actors and related institutions to retain and/or capture these surpluses' (37). Ultimately, it is this aggregate value capture that determines economic development in particular territories (Coe & Yeung 2015: 166). Consequently, within the global capitalist economy, nation states and regions within these states compete to create the most investor-friendly conditions and thereby attract a greater share of surplus investment. As Anna Zalik (2015) writes, 'state jurisdictions compete with one another as sinks for accumulated capital, [...] further subsidizing industry as a whole through a race to the bottom in regulations and royalties' (2452). This competition for capital investment in the tar sands helps to explain the transformations in Alberta's oil economy during the 1990s and 2000s, which ultimately enabled the bitumen boom.

For much of the first century of its development, the extractive industries in the tar sands was led by federal and provincial governments and driven by the investment of public monies (Chastko 2004; Davidson & Gismondi 2011). The federal government began funding experimental extraction endeavours as early as the 1890s (Ferguson 1985: 20-1). In 1912, the government placed the tar sand lands under Crown ownership. As explained by Barry Glen Ferguson, mining leases were restricted to Canadian and British firms, and even these firms remained 'explicitly subordinated to the government's right to expropriate lands and equipment' (Ferguson 1985: 20-2). Beginning in the 1920s, numerous plants were built with public funds to separate bitumen from the tar sands. This provincial and federal government investment in research and development of the tar sands continued well into the 1980s. As

stated by Ferguson, in the mid-1980s ‘the amount of research [in the tar sands] undertaken by the government agencies alone is significant’ (10).

In addition to providing large subsidies for the research and development of new and more efficient extraction technologies, the state was also actively involved in regulating the tar sands throughout most of the 20th century with the intention of ensuring that the regions across Canada would benefit economically from this industry’s development. As Patrick Brethour sums up nicely, ‘For most of the oil industry’s existence, governments across Canada treated this nation’s deposits of oil and natural gas as a public resource, one to be exploited for the benefit of citizens’ (Brethour 2005: 13). Indeed, federal policies, such as the National Oil Policy in the 1960s and 1970s, and the National Energy Program of the 1980s, were intended to strengthen the national economy by limiting oil imports, redistributing profits by taxing oil producers, and introducing price controls in order to literally fuel domestic industrial development. This approach of developing the tar sands as a highly regulated and publicly financed national industry with the intention of strengthening the domestic economy across the country was in keeping with the Fordist model of economic development, which emphasized domestic markets and was the dominant mode of political and economic thinking in capitalist regions of the world at that time and throughout much of the 20th century.

By the 1980s however, the state’s role in tar sands development and the energy sector underwent decisive change. After coming to power in 1984, Prime Minister Brian Mulroney’s government dismantled the National Energy Program and ended price controls on oil. Rather than prioritizing domestic investment and markets, the federal government began to actively recruit foreign investment in the tar sands. The Free Trade Agreement

signed with the United States in 1988 guaranteed US investors access to the Canadian energy sector (see Chastko 2004: 199-202). In Alberta, the government embraced neoliberal deregulation of the tar sands wholeheartedly following the ascension of Ralph Klein as provincial premier in 1992. Klein overhauled the industry's governance, creating investor-friendly conditions that would assist corporations in their pursuit of profit, which he branded as the 'Alberta Advantage' (Chastko 2004). This parallels a general shift in the structure of the oil industry worldwide away from an emphasis on capturing rent via royalties, and towards creating conditions that would attract investment (Bridge 2008: 406). The Klein government reduced royalty payments to a mere 1% for tar sands projects until they recouped their start-up investments (see Chastko 2004; Davidson & Gismondi 2011: 82-83; Campanella 2012; Adkin 2016a). Angela Carter and Anna Zalik (2016) note that this rent structure encouraged oil companies to constantly reinvest in projects in order to avoid recouping fixed capital investments and thereby continuing to qualify for the low royalty rates. Laurie Adkin (2016a) notes that 20 new tar sands projects were initiated the same year this new royalty regime took effect in 1996, as investment in the oil and gas sector surged 16% (88). In the decade prior to the introduction of the new royalty structure, capital expenditures in the tar sands averaged \$0.7 billion per year, whereas this increased to an average of \$5.9 billion per year on average in the decade that followed. The Athabaskan region received a massive injection of private capital investment following Premier Klein's restructuring.

In addition to reducing taxes and royalties, Klein also undertook immediate action to eliminate the province's \$3 billion deficit and \$20 billion debt, slashing the provincial budget by \$700 million dollars during his first year in office (Chastko 2004; Stefanick 2015a; Adkin

2016a). These debt payments were financed through massive spending cuts across all government programs and ministries. The government sold off assets, including the provincially-owned energy company Encana (Adkin 2016c; see also Stefanick 2015a). Alberta's Ministry of Environmental Protection was gutted, losing 17% of its budget between 1996 and 1998 (Adkin 2016a: 88). Laurie Adkin notes that these cuts forced the ministry to downsize its staff, resources, and infrastructure just as new projects were coming online and with demands for assessment and monitoring increasing exponentially. This hollowing out of the Ministry of Environment rendered it operationally ineffectual, unable to 'even collect scientifically intelligible data on the effects of oils sands exploitation, let alone rein in the pace of development or to require higher standards of performance regarding such problems as greenhouse gas emissions, the storage of tailings, or land reclamation' (Adkin 2016a: 102). Effectively, the Ministry of Environmental Protection was stripped of its capacity to adequately perform its responsibilities just as investment in tar sands developments was ramping up and industrial activity increased (see also Carter 2016).

Following this initial rollback of corporate royalties, government spending, environmental regulation and monitoring, Ralph Klein's government proceeded to roll-out new industry-friendly regulations and spending intended to promote the tar sands industry (Peck and Tickell 2002). Adkin (2016a) notes that after the initial years of spending cuts to Alberta's Ministry of the Environment throughout the 1990s, the Ministry's budget rose again in the 2000s. However, rather than reinvesting in the staff and infrastructure needed to enforce environmental regulations, the government allocated these new funds to the Ministry for the purposes of public relations and communications, so that the Ministry of the Environment could more effectively defend and promote the tar sands industry from its

increasingly vocal critics worldwide (Adkin 2016a). The government also rolled-out a new energy regulator tasked with monitoring the tar sands that was funded by the oil and gas companies themselves and chaired by a founder of the industry's most powerful lobby group, the Canadian Association of Petroleum Producers (Adkin 2016a; Stefanick 2015a). This appointment followed a more general trend of regulatory capture in the province, where the government routinely began to conflate the interests of the oil industry with the public interest (see Stefanick 2015b).

The state has therefore been active in the development of the tar sands throughout the 20th century and up until the present day. Despite Ralph Klein's affirmations that 'the government should be getting out of the business of being in business,' (Young 2013), and that 'the last thing we want to be is an intervensionist government' (quoted in Nikiforuk 2010: 28), his neoliberal government was actively involved in shaping and regulating markets in very particular (although sometimes less visible) ways through mechanisms such as offering tax and royalty cuts, privatizing public assets, encouraging foreign investment, altering environmental codes, and spending public funds to promote and subsidize the tar sands industry. The role of the state in tar sands development was repurposed in the transition from a Fordist-era to a neoliberal economy, but the state never disappeared. As various economic geographers have pointed out, neoliberalization should be understood not as de-regulation but rather as a very intentional project of re-regulation, through which markets the circulation of capital are constructed and directed differently (Peck & Tickell 2002; Harvey 2005). This point is certainly evident in the case of the neoliberalization of the tar sands.

This project of creating the investor-friendly conditions branded the "Alberta Advantage" served the project of rendering the tar sands lands 'investible' and investments

‘landable’ (Le Billon & Sommerville 2017: 215), and it seems to have succeeded. Capital expenditures in tar sands extraction began flooding into the province following the introduction of the new royalty regime incentivizing new projects in 1995, growing more than twofold in the first year and tenfold by end of 2001. Approximately \$12.5 billion in capital expenditures were invested in the tar sands during the first thirty-eight years of industrial operations, from 1958 through to the end of 1995. This nearly doubled over the following five years with \$11.3 billion in capital expenditures spent in the tar sands between 1996 and 2000 alone. As the price of oil on world markets increased substantially during the first decade of the 2000s, remaining consistently over \$50 a barrel for a decade beginning in 2004, the rate of capital investment in the tar sands continued to grow. In 2006 alone, \$14.3 billion in capital expenditures was invested in the tar sands. This rate of investment would nearly double again, reaching an all-time high of over \$33.8 billion in 2014.

With high oil prices and the oil industry generating massive profits, the tar sands acted as a massive sink into which accumulated surplus capital could be dumped and absorbed into capital-intensive megaprojects, such as upgrading facilities, refineries, pipelines, harbors, as well as all the urban infrastructure, such as roads, houses, and hospitals in local ‘boomtowns’ like Fort McMurray, which make the social reproduction of tar sands labour possible (Brenner 2013). The tar sands acted as a repository for massive amounts of surplus capital and offered promises that this capital would bear profits in the future, providing a massive spatial and temporal fix for capital and the oil industry. Spatially, this massive influx of surplus capital produced new landscapes of investment and frontiers of extraction. Temporally, it set in place the infrastructure required to ensure future rounds of profitable accumulation. The royalty structure introduced by Ralph Klein’s government

incentivized companies to perpetually invest ever more capital into new developments in order to keep rates low. These fixed investments could then be amortized by the companies, paid off gradually over many years of successful production.

In sum, the development of sites of unconventional oil extraction such as the tar sands cannot be attributed strictly to the physical depletion of oil in the world, nor to the progressive development of new technologies of extraction. Rather it is reflective of the need of the global capitalist economy to ensure that investments can easily switch to and from diverse spaces of oil production in response to structural oscillations between oversupply and undersupply of oil. Seemingly always on the precipice of an economic crises precipitated by its own inherent instability, the global capitalist oil assemblage must ensure that cycles of accumulation resume by creating as many potential “fixes” or pathways and circuits through which capital can move as possible in response to varying, unstable, and unpredictable structural conditions. As Zalik (2015) describes, oil companies ‘pursue multiple, simultaneous spatial strategies’ by seeking access to ‘divergent/competing sources of hydrocarbons,’ which thereby allow them to ‘profit and offset regional crises via its spatially diverse assets, aided by the competition between states for capital investment under neoliberalism’ (2452-3). The neoliberalization of the tar sands beginning in the 1990s is part of this story of regional competition for investment under global capitalist conditions. I am not arguing that neoliberalization *caused* capitalist investment to flood into the Athabasca region on its own – indeed, we could imagine a scenario in which neoliberal reforms occurred but capital investment failed to materialize. However, this re-regulation did help to create conditions that enabled surplus accumulation to enter this space in a moment when

prices were high and supply low in order to counter the structural imbalances caused by these market conditions.¹²

Of course, facilitating the smooth movement of capital between sites of extraction and accumulation equally enables the retrenchment of capital and its relocation to other spaces when conditions change. This is precisely what occurred when oil dove from over \$100 a barrel in June 2014 to \$50 a barrel by March 2015, and then to below \$30 a barrel by January 2016. According to estimates by the Canadian Energy Research Institute (2017), the cost of producing a barrel of tar sands oil in a newly built in-situ operation is approximately \$60.52, and \$75.73 in a new mining operation. Here it is worth noting that Western Canada's heavy crude is not only more expensive to produce than oil from conventional (and many unconventional) sources, but it also sells at a discount of roughly \$10 to \$15 compared to the light sweet crude that is used as the global benchmark for oil pricing.¹³ With the price of oil that we have seen on global markets since 2014, new tar sands projects have no longer remained economical, and consequently capital investment has fled nearly as quickly as it arrived. In 2016 and 2017, international firms including Royal Dutch Shell, ConocoPhillips, Norway's Statoil, Murphy Oil, and Marathon all withdrew their capital from the tar sands, selling off billions of dollars of assets at discounted rates. These assets were bought up by smaller Canadian-owned firms, such as Cenovus, Canadian Natural Resources, Athabasca Oil Corp., and Suncor, in speculation that more favourable conditions of production would eventually return.

¹² See Bebbington (2012) and Watts (2015) on how neoliberal reregulation similarly opened up unconventional frontiers of oil and resource extraction elsewhere.

¹³ This price differential between Western Canadian Select and West Texas Intermediate crude reflects the higher costs of upgrading bitumen, as well as the higher costs of transporting it to refineries.

As “Big Oil” has withdrawn from the Athabasca region, it has poured many billions of dollars in investment into the latest oil boom deemed “Permania” in the Permian basin of Texas, where oil is being extracted from tight shale at much lower overhead and operating costs than is currently possible in the tar sands. This shifting of capital from one site to another in response to unpredictable economic conditions helps to illustrate the ways that global spaces of oil production are metabolically connected, interdependent, and co-constitutive, produced as capital moves between them in its efforts to keep oil and profits flowing. Attracting capital back to the tar sands will require economic conditions that are more favourable to oil producers. This might entail the price of oil climbing back to pre-2014 levels, or it might entail a decline in the cost of bitumen production. Or, perhaps both of these conditions will converge. Cost-cutting can be pursued by oil firms themselves. Suncor, for instance, has experimented with reducing labour costs by introducing driverless hauling trucks into their fleet (Jaremko 2017). However, governments can also contribute to reducing the costs of production by creating conditions that are even more amenable to capital accumulation. This is where government support and approval for the building of additional pipeline capacity can be understood as part of an effort to attract capital back to the tar sands region by providing producers with cheaper transportation options, as well as access to a wider range of markets where tar sands bitumen may be able to fetch higher prices (Chapter 5).

Three Circuits of Nature Production in the Tar Sands

If it is the case, as described above, that capital accumulation in the global oil assemblage seeks as many avenues, routes, and circuits as possible through which capital can

maneuver in order to avert persistent structural crises in response to unpredictable conditions, then we might ask how this imperative is reflected in the ways that the oil assemblage is organized spatially, and how this somewhat erratic circulation produces space and socio-ecological natures in the tar sands. In this section, I consider three distinct types of spaces that are associated with circuits of capital investment in the tar sands: spaces of extraction, spaces of speculation, and spaces of reclamation. In each case, I examine how these socio-ecological spaces are produced and reproduced as capital is invested, disinvested, and reinvested in the region over time.

Spaces of Extraction

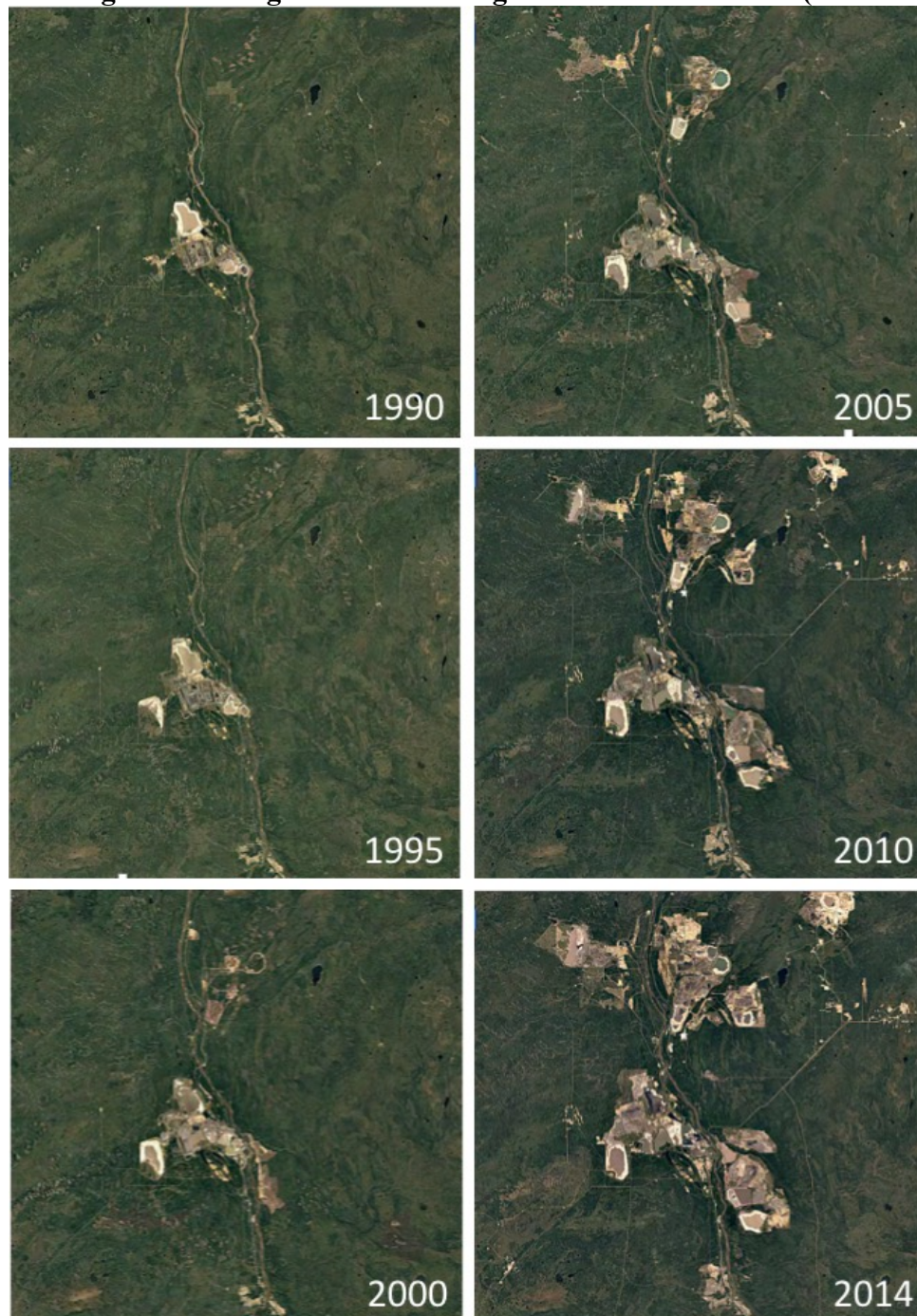
Shortly after Ralph Klein's neoliberalization of the tar sands industry and the influx of capital investments in extractive industry infrastructure beginning in the mid-1990s, the growth in tar sands production followed suit. While production averaged 21.2 million cubic meters per year between 1986 and 1996, this increased to 44.1 million per year on average during the following decade, and 101.5 million per year in the decade that followed that. As capital poured into the region, it sculpted and refashioned the landscape in its wake. Extraction of bitumen from the tar sands takes two general forms. In sites where it is found within 75 meters from the surface, bitumen is mined. The existing boreal forests, muskeg ecosystems, and virtually all existing life within these spaces (which the industry refers to as "overburden") are systematically removed. Convoys of three-story tall earth-movers diligently terraform this space, transporting 320 tonnes of earth at a time, and removing up to 720,000 tonnes of materials per day, leaving behind a mucky, barren landscape. According to the Canadian Association of Petroleum Producers, over 4,800 km² of land within the tar sands

region could be mined from the surface in this manner, and this activity has already devoured 900 km² of land (Figure 3.1).

Deposits that are too deep to be accessed by scraping down from the surface can often be extracted using in-situ techniques, where high pressure steam is injected into wells, separating the bitumen from sand underground and forcing it to the surface. Since 2012, more than half of the synthetic crude and bitumen produced from the tar sands each year has been extracted using in-situ methods rather than surface mining. In-situ techniques do not leave the massive scar upon the earth that has become associated with tar sands mining, nor does it require the hot water separation process that produces tailings – a toxic slurry composed of harmful chemicals and heavy metals that are stored in massive tailings ponds spanning many square kilometers. As a consequence, the impacts of in-situ extraction are far less visibly striking, however the land use and ecological impacts of these operations are nevertheless disruptive and extensive. In-situ extraction produces significantly higher carbon emissions, and also requires the clearing of large tracts of forested lands in order to construct industrial infrastructure, such as upgraders and power plants, as well as the construction of expansive networks of roads, pipelines, and seismic lines that connect core holes and well pads (Figure 3.2). The resulting pattern sculpted into the landscape resembles a patchwork of denuded lines and rectangles. Although this pattern of disturbance is less concentrated and therefore less visually apparent than surface mining, the projected ecological disturbance of in-situ mining taken as a whole is arguably greater (Timoney 2015: 5). As Schneider and Dyer (2006) have argued in their report ‘Death by a Thousand Cuts,’ because the total area of potential in-situ extraction is 50 times that of the minable area (comprising roughly 21% of Alberta), if the oil industry were to extract bitumen from the entire tar sands region, the

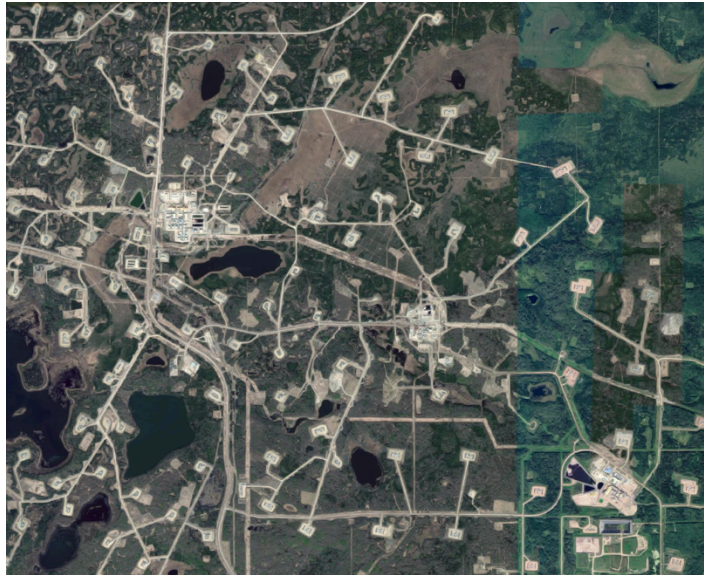
cumulative impacts of deforestation from in-situ operations would eventually exceed that of mining, and the ‘cumulative ecological impacts of in-situ development [would] be devastating’ (iix).

Figure 3.1: Google Earth Engine Satellite Images of Tar Sands Mines (1990-2014)



Source: Google Earth Engine (2017)

Figure 3.2: Satellite images of In-Situ Operations at Imperial Oil's Cold Lake Operation



Source: Google Maps (2018)

The satellite images featured in Figures 1 and 2 provide a glimpse into the manner in which the landscape of the Athabasca region was re-shaped and sculpted by the capital investment that began flooding into the region following a period of neoliberal re-regulation, and especially between 2005 and 2015 when the average price of crude oil remained consistently priced above US\$60 per barrel on global markets, reaching a high of over US\$160 during that period. As Figure 3.3 demonstrates, since 2015, when the price of oil dropped below US\$60 per barrel, capital investments in the tar sands have declined sharply from US\$33.8 billion in 2014 to US\$15.4 billion in 2016. Much of this capital has relocated to areas such as the Permian basin or the Bakken formation, where extraction is profitable at roughly US\$40 per barrel. Again, we must think of these sites as metabolically connected to other global sites of hydrocarbon extraction that capital can turn to in response to shifting economic conditions. Curiously, however, Figure 3.4 shows that tar sands production has continued to increase even with market prices so low that the costs of extraction and

transportation exceed that which the oil can fetch from markets, suggesting that levels of capital investment and production are not directly tied to one another, or that at the very least there is a noticeable temporal lapse between changes in each. The CAPP forecasts that tar sands production will continue to grow 53% by 2030 despite the current relatively low prices (CAPP 2017).

Figure 3.3: Annual Capital Expenditures in Tar Sands, 1971-2016 (billions US\$)

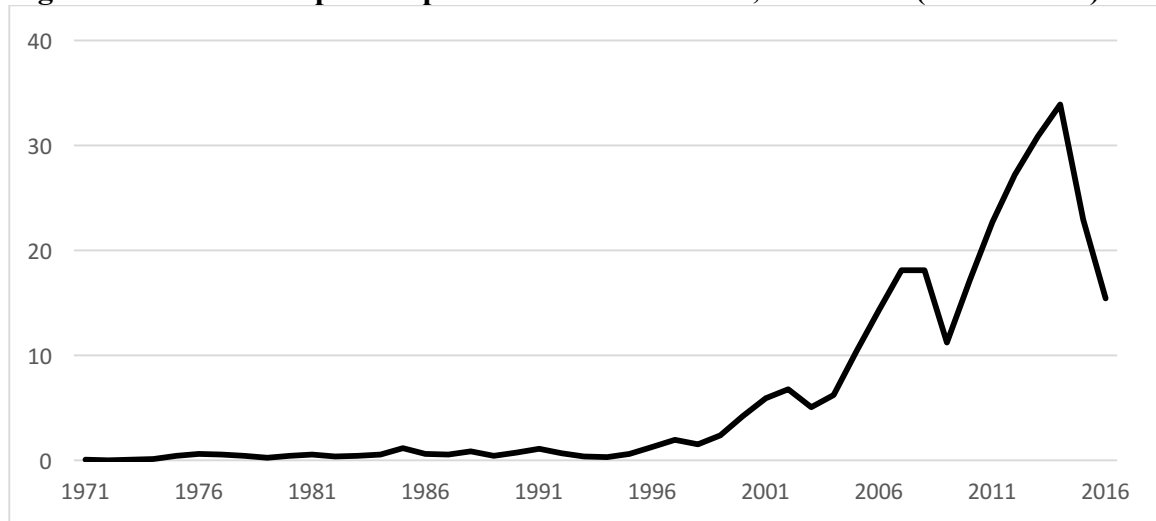


Figure created by Michael Simpson. Source Data: CAPP Statistical Handbook 2016.

Figure 3.4: Annual Synthetic Crude and Bitumen Production in Tar Sands - 1971-2016 (Millions of Cubic Meters)

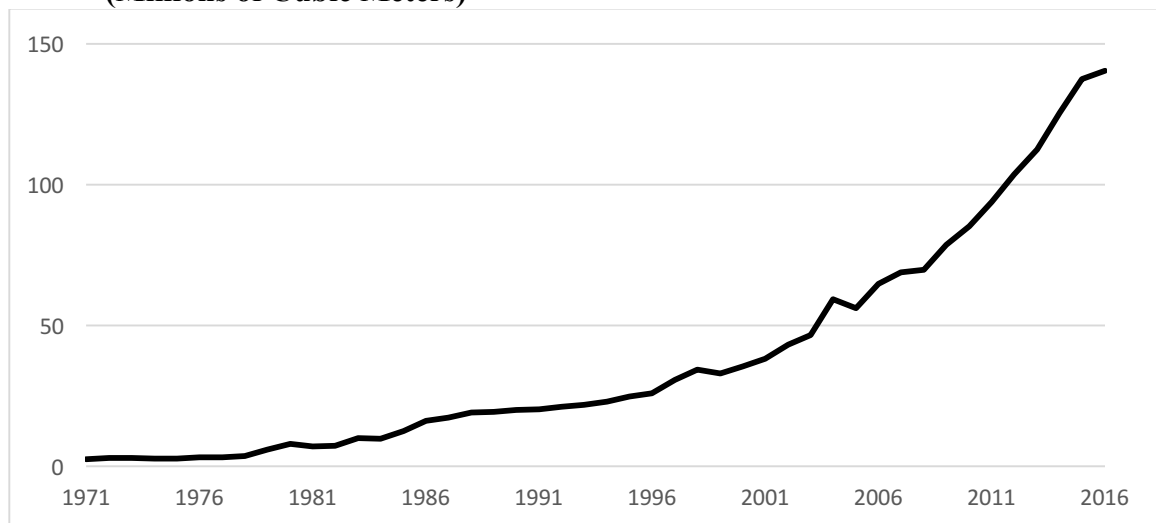


Figure created by Michael Simpson. Source Data: CAPP Statistical Handbook 2016.

This leads one to ask why the production of tar sands bitumen would continue to grow at a moment when this production appears to be uneconomical. There are several considerations that might explain this. In some cases, producers could have higher prices locked in by contracts, in which case it is the buyers who take the loss rather than the producer. Other times, producers will bank on futures markets and either store oil or sell it to speculators who will then store it in turn (Chapter 4). Other producers at sites that have been operational for some time may have lower costs of production per barrel than the average operator if the initial fixed-capital investments have been paid off, thereby allowing for profitable extraction to continue even when the price of oil remains low. In other cases, so much capital has been invested in start-up that even if a project has yet to come online, companies may decide to follow through on these project rather than cutting their losses and abandoning billions of dollars in fixed capital investment. In other cases still, companies might take less of a loss by continuing production than they would by shutting down production entirely because they would still be responsible for servicing loans on their megaprojects regardless of whether they are producing or not. As summarized by the *New York Times*, ‘many energy companies have too much invested in the oil sands to slow down or turn off the taps [...] Oil sands projects are based on 40-year investment time frames, so their owners are being forced to wait out slumps’ (Austen 2016).

The cost of shutting down and restarting operations can also be considerable, thereby making it more economical for producers to hedge their bets by continuing production while taking a loss with each barrel produced in hopes that market prices will rebound soon enough. As explained by a report published by RNB Energy, when an in-situ operation is cooled down, it can require much greater energy and expense to heat it up again than it does

to maintain production. Moreover, halting the in-situ system can potentially ‘damage the resource reservoir’ (Fielden 2016). In comparison, investments in shale oil extraction are much nimbler than they are in the tar sands. Tight shale operations are able to start or stop quickly, change locations, and move about more efficiently, extracting oil without locking up billions of dollars in fixed capital investments in megaprojects that pay off only after many years, and without needing to eat up long-term loan payments. As recently reported in the *Financial Times* (Crooks 2017), a new tar sands development can take seven or eight years to produce crude, whereas ‘activity in shale can be dialed up and down in a matter of months, giving companies the flexibility to respond to changing market conditions.’

Capital investment flows in and out of these spaces of extraction in response to changing economic conditions. As investors sink surplus capital into these spaces and bitumen production gradually ramps up, landscapes are radically altered as a consequence. As global economic conditions change, investors must then choose whether or not to continue investing in tar sands infrastructure, or to shift investments elsewhere where returns appear more promising. Although investments have declined in recent years in response to a steep fall in oil prices and diminishing rates of return, production levels have thus far continued to grow, and new projects have continued to come online. The immense quantities of fixed-capital required for tar sands production results in a lag between changes in levels of investment and production, and poses a problem for an industry that values nimble geographical switching to new sites of production in response to rapidly changing conditions. Many of the world’s major oil producers have abandoned their fixed investments in the tar sands, but the existing infrastructures and operations have been purchased by smaller companies banking on an eventual return to profitable conditions. Federal and provincial

governments continue to woo investment by making new promises of even more attractive subsidies and support for industry, such as offering billions of dollars for the construction of additional pipeline capacity.

Spaces of Speculation

In addition to producing these spaces of production, ongoing and uninterrupted accumulation in the oil economy also necessitates the production of another type of space – oil reserves. While these are not active spaces of hydrocarbon extraction, they are demarcated as sites of future production. As Gavin Bridge (2008) notes, oil companies invest ‘significant financial and human resources [...] towards identifying prospective areas and determining which provide the greatest returns’ (404). This investment includes the development and innovation of new technologies such as subsurface visualization and other methodologies that can be used to determine the properties and volume of oil in the ground (Bridge 2008).

According to data from the government of Alberta, the mineral rights to about 465,500 hectares of the mineable tar sands area had been leased to oil companies as of September 2017, but only 89,500 hectares of this area had been disturbed by production activities. The remaining 376,000 hectares of this mineable land currently leased by oil companies had not been used for extraction activities thus far, and may never be. Companies hold leases on these spaces in order to boost their oil reserve numbers. Maintaining these untapped spaces of reserve serves several functions for the oil industry. One key function is to manage supply. Rather than extracting all available oil at once, thereby creating a glut in the market, securing control of spaces where oil is intentionally kept in the ground helps to

maintain scarcity in the market, which contributes to keeping prices high and extraction profitable. Holding oil in reserve performs the additional but related function of ensuring the ongoing longevity of production. Investment in reserve spaces operates as a type of temporal fix which promises future rounds of accumulation. The ratio of oil production to oil reserves, or the “reserve replacement ratio,” is considered a key selling point of a company’s stock and impacts its ability to generate shareholder investment (Bridge 2008: 403; Zalik 2015a: 2452). A reserve replacement ratio of less than 1:1 signals that current levels of production cannot be sustained, which can lead to a devaluation in the price of the stock, regardless of the quantity of oil that is currently being produced (Klein 2014; Zalik 2015a). Reserve replacement ratios thus act as an indication of future profitability to shareholders and potential investors, and in this sense they are an instrument of speculative investment.

Figure 3.5: Pages from Suncor’s 2016 Annual Report Highlighting their Reserve Holdings



Source: https://sustainability.suncor.com/2017/pdf/Annual_Report_2016_EN.pdf

Oil companies advertise their reserve holdings to potential investors in glossy annual reports as an indication that the company will sustain growth and accumulation over time, seeking to generate confidence, attract capital, and boost the value of their stock. Figure 3.5 shows one example of this from Suncor's 2016 annual report (Suncor Energy Inc. 2016), which prominently features the company's reserve holdings, listing its reserves at 8 billion barrels of oil equivalent (BOE), which it estimates to last for 35 or more years of continuous extraction. In this document, Suncor also lists its reserves holdings as the company's number one 'competitive differentiator.' What is also notable from this document is that Suncor distinguishes between its proven reserves (4.9 billion boe) and its "probable" reserves (3.1 billion boe). Following the definitions and guidelines set out in the Canadian Oil and Gas Evaluation Handbook, "proven reserves" are those considered to be recoverable with at least a 90% probability, whereas "probable reserves" are those that are recoverable with at least a 50% probability (Suncor Energy Inc. 2017: 33-4). Reserves that are considered less than 50% likely to be recovered are sometimes referred to as "possible reserves" (Labban 2010). Investment in oil companies is thus partially contingent on not only reserve holdings, but speculation on the probability that future extraction will take place at various different sites given both current conditions and economic modelling of future conditions.

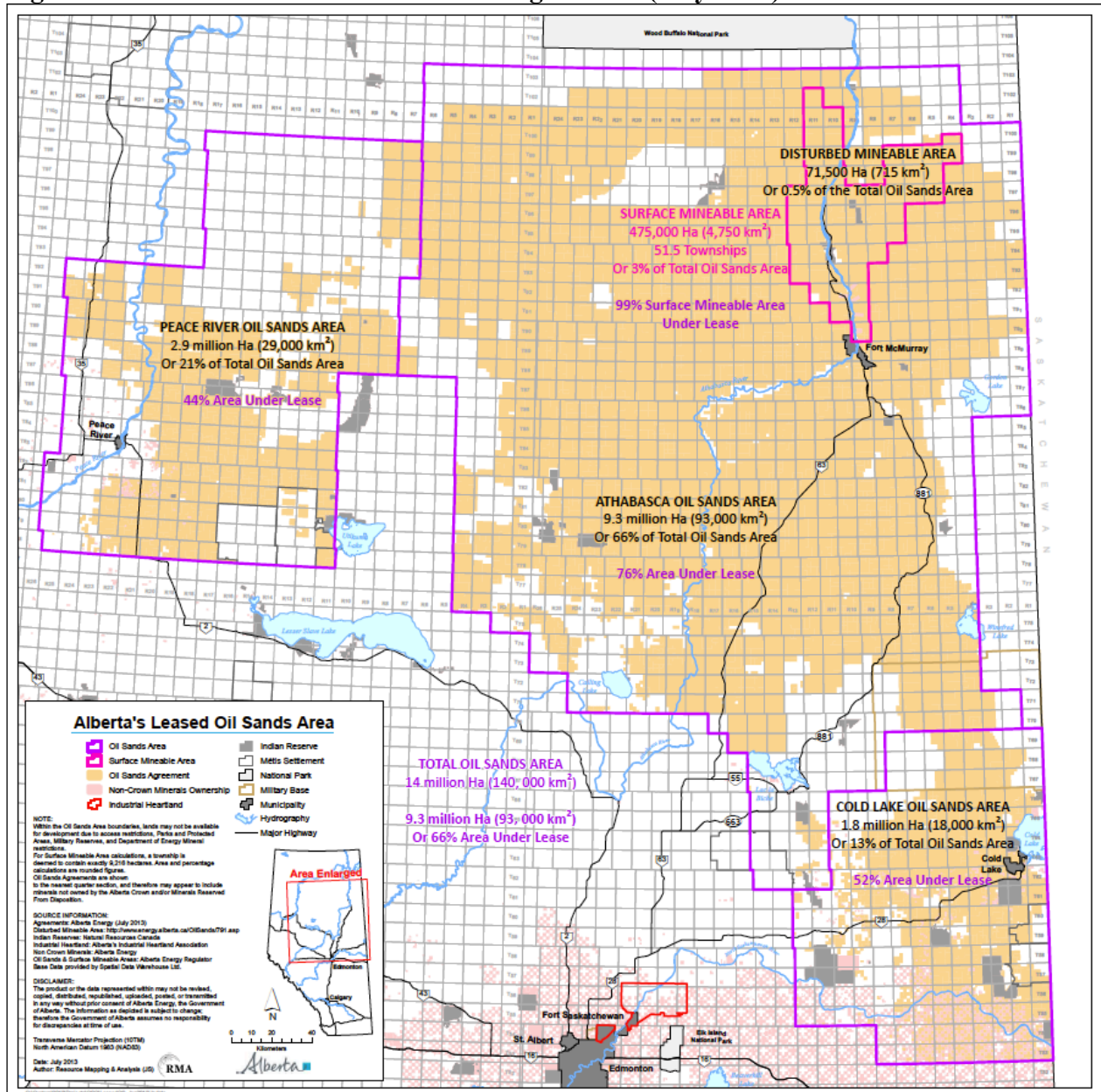
As these current and forecasted economic conditions change, spaces therefore move in and out of these different categorizations, and overall reserve holdings expand or contract. Prior to 2003, the tar sands were not even considered part of the world's oil reserves because they were not considered to be economically "recoverable" at the time. However, as economic conditions changed in the early 2000s, the US Department of Energy eventually recognized the tar sands as part of global reserves, which increased the total oil reserve

holdings in Canada from five billion to 180 billion barrels, making it the country with the second largest oil reserves in the world at that time. Likewise, prior to 2008, the US Securities and Exchange Commission had prohibited companies from booking and reporting their tar sands holdings as part of their proven oil and gas reserves, whereas today reserves can be booked by companies so long as they are deemed economically recoverable given current conditions. But, as economic conditions swing back and forth, so too does the size of companies' recoverable reserve holdings. In 2016, Imperial Oil had to de-book 3.5 billion barrels of reserves held at the Kearl mine in the tar sands because they were no longer considered economically viable. Likewise, ConocoPhillips de-booked over 1.75 billion barrels of oil reserves from their tar sands projects at Surmont, Foster Creek, Christina Lake and Narrow Lakes in 2017. The oil itself remains in the ground regardless of whether these spaces are booked or not, however it vanishes from the companies' balance sheets, only to reappear later if conditions change again and these spaces are rebooked.

Even when land is de-booked and removed from proven reserves, companies may still choose to invest in the mineral rights to this land in speculation that it will be bookable under future conditions. In Alberta, 97% of mineral rights to the tar sands are owned by the provincial government. Oil companies acquire these rights from the government either by purchasing leases that are issued for 15 year terms, or permits that are issued for five years. Leases can be purchased either directly from the government at public offerings where they are sold to the highest bidder, or they can be purchased from existing lease holders. Much like land considered to be part of oil reserves, the total area of land under lease in the tar sands can expand or contract as leases are either sold, terminated, or allowed to expire. Figures 6 and 7 show that the total tar sands area under lease to oil companies contracted by

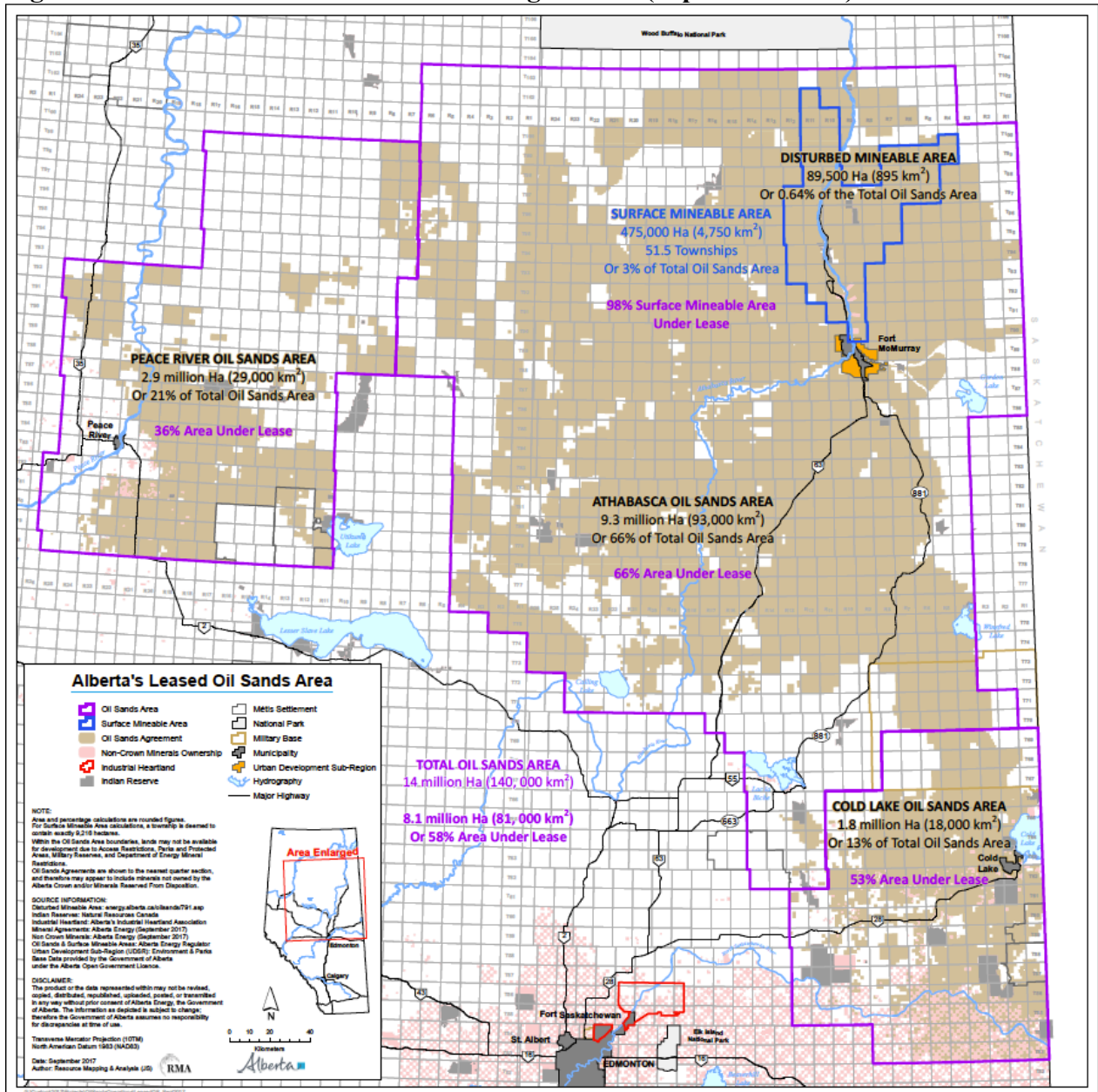
1.2 million hectares between July 2013 and September 2017 as companies chose to either surrender their tenure agreements, or chose not to renew them.

Figure 3.6: Tar Sands Areas Under Lease Agreement (July 2013)



Source: Alberta Energy

Figure 3.7: Tar Sands Areas Under Lease Agreement (September 2017)



Source: Alberta Energy

When a company holds mineral rights to oil that can no longer be counted as part of its proven reserves, these leases no longer hold the same value as an asset on the company's balance sheet, and may even come to be considered a liability for companies because they have to pay annual rental fees that escalate over time. Companies must also invest in either exploration or extraction on leased land should they want to renew the lease. In the case that

a lease becomes a liability that the company no longer wants to absorb, they can either terminate the lease, or sell it to other firms in order to recoup some of their initial investments. Leases thus become commodities that are themselves bought and sold on markets, priced in accordance with supply and demand, somewhat independently of the actual buying and selling or production of oil. As Figure 3.8 demonstrates, the average price of leases and permits acquired through public offerings declined 92% from \$527.29 per hectare in the fiscal year of 2014/15 to just \$42.30 the following year, as these leases became less valuable to oil companies that could no longer count them towards their proven reserves. However, when the price drops like this, smaller companies can benefit from purchasing these leases at discount rates in speculation that the price of oil will bounce back (as it did in 2016/17) and inflate their reserve figures in the future.

Figure 3.8: Average Price per Ha of Tar Sands Leases and Permits Acquired through Public Offerings (by Fiscal Year April to March)

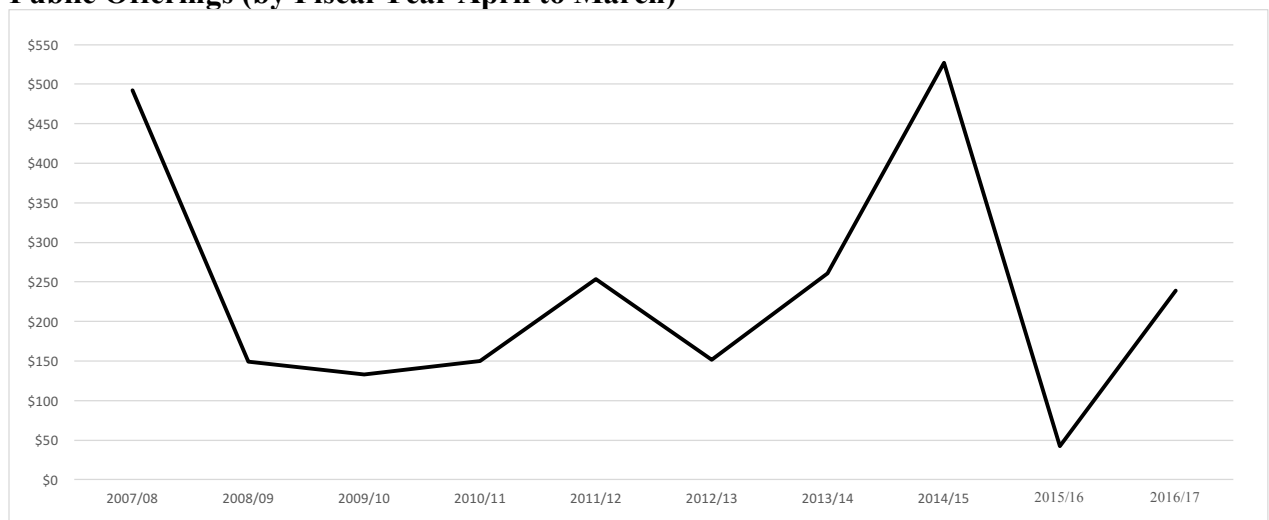


Figure created by Michael Simpson. Source Data: CAPP Statistical Handbook 2016. Source Data: Alberta Energy

The trading of mineral rights thus becomes a form of speculative investment on oil futures, which creates its own circuit of accumulation somewhat removed and independent

from the production of the physical material of oil itself. As Kelly Kay (2018) writes, ‘there is a real need to understand what sorts of natures are being produced through financialization’ (28). Looking at spaces of oil reserves, and how these spaces are governed and managed, offers an example of how space and socio-ecologies are uniquely produced by speculation and financialization. Firms invest significantly in these spaces of oil reserve. These spaces are maintained, surveyed, mapped, indexed, quantified, and modelled both above and below the surface, all to provide shareholders and prospective shareholders with assurances, or at least the illusion, that capital accumulation will carry on into the foreseeable future, thereby ensuring that stocks retain their values. Rather than deriving value from these spaces by placing them under immediate production, the value in these spaces resides in the decision to *not* place them immediately under production, or perhaps more accurately, in the measured probability that they will be placed under production at some future point in time. Based on these projections, spaces oscillate in and out of the economic classifications of “proven reserve,” “probable reserve,” “possible reserve,” “leased,” or “unleased,” and legal rights to the space are valued, traded, and exchanged accordingly. We might think of this distinction between these spaces of extraction and spaces of reserve as the spatial expression of the underlying tension between oversupply and undersupply in the oil industry, and the underlying contradictions of capitalist production more broadly (Labban 2008).

Speculative spaces of reserve holdings effectively act as promissory notes on future cycles of extractive accumulation, and these spaces must be maintained in order to attract investment into the region and in order to ensure continuation of production in spaces of extraction. While these spaces are thus metabolically related to spaces of extraction, capital moves through these reserve spaces in different ways and at different temporalities, thereby

producing a different type of space. The total area of land that is placed in each of these categories expands and contracts even when the actual physical existence of oil in these subterranean sites remains constant. Although these categories are quite obviously political and economic constructs, they clearly result in real-world socio-ecological impacts. Because investors considered these metrics to be an important indicator of future profitability, this classification and reclassification of space has important implications for where capital is invested, where oil is produced, how these spaces are governed, and the socio-ecological forms that nature takes within these speculative spaces.

Spaces of Reclamation

Whereas spaces of extraction are spaces where oil production is active, and reserve spaces are spaces that are demarcated for extraction at some point in the future, spaces of reclamation are those spaces where bitumen extraction has been complete or has already taken place in the past. These three types of spaces therefore represent three different temporal moments within the overall cycles of capital investment in and out of this region, and three moments in the overall extraction process, although it is important to note that these circuits also operate in different spaces concurrently.

As discussed above, tar sands mining operations require the removal of virtually all life (“over-burden”) and leave behind a giant hole in the ground that can be up to 100 meters in depth and can span many kilometers in length and width. Moreover, these operations produce massive ‘tailings ponds,’ which contain the toxic bi-products of production, such as salts, chlorides, sulphur, heavy hydrocarbons, and chemical solvents. These ‘ponds’ are said to cover about 180 km² in Alberta as a whole, with a volume of tailings equivalent to

390,000 Olympic-sized swimming pools (Steward 2015), and are said to be visible from space. In accordance with Alberta's *Environmental Protection and Enhancement Act* and *Conservation and Reclamation Regulations*, oil companies are legally required to return all lands that they disturb to 'equivalent land capability' after their operations are complete. Even prior to commencing extractive activities, companies must submit conservation and reclamation plans that outline how they intend to fulfil these requirements. As explained on the Alberta Energy Regulator website, returning the land to a state of 'equivalent capability' means that it is not necessary to recreate ecosystem composition exactly as it was prior to disturbance, but that the reclaimed landscape should be 'functionally equivalent' to the pre-disturbance ecosystem. Oil companies are also required to remediate any contamination of soil or water caused by their activities, and they must obtain a reclamation certificate issued by a government inspector upon successful fulfillment of these obligations.

According to the data provided by the Alberta Ministry of Environment and Parks, in 2016, a total of 953km² (95,301 hectares) of land has already been disturbed by tar sands mining (although this figure does not include a potentially much larger area that has been disturbed by in-situ operations).¹⁴ Of this disturbed land, approximately 70.9% remains under active use for extraction, and an additional 18.6% has been cleared in preparation for extraction. Of the approximately 10,000 disturbed hectares that are no longer in use, approximately 97% of this land has already received some amount of reclamation treatment, ranging in extent from soil replacement to re-vegetation. However, to date, only one reclamation project has been certified as having completed the reclamation process:

¹⁴ See data library at: osip.alberta.ca

Syncrude's Gateway Hill site, which covers 104 hectares – equivalent to just 1% of all inactive mine sites, or 0.15% of the total area disturbed by tar sands mining up to 2016.

Oil companies showcase their tar sands reclamation activities on websites and other promotional videos and materials that highlight their “sustainability.” In addition to its efforts at Gateway Hill, Syncrude has also actively promoted its work at “South Bison Hills,” a former mining site where visitors now can gaze out at a herd of charismatic bison that have been fenced into a 400-hectare pasture. Suncor's signature reclamation project is its former 200-hectare tailings pond, “Pond 1,” which has since been renamed “Wapisiw Lookout” after the Cree man who first introduced European traders with bitumen in the early 18th century. In its 2014 *Corporate Citizenship Report*, Imperial Oil highlights that it has successfully reclaimed 100 hectares of disturbed land at its Kearl operation. In addition to being promoted by the oil companies themselves, these marquee reclamation projects are promoted by the tourism industry, which encourages people to visit and witness the good work that oil companies are doing for the environment. Many of these reclaimed sites feature their own visitor centres, interpretive trails, or guided tours. Syncrude has won environmental awards and accolades for this work from the Mining Association of Canada and the Emerald Foundation.

Of course, the landscapes that oil companies produce and then promote as having been “reclaimed” do not (and cannot) resemble the complexity and diversity of the boreal and muskeg ecosystems that they have obliterated (Timoney 2015). The hydrology of these reclaimed sites has been radically altered by decades of mining activities. The complexity of soil composition and soil life has been destroyed. The vegetation can only be replaced by species that are tolerant of these disrupted, degraded, and altered soil and hydrological

conditions. These manufactured ecosystems fail to perform many of the functions that their predecessors did, such as the capturing and sequestering of carbon at which old-growth peatland or muskeg ecosystems excel. It is worth noting that the loss of highly efficient carbon sequestering landscapes are not calculated in the overall carbon emissions generated by the tar sands. Moreover, effective methods of treating the toxic waste of tailings ponds remain unknown. In the case of the reclamation of Suncor's Pond 1, the toxic sludge was merely moved to a nearby site, thereby relocating rather than resolving the problem. In short, the rich ecosystems, hydrological formations, and soil structure that preceded tar sands extraction, and which developed over thousands of years, cannot be reproduced, engineered, or constructed in short timescales of capital (Struzik 2014; Timoney 2015). Much like the barren mines that they are intended to replace, the landscapes that oil companies "reclaim" are socio-ecologically constructed natures produced by capital as part of the accumulation process.

All of this leads one to question whether these reclamation efforts are less about sound ecological practices than they are the industry's effort to create a good public image in response to growing criticism and opposition. Indeed, it remains highly doubtful whether the ecological restoration efforts that the companies have pursued on a small scale could ever feasibly be scaled up to cover the entire area that the tar sands industry has already destroyed. The Pembina Institute (2010) has estimated the cost of reclaiming tar sands mines at between \$220,000 and \$320,000 per hectare, which would place the total cost of restoring the 95,301 hectares that have already been disturbed by mining activities at \$20 to \$30 billion (not including in-situ disturbances or the future expansion of mining operations). As of 2016, Alberta's Environmental Protection Security Fund contains only \$43.6 million in cash, and

an additional \$1.5 billion in securities deposits received from the oil companies. This fund was created to cover the cost of clean-up in case companies do not follow through on their reclamation obligations. However, given that this fund contains what is really an infinitesimal amount compared to the potential future costs of ecological restoration of the tar sands, there is a high likelihood that the government will ultimately bear the costs of this clean-up, providing yet another public subsidy to oil companies which have effectively been allowed to externalize the costs of the social and ecological damage that they have created (see Adkin 2016a). Moreover, private environmental engineering firms such as BGC Engineering Inc. stand to make huge profits from this massive clean-up job, selling not only their logistical expertise, but also potentially profiting from selling many millions of seeds, seedlings, plants, and other materials.

Reclamation activities thus become a third circuit of capital accumulation in the tar sands, whereby capital is able either to internalize the environmental degradation produced by extraction within the accumulation process itself by creating a new opportunity for private profit, or externalize these costs by evading their clean-up responsibilities, in which case they are picked up by government as yet another public subsidy to Big Oil. Anna Tsing (2003) describes this as the ‘salvage frontier,’ where ‘making, saving, and destroying resources are utterly mixed up, where zones of conservation, production, and resource sacrifice overlap almost fully, and canonical time frames of nature's study, use, and preservation are reversed, conflated, and confused’ (5102). The new natures produced in these spaces of reclamation provide oil companies with a type of “sustainability fix” that serves to counter widespread condemnation and public opposition to the industry’s social and environmental practices by presenting tar sands extraction as responsible and sustainable, thereby helping ensure that

this extraction can continue apace. The role played by ecological restoration and environmental engineering firms in papering over the devastation wrought by tar sands extraction and industrial disturbance draws attention to these environmental industries' reliance on industrially-generated ecological damage in order to generate profits, and thereby raises difficult questions about the restoration industry's own culpability in these processes. This unholy alliance between extractive industry and ecological restoration practice points to the ways that environmentalism and neoliberalism have each 'incorporated elements of the other' (McCarthy & Prudham 2004: 279). Whereas the production of these spaces enables oil firms to speak the language of sustainability and responsible environmental stewardship, 'free market environmentalists' capitalize from extraction either by taking a cut of profits or receiving government grants in exchange for offering their environmental services, cleaning up the mess that oil companies leave behind, and offering Big Oil the ecological license that allows extraction to continue.

Conclusion

This chapter argues that the bitumen boom and bust, witnessed in the Alberta tar sands from roughly 1996 to the present, can be explained as a product of a global oil economy that is inherently prone to structural imbalances of supply, and which alternates between conditions of overproduction and underproduction (Labban 2008). Oil companies seek out as many different spaces of extraction and circuits of accumulation as possible in order to negotiate these precariously uncertain structural conditions. As the oil industry invests and retreats from these various spaces in response, local jurisdictions compete to attract capital to their regions by providing the most investor-friendly conditions within the

global “oil assemblage.” The neoliberalization of Alberta’s tar sands industry created favourable conditions for investment, and capital began flooding into the region as prices of the commodity climbed. In recent years, capital has quickly exited this region since 2014 and relocated to the Permian basin where conditions of accumulation suddenly appeared far more accommodating, prompting governments to seek new ways to subsidize tar sands extraction, investing in infrastructures such as pipelines in order to lure investment back.

I then ask what implications this erratic movement of capital and oil throughout the global oil assemblage has for the production of space and socio-ecological natures. My intention has been to make two points in this regard. First, that sites of extraction throughout the global oil assemblage are metabolically connected and cannot be studied in isolation. By bringing a greater diversity of sites of extraction into this assemblage, capital secures a greater number of potential avenues and strategies with which to avert compounding and ever-looming crises of accumulation. As we have seen, a crisis of production in the tar sands can be averted by moving investment temporarily to a new frontier of accumulation, but this does not foreclose the ability of capital investment to return once conditions change again, or once governments offer sufficiently attractive conditions.

Secondly, I have tried to demonstrate that even within the tar sands region, several different circuits of accumulation are set in motion, each of which operates with a different temporal rhythm and produces distinctly different types of spaces, but which are nevertheless each inter-related and integral to the industry as a whole. Spaces of extraction are those where the actual physical commodity of bitumen is produced. These spaces provide opportunities for accumulation because once extracted, the commodity can then be shipped and exchanged on world markets. Spaces of speculation are spaces in which companies

invest as reserve holdings, in speculation that these may become spaces of extraction at some point in the future, but which, in the meantime, are mobilized to ensure shareholder value and attract additional financial capital. The rights to these lands become bought and sold on their own markets that function more like an oil futures market, operating somewhat independently of the exchange of the actual commodity of oil. Spaces of reclamation are the severely damaged and degraded landscapes that become new frontiers for capital accumulation, as private firms are hired to clean up the oil industry's mess. By doing so, these firms allow the oil companies to show a public face of corporate and environmental responsibility, providing a type of "sustainability fix" with which to counter the industry's vocal critics. Whereas production in spaces of extraction remains ongoing, and spaces of speculation promise future extraction, spaces of reclamation succeed extraction. Each take place concurrently in different spaces, but with a different temporal rhythm and logic.

Each of spaces constitute distinct types of 'nature,' or socio-ecological orderings, that are reflections of the different spatial and temporal circuits required for capital accumulation in the oil industry to take place and reproduce itself. Much like the circulation of capital produces uneven *urban* geographies by investing, divesting, speculating, and reinvesting in different neighbourhoods, cities, or regions overtime, so too does the circulation of capital produce uneven geographies in extractive industries. The ability to move between these different spaces, or invest in these different temporal circuits of accumulation, requires the production of distinct sorts of spaces, and therefore "natures" or socio-ecological formations. Here, then, I want to push beyond the idea that neoliberalization imposes a discernable pattern of socio-ecological conditions upon landscapes – the "neoliberal natures" thesis (Heynen et al. 2007; Castree 2008a, 2008b), and instead I would like to think about how

neoliberalization sets in place distinct temporal circuits of capital accumulation, and seeks possibilities for nimble and unimpeded capital switching back and forth from different locations in response to changing economic conditions. These different circuits include circuits of productive capital, financial or speculative capital, and what we might think of as ‘disaster capital’ (Klein 2007) that seeks opportunities to profit from reclaiming spaces that have already been sacrificed by extractive industries. Each of these circuits are metabolically linked and therefore co-constituted, but they also each produce distinct types of space, which is why I will refer to each as *accumulative circuits of nature-production*.

Chapter 4 - The Annihilation of Time by Space:

The Pluri-Temporalities of Capitalist Circulation

In October 2012, Musket Corporation announced the opening of a new rail terminal that would enable the movement of an additional 30,000 barrels of crude oil per day out of northern Colorado. Upon making the announcement, managing director J.P. Fjeld-Hansen stated that, ‘We recognize a continued demand to move crude oil efficiently by rail, and now that we [...] have expanded our terminal and trucking network, we have further enhanced our well head to end user service capability’ (Musket Corp 2012). Three years later, Fjeld-Hansen explained to *The Wall Street Journal* that since the new facility had opened, its function had changed: ‘The focus has shifted from a loading terminal to an oil-storage and railcar-storage business’ (Friedman and Tita 2016). The railcars at Musket’s terminal were filled to the brim with oil, but rather than moving this product efficiently from ‘well head to end user’ as the company had initially intended, the railcars remained stationary at the terminal, lined up along the tracks.

This chapter veers away from looking at the tar sands specifically, for the time being, but moves to examine the transportation of oil in North America more generally by engaging with recent literature on the circulation of commodities along the supply chain infrastructures of global capitalism. However, unlike much of the recent literature, which tends to emphasize the capitalist imperative to accelerate the velocity with which commodities circulate, here my intention is to think carefully about moments where supply chain infrastructures are employed to perform the exact opposite function – that is, where supply chains are used to relent the rate of circulation. At least since Marx, theorists of capitalist circulation have

stressed the importance of moving commodities to markets quickly in order to hasten the rate of capital accumulation. Marxist theory typically suggests that the faster the turnover time of cycles of accumulation, the greater the number of cycles that can be completed and hence the more capital that can be generated (Harvey 1999: 85-7, 377-380; Danyluk 2017). In the late 1980s, Harvey (1989) argued that this tendency towards ‘time-space compression,’ had intensified as the global economy shifted from Fordism to neoliberal models of capitalism (284-285, 293). Recent scholars of supply chain logistics have also taken up this emphasis on the imperative of speed for capitalist accumulation under conditions of neoliberal globalization (Cowen 2014a; Danyluk 2017).

Where contemporary scholars of supply chains address slowdowns or stoppages in circulation, they tend to explain them as either a type of unintentional bottleneck that occurs as a consequence of either design imperfections in the circulatory infrastructure, or as social disruptions such as blockades or acts of sabotage (Cowen 2014a: 2; Cowen 2014b; Chua 2017a, 2017b; Pasternak 2017; Pasternak and Dafnos 2017). These explanations assume that the interest of producers is to move products to market rapidly, and that slowdowns impair the generation of profit and accumulation. Moreover, it is implied that as soon as these unintentional or unforeseen impediments are ironed out or resolved, circulation will continue apace. These explanations for delays or gridlock in supply chains are not incorrect, but taken together what they miss are the instances in which slowing down circulation occurs intentionally and in the interest of capital accumulation. In other words, slow circulation is not always a result of accidents, oversights, or disruptions – rather, there are moments at which decelerating speed is an outcome consistent with the internal logic of capitalism.

Careful attention to these moments can help expose the structural tensions and contradictions that are inherent to the capitalist mode of production.

In order to exemplify these points, I consider the example of Cushing, OK, where giant tank farms sprawl across the landscape, holding tens of millions of barrels of oil at a standstill. I argue that storage spaces such as these serve as a type of spatial fix for the oil industry, allowing excess oil to be temporarily taken out of circulation at moments when there is glut of cheap oil flooding the market and driving prices down. By storing oil, producers and other sellers of the commodity are able to avert a crisis in overproduction that would otherwise force producers to either sell low or scale back the rate of fossil fuel extraction. I show that much of the economics of storage is driven by speculation and futures markets. When the spread between the current market price of oil and futures market prices is greater than the cost of storage over that same period, there is an incentive to store now and sell later in order to maximize returns. So, whereas Marx described how capital can exploit price discrepancies between markets that are spatially distanced by accelerating the rate of circulation, which he referred to as the ‘annihilation of space by time,’ here I want to think of the ways that capital exploits price discrepancies between markets that are temporally distanced by using spatial infrastructures to *decelerate* the rate of circulation, a practice that I argue can be thought of as the ‘annihilation of time by space.’

As the incentive to store commodities increases, storage space becomes increasingly scarce and thus increasingly valued. At this point, any empty space remaining in tanks becomes traded as its own coveted commodity. In recent years, available space in tanks has become so highly valued that leases on empty tank space are now traded on their own futures

markets, where speculators attempt to derive profits based on their predictions of what the value of this space will be in the future.

Ultimately, my argument is that while there are scenarios in which the rapid circulation of commodities serves the interest of capital accumulation as emphasized in much of the current literature, there are likewise other scenarios in which circulation slows down or grinds to a halt in order to avoid selling low and taking a loss. In other words, capitalism employs *pluri-temporal cycles* of circulation and accumulation. The multiple temporalities of circulation, and the role of futures markets and speculation in influencing these temporalities of circulation, have not been adequately considered in the existing literature on supply chains. This speculative activity requires the production of massive storage infrastructure, such as the tank farms at Cushing. Understanding the economics of storage can thereby help us to think about the materiality of futures markets and speculative activity, and the ways that financial capital contributes to the production of space, time, and nature in ways that are unique from other forms of capital.

Marxian Theories of Speedy Circulation

In the *Grundrisse*, Marx identifies a fundamental tension between the demands of space and time within the capitalist mode of production which helps to explain the crucial role played by supply chain infrastructures in circulating global commodities. On the one hand, capital accumulation demands speed. If value is generated by completing cycles through which money is invested in a production process resulting in a commodity that is then sold and thereby ‘retransformed’ back into money plus surplus capital (M-C-M'), then the faster that this cycle can be complete, the quicker surplus capital can be reinvested in

further rounds of accumulation. This is to say that compressing the ‘turnover time’ of the cycle of accumulation enables more cycles to occur in a given period of time, and thus results in more value accrued (Harvey 1989, 1999; Danyluk 2017). On the other hand, capitalism requires continual spatial expansion. As a mode of production that prioritizes exchange value over use value, accumulation comes to rely on selling commodities to markets that are located at an ever-increasing distance. As Marx writes, ‘this spatial moment is important insofar as the expansion of the market and the exchangeability of the product are connected with it’ (Marx 1973: 534). Extending capitalism’s reach spatially also offers the producer access to new sources of labour and raw materials, thereby reducing the cost of production (Harvey 2003).

Marx considers that if a commodity were produced and sold in the same location, then the cycle of accumulation could theoretically be equal to the time of production alone – that is to say that no additional time would be required to move the commodity to another location before it is sold for profit. If the movement of the commodity ‘proceeded as rapidly in reality as in the mind,’ then the ‘repetition of the production process would be restricted only by the amount of time that it lasts, the amount of time which elapses during the transformation of raw material into product’ (Marx 1973: 538-9). But, herein lies the moment at which the demands of space and time collide. The further afield that capitalism reaches, and the greater the distance between sites of production and sites of consumption, the more time is required for products to be transported to market. As Marx nicely sums up: ‘capital must on the one hand strive to tear down every spatial barrier to intercourse, i.e. to exchange, and conquer the whole earth for its market, [while] it strives on the other side to [...] reduce to a minimum the time spent in motion from one place to another’ (1973: 539).

For Marx, this ‘time spent in motion’ or circulation is a ‘time of devaluation,’ meaning that the longer a product remains in circulation, the less surplus value it can ultimately generate (539). Not only are there costs incurred by transportation that eats into profits, but circulation time also lengthens the overall turnover time of accumulation and therefore impedes the onset of subsequent rounds of investment, as noted above. As Marx describes in the *Grundrisse*, ‘the velocity of circulation, the *time* in which it is accomplished, is a determinant of how many products can be produced in a given period of time; how often capital can be realized in a given period of time, how often it can *reproduce* and *multiply* its value’ (538). The need to circulate products through space therefore acts as a ‘barrier’ to the repetition of the production process (545). Minimizing circulation time ultimately minimizes the devaluation of the product by ensuring both greater profitability in the current cycle of accumulation, as well as a greater overall number of cycles.

So, on Marx’s account, space and time place limits upon one another, and these limits ultimately restrict the rate at which accumulation can occur. Space limits the speed of accumulation because the further commodities have to move, the more time it takes for them to get there. Conversely, we could say that time places limits on space because the imperative of a rapid turnover time restricts the distance that commodities can travel while remaining profitable in exchange. In order to perfect the process of accumulation, capital must find a way to expand its reach spatially while also reducing the movement of commodities temporally. This is where Marx famously writes that the solution developed by capitalists is the ‘annihilation of space by time.’ The tension between the imperatives of space and time gives rise to the development of faster and faster transportation technologies that hasten the pace at which commodities move across space, thereby overcoming the distance of markets.

Spatial distances become measured by the time it takes to move between two points, and this time is increasingly compressed. As Marx writes, ‘even spatial distance reduces itself to time; the important thing is not the market’s distance in space, but the speed – the amount of time – with which it can be reached’ (Marx 1973: 538). As technological innovations move ever-closer to eliminating circulation time altogether, they thereby obliterate the barrier that spatial distances pose to the accumulative process.

More recent scholars of supply chain have taken up and developed the theme of speed in processes of capital accumulation, emphasizing the increasing velocity of circulation under conditions of neoliberal globalization (Cowen 2014a; Danyluk 2017). As barriers to trade were dismantled worldwide, a consequence of the global economy’s transition from Fordism to neoliberalism (Harvey 1989), and as the production process itself has increasingly become decentralized and distributed across global space (Coe and Yeung 2015), the demand for efficient and dependable circulatory systems has become more vital than ever, while the organizational challenges associated with this circulation have become evermore complex. Scholars of supply chains point to recent innovations in the technologies of transportation, such as the widespread adaptation of standardized intermodal shipping containers (see for instance: Cidell 2012; Martin 2014; Chua 2016; Levinson 2016; Gregson 2017), as well as the recent ‘revolution’ in supply chain logistics (Cowen 2014a). Logistical sciences employ modelling technologies to carefully manage and orchestrate the flow of things over long distances to and from sites of production via networks of global distribution infrastructures that traverse continents, oceans, and geopolitical borders, ensuring just-in-time delivery. Scholars of these recent technological and managerial innovations in supply chains and global production networks tend to emphasize how they contribute to smoothing out the

bumps and inefficiencies that impede the speedy flow of materials through this circulatory system of things.

In the following sections however, I think through these theories of capitalist speed and circulation in relation to the movement of oil, and by doing so I find that this case does not perfectly accord with the suggestion that capitalism places a premium on speed and acceleration. Thinking along the oil pipeline offers a different perspective on the circuitry of capital – one that is not only characterized by speed and smooth flows, but one that is also characterized by the sometimes sluggish movement of things. Here then, I want to consider how we might theorize or make sense of the spaces in which the circulation of ‘capital in the commodity form’ slows down or grinds to a halt.

Understanding Backlogs and Bottlenecks

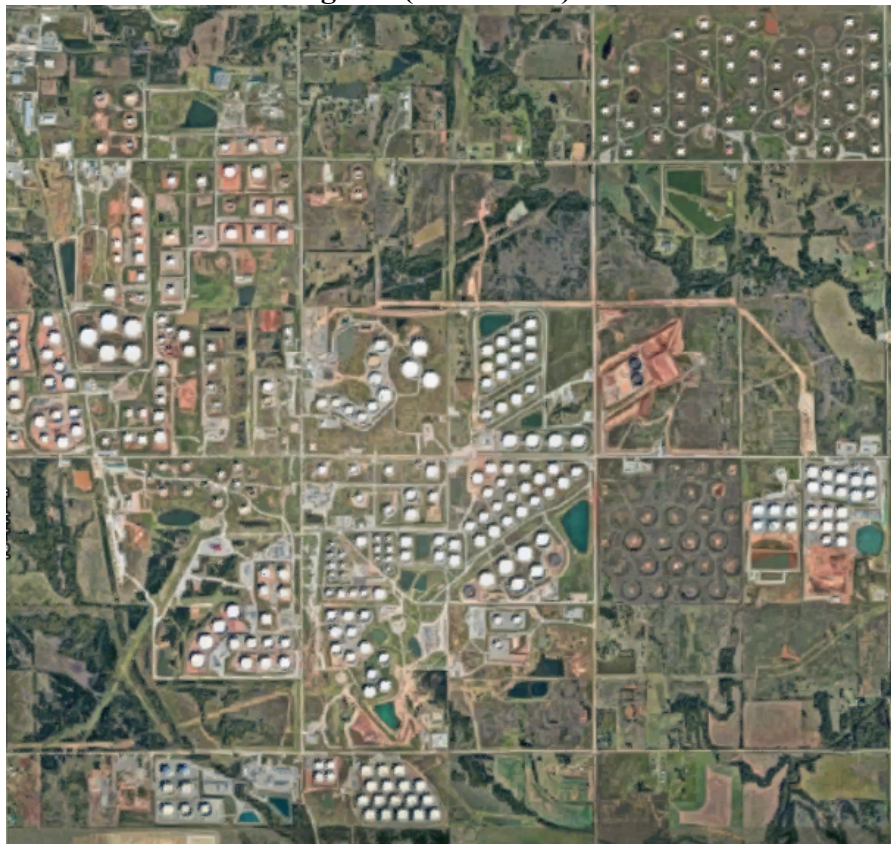
Visitors to Cushing, OK, are greeted by a sign constructed out of steel pipes that welcome them to the ‘pipeline crossroads of the world’ (Figure 4.1). This is the place where oil goes to sit. In this town of less than 8,000 people, billions of dollars of oil – tens of millions of barrels – are held in oil tank farms that sprawl out across the landscape over hundreds of acres. According to the US Energy Information Administration (EIA), as of September 2017, approximately 61 million barrels of crude oil were being stored at Cushing, while across the United States a total of about 254 million barrels of crude sat idle in storage facilities awaiting further circulation (EIA 2017).

Figure 4.1: Sign welcoming people to Cushing, OK



Photo by Roy Luck. Licensed under Creative Commons Attribution 2.0 Generic (https://commons.wikimedia.org/wiki/File:Pipeline_monument,_Cushing_OK.jpg)

Figure 4.2: Tank Farms at Cushing OK (aerial view)



Source: Google Maps

If the imperative of capitalism is the speedy circulation of things, then how do we explain spaces such as these where commodities lie dormant? At Cushing, not only the circulation of the commodity grinds to a halt, but the circulation of capital also becomes bound up in the investments required to build and maintain these storage facilities. If Marx and others are correct in theorizing that the logic of capitalism requires hastening the pace of accumulation, in part by circulating commodities from production to consumption as quickly as possible, then how do we make sense of these expansive infrastructures stationed at Cushing and elsewhere throughout the global oil assemblage where the flow of billions of gallons of oil reaches a standstill? And, if the purpose of supply chains is to facilitate the smooth and speedy delivery of commodities to markets, then how do we account for supply chain infrastructures that are specifically designed to slow down the pace of these movements?

In a landmark study of supply chain logistics, Deborah Cowen (2014a) notes that a ‘more nuanced’ account of supply chains would ‘highlight the frequent disruptions’ that include ‘the everyday delays of bad weather, flat tires, failed engines, missed connections, traffic jams, and road closures’ as well as more deliberate disruptions that include labour disputes or political actions (2). However, even where Cowen and other scholars of supply chains identify moments where circulation slows down, these moments are generally understood as either unintended or undesired impediments to capital’s underlying interest in maintaining the fluid circulation of commodities. The supply chain literature identifies several different reasons that explain why blockages and backlogs occur, which I suggest can be categorized as imperfections, accidents, and disruptions.

An imperfection can be a deficiency or irrationality in supply chain design or management that has yet to be perfected by logistical sciences. This could include inadequate development of infrastructure that simply cannot handle the volume of products that need to be moved, resulting in bottlenecks. These types of imperfections are commonly found at transfer points, which Gregson et al. (2017) refer to as ‘seam spaces,’ where two transportation modalities meet. They give an example of how ‘freight cargo flows are heterogeneous,’ meaning that they come in at different rates and in different volumes that then have to be consolidated or deconsolidated, thus creating ‘inherent frictions’ (384). In the case of oil, where there is insufficient pipeline capacity such that all the oil being produced cannot get where it needs to go at once, storage will be temporarily required while excess volumes await their turn in the pipes. This need to increase capacity of circulation in order to avoid bottlenecks in delivery is one of the arguments that is frequently made by the oil industry in favour of new pipeline developments coming out of Alberta’s tar sands. Imperfections could also include wrinkles in logistical planning that have yet to be ironed out, such as scheduling inefficiencies. Gregson (2015) argues that inefficiencies and frictions of circulation within supply chain systems become more apparent through careful empirical investigation or ethnography of how the circulation of goods actually occurs in practice, or what she refers to as ‘logistics at work’ (see also Lawhon 2013).¹⁵ Imperfections are frictions that are internal to the supply chain itself, but which can theoretically be fixed or vastly reduced with improved design, modelling, or logistical management. They are treated as techno-managerial issues – areas of inefficiency where logistics have yet to smooth out the

¹⁵ Gregson et al. (2017) later refer to this as ‘logistics-in-action.’

seams of circulation. But, the assumption remains that once these inefficiencies are improved or perfected by logistical sciences, commodities will be returned to constant rapid motion.

Accidents are a second explanation for backlogs that are identified in the literature. Accidents are problems that occur in the supply chain that tend to be accepted as somewhat unavoidable everyday issues that inevitably delay deliveries, such as flat tires or failed engines (Cowen 2014a: 2). In the case of oil, pipelines invariably corrode, crack, split at the seams, and seep on a near daily basis. That spills invariably occur is known, but where and when they occur remains impossible to foresee. When spills do occur, lines must be shut down resulting in temporary bottlenecks and a need for storage. This was the case when the Keystone pipeline leaked in November 2017 near Amherst, SD, which resulted in the pipeline being shut down for nearly two weeks. As a result, the 590,000 barrels per day that would have normally flowed through that line needed to be temporarily stored in tank farms in Hardisty and Edmonton, AB (Lewis 2017). Accidents tend to be the result of technological failings, but they can also be attributed to human error or unpredictable environmental circumstances. To some extent they could probably be mitigated by improving supply chain technologies and logistical planning, such as designing better tires, scheduling more regular maintenance of mechanical parts, or improving traffic infrastructure. But they may also be the result of conditions that seem to be beyond the control of supply chain logicians, such as extreme weather conditions that can bear down upon circulatory infrastructures, reducing circulation to a crawl. Regardless, accidents typically result in only minor and temporary inconveniences or disturbances that require temporary storage, but which the supply chain network as a whole can broadly absorb.

Disruptions are a third source of backlogs. Disruptions are interventions by human actors that deliberately attempt to impeded or inhibit the continued circulation of commodities (Cowen 2014b). They are usually motivated by social, political, economic, or ecological objectives. Cowen identifies labour actions, blockades, terrorist attacks, and pirate raids as examples of these ‘deliberate interruptions’ (2014a: 2). As supply chains become increasingly vital to capital accumulation under conditions of neoliberal globalization, they equally become more vulnerable (Cowen 2014a; Cowen 2014b; Chua 2017a: 264). Consequently, we have increasingly witnessed political and economic struggles play out along these lines rather than at sites of production where traditional Marxist accounts would tend to expect anti-capitalist mobilizations to be located (Cowen 2014a; Chua 2017a; Pasternak and Dafnos 2017). Cowen (2014b) observes that ‘one of the most potent forms of disruption to supply chains comes from logistics workers.’ Chua (2017a, 2017b) raises questions about how solidarities can be built between workers who face unequal working conditions across uneven supply chain space. Supply chain disruptions have also been an effective tactic of Indigenous peoples in North America asserting jurisdiction or sovereignty in opposition to ongoing processes of colonization and resource extraction on their territories (Pasternak 2017; Pasternak and Dafnos 2017). Cowen (2017) additionally points to the occupation of expressways by Black Lives Matter as an example of supply chain disruption. Tsing (2009) argues that by thinking about the different ways people are positioned along supply chains offers an opportunity to ‘imagine the “bigness” of global capitalism without abandoning attention to its heterogeneity’ (150).

As with all categories, the lines that distinguish imperfections, accidents, and disruptions are blurry, and these categories could surely be delineated otherwise. One way

that I differentiate these categories is according to the extent that they are internal or external to the management and governance of supply chain infrastructure. Imperfections can be seen as entirely a result of techno-managerial failing that are internal to supply chain design or governance, whereas social disruptions can be understood as the result of external actors who are opposed to these circulations. Accidents occupy the blurry middle ground between these categories insofar as they are often the consequence of unforeseen external events such as severe weather, but arguably could be accounted for with better logistical planning and infrastructure. The distinctions between these categories are nevertheless contingent upon where we draw our lines between the internal and the external, or in other words the extent to which we believe that the science of supply chain logistics can effectively manage, govern, or account for the entire vast field of socio-ecological unruliness.

Regardless of how we distinguish imperfections from accidents and disruptions, each of these explanations share an understanding that the ultimate objective of capitalist circulation is the acceleration of the speed with which commodities move from sites of production to market. Various different types of impediments can stand in the way of this objective, and these impediments must be resolved before speedy circulation is able to proceed. But it is generally assumed that were the circulatory systems of capitalism to be perfected and running smoothly, commodities would remain in constant motion, minimizing the need for storage and stagnation.

However, the example of Cushing, OK, points to another explanation for oil storage that is not accounted for in critical literature on supply chains – specifically, instances where producers or sellers of a commodity intentionally slow down the velocity of circulation in order to increase profit and accumulate more capital than they would by circulating the

commodity quickly. Indeed, much of the oil stored in tank farms at Cushing is being held not because it is *unable* to move, but rather because sellers *do not want* it to move. What is missed in these abovementioned explanations for storage, as I will argue in the following sections, are those instances in which the circulation of things is deliberately decelerated in the service of capital accumulation, and for reasons that are internal to the logic of the capitalist mode of production.¹⁶

The Annihilation of Time by Space

As Mazen Labban (2008) has argued, the oil industry is structurally prone to overproduction. This is to say that there is an inherent tendency in the industry to produce so much oil that ongoing production inhibits accumulation by creating a glut on the market which then lowers prices and limits profitability. Overproduction is structurally pervasive in the global oil economy in part because so much fixed capital investment is required to

¹⁶ A recent exception in the literature is Gregson et al. (2017) who argue that '[t]he production of obstacles, sudden turbulence and stillings in freight flow may be deliberate strategies or tactics of specific actors to gain advantage/capture value' (383). However, their examples centre on the ways that competing firms or 'logistical actors' capture *existing* value from one another at transfer points ('seam spaces') where commodities change hands or transportation modalities, as opposed to examples where slowing circulation actually *generates* value.

Paché (2007) also discusses how companies might be able to gain market advantage from slow circulation by branding or marketing slowness as cheaper and therefore more price competitive to consumers. But Paché discusses this in the context of a future wherein 'the price of energy will oblige companies' to decelerate circulation, and since the 'degradation of logistical performance will be the only possible way, and it will be necessary to justify this new deal to the consumer' (312). Hence on this account, slow circulation is assumed to an involuntary condition imposed by uncontrollable external factors.

In a review of Cowen's book, *The Deadly Life of Logistics*, Labban (2017) points out that not all capital circulates through space in the same ways or with the same velocity. He reminds us that the 'the physical movement of commodities within production or from production to market' is only one form of circulating capital on Marx's account. Other forms of capital, such as capital fixed in infrastructure, circulates at very different temporalities (267). To this, however, Cowen (2017) replies that the emphasis on logistics and the speedy circulation that she is concerned with specifically concerns the circulation of stuff, as in commodities (268-269). Likewise, the form of circulation that I discuss in this paper relates to what Marx referred to as 'capital in the commodity form.'

produce and circulate this commodity. This is especially the case with the extraction of unconventional fossil fuels which requires massive capital investment in infrastructural megaprojects, such as offshore drilling platforms or bitumen upgrading facilities in Alberta's tar sands (Zalik 2015b; Watts 2015). Large-scale and continuous production becomes necessary in order to make these infrastructures worth the fixed capital investments that they require. In the case of the tar sands, the imperative to produce has proven so strong that even as the price of oil has fallen well below levels at which this extraction remains profitable in recent years, bitumen production has continued to rise nevertheless (Austen 2016). Tar sands producers will avoid turning off the taps at all costs, in part because many of them would still be responsible for servicing loans on their megaprojects regardless of whether or not they continue producing. The costs of shutting down and restarting operations can also be considerable, and in some cases (as with in-situ tar sands extraction), shutting down can potentially 'damage the resource reservoir,' thereby sacrificing the possibility of future extraction (Fielden 2016). The problem for producers is that continuing production can result in an abundant supply of oil which limits the price that the commodity can command on markets. So, if producers want to avoid selling their commodity at low prices and risk taking a loss, but simultaneously want to avoid relenting the rate of production, then they must find other ways to manage supply, such as taking crude out of circulation and placing it in storage. Constraining supply in this way by removing it from circulation can contribute to driving prices back up.

Sellers are especially incentivized to store now and sell later when futures prices are higher than the current market price – a market condition known as *contango*. The Western Texas Intermediate oil markets at Cushing were in a state of *contango* for roughly a three-

year period from November 2014 through to November 2017 (Figure 4.3). At some points over this period, futures prices outpaced spot prices to such an extent that analysts described the market as being in a state of ‘super contango’ (Kilduf 2015). When the spread between the current spot prices and futures prices of oil is greater than the cost of storage over that same period, sellers can lock in a profitable return with relatively low risk – a strategy known as “cash and carry arbitrage.” What results is the production of tank farms at sites like Cushing, where infrastructure is constructed for the purpose of keeping oil at a standstill as the owners of the commodity await higher prices. Far from being a scenario where capital accumulation necessitates the smooth flow and continual circulation of crude and where storage indicates a failure or shortcoming in the system, here oil is stored *in the service of capital accumulation* by producers or other speculators who seek to sell their commodity in the future at prices that are higher than what they can fetch at the present moment.

Whereas Marx described how price discrepancies between different markets that are spatially distant require producers to move their commodities across space in order to maximize returns, here we have a scenario where price discrepancies at different points in time require producers to hold their product over time in order to do the same. If transportation is the circulation of goods across space, then we can think of storage as the circulation of goods across time. And, if the annihilation of space by time is the use of supply chain technologies to accelerate the velocity with which commodities move across space in order to overcome price discrepancies at different spatial locations, then I would suggest that we might think of storage at sites like Cushing, OK and elsewhere where oil remains immobile awaiting better prices promised in the future, as the annihilation of time by space –

that is, the use of the spatial infrastructures of supply chains to hold commodities stationary in order to overcome price discrepancies located at different points in time.

Tank farms at sites such as Cushing function as a type of spatial fix, where the systemic crisis of overproduction in the oil industry is resolved spatially by building up massive storage reservoirs that sprawl out over hundreds of acres, allowing surplus crude to be temporarily removed from circulation. The problem for the oil industry is that the underlying crisis of over-accumulation is not resolved by this spatial-temporal fix of slowing down the tempo of accumulation. Transferring surplus product into holding tanks may allow the impending crisis of overproduction to be temporarily averted, but the crisis can only ever be merely forestalled and displaced – before long it emerges elsewhere. Indeed, this spatial fix effectively transfers the crisis onto the supply chains themselves, and eventually resurfaces as a dilemma of insufficient storage capacity when tanks fill up and additional surplus can no longer be accommodated. In other words, the spatial solution of storing oil eventually leads to its own problem once existing storage capacity is filled.

At this point, if producers remain unwilling to relent production or dump their surplus product onto the market, then more storage capacity must be built. Tank farms and storage infrastructure thus expand outwards, swallowing up ever-larger tracks of land, and imprinting an ever-larger footprint upon the landscape. In just three years between 2014 and 2017 while the market was in cantango, the total capacity of crude storage in the US increased 23% (EIA 2017). EIA inventories recorded a utilization rate at Cushing of 88% in March 2017. Even with new tanks being built, demand for storage outpaced the construction of additional capacity. During this extended period of contango, new tank farms could not be built fast enough to assuage rising demand. Even as the total working capacity of storage tanks

increased, the utilization rate of this capacity remained on the incline, meaning that the available storage capacity declined even as new tanks were rapidly being built (Figure 4.4).

Figure 4.3: Spread between Western Texas Intermediate Spot Prices and Futures at Cushing, OK (dollars per bbl)

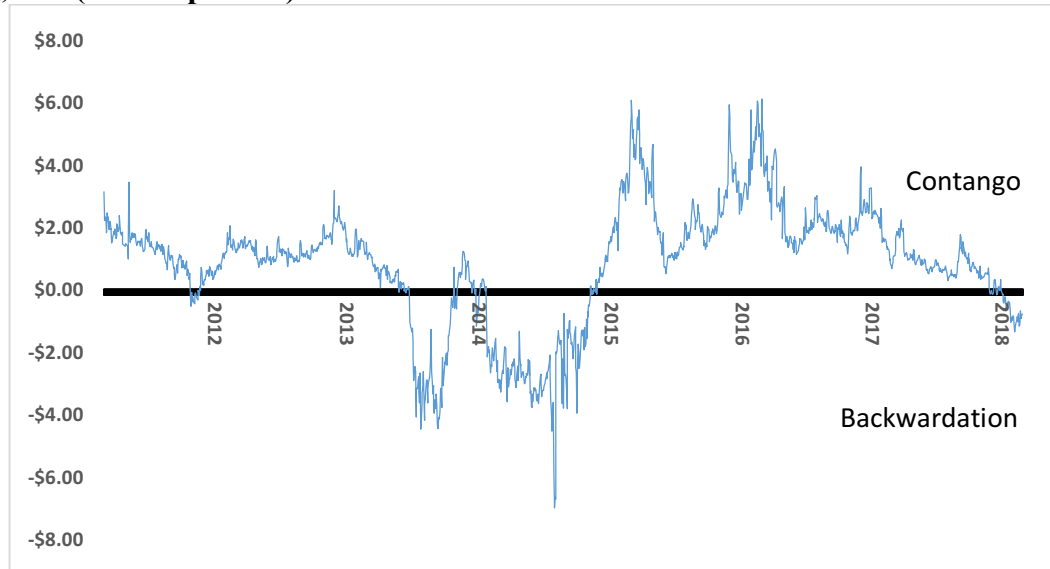


Figure created by Michael Simpson. Source Data: Energy Information Administration

Figure 4.4: Crude Oil Working Storage Capacity and Stocks at Cushing, OK March 2011 – March 2017 (thousands of bbls)

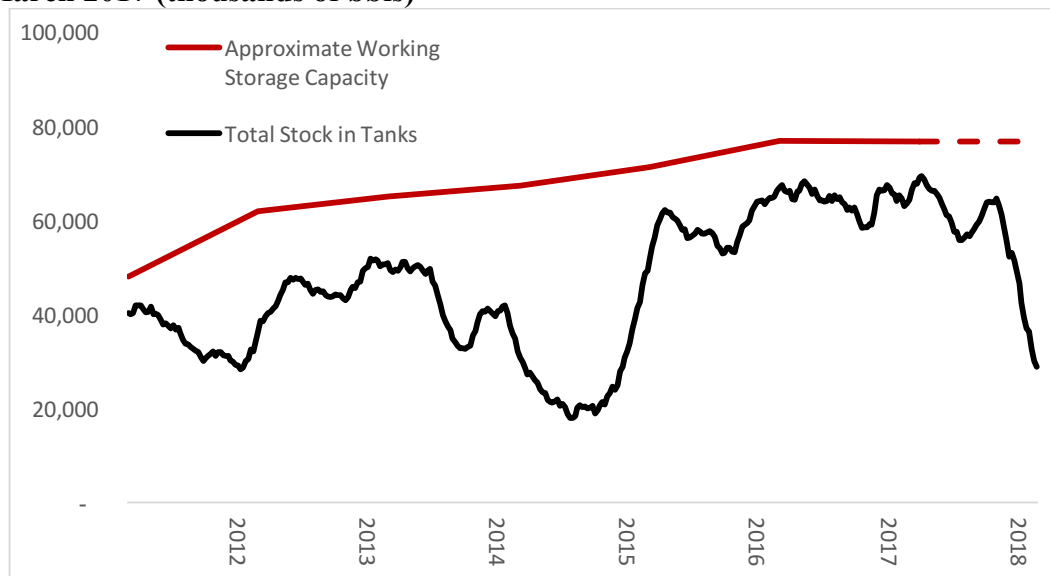


Figure created by Michael Simpson. Source Data: Energy Information Administration

Commodifying the Absence of the Commodity

This repeated pattern of expanding storage capacity by building new tanks that are promptly filled eats into oil industry profits in two significant ways. First, with each new tank farm that is built, more capital becomes fixed into this storage infrastructure, thereby disabling its circulation and potential to generate value through investment in productive activities (Harvey 2014: 76-78). Second, and perhaps even more importantly, as the actual available capacity declines, the cost of storage space becomes inversely expensive, which threatens to negate any profits that might be yielded from actually storing the oil. As available storage space in tanks becomes scarcer and thus increasingly prized, it can be sold at a premium to producers, refiners, oil traders, or smaller users and distributors. As the *Financial Times* reported in May 2016, ‘With crude oil piling up around the world the space inside terminals is now a hot commodity’ (Meyer 2016).

Here we see a situation in which the absence of a commodity (in this case the absence of oil inside tanks) becomes its own commodity. That is to say that empty space inside tanks becomes bought and sold on secondary markets. Because parties that lease tanks pay the same monthly fee regardless of how full their tank is, it makes economic sense to utilize as much of the tank space as possible. If a lessee does not entirely fill the tank with their own product and has a little space to spare, they might sublease the remaining partial tank to another party who can then add their own product to the mix – a situation known in the industry as “co-mingling.” In some cases, where customers have signed long-term leases and have a monthly rate locked in that is lower than the current going rate of storage space, lessees can sublease their tank space to other parties at less than or equal to the going rate in order to turn a profit on the space.

Other firms work as brokers, specializing in the exchange of tank space. Tank Tiger is one such firm. This company formed in 2015 to serve as a clearinghouse for the trading of oil tank leases and subleases, connecting those who have available space with those who need it.

As the company describes on its website:

The enormous growth in the midstream and terminal storage industry has quasi-commoditized what these assets offer to the marketplace. A brokerage function can improve the efficiency of this process. The founders and staff at The Tank Tiger have recognized, and are stepping up, to satisfy the prevailing need created by the excitement and opportunity of these changes. We're kind of like Uber for storage tanks. Think of it as StubHub, Priceline and Match.com all rolled into one (Tank Tiger 2018).

Again, what is being traded here is not the oil itself so much as the empty space in which oil could potentially be stored. Other firms, such as Matrix Global Holdings, auction off oil storage futures contracts. Here, it is not only the empty space that is commodified, but the value of the empty space at a future moment in time that is bought and sold as a commodity.

At moments when capacity at tank farms is scarce or perhaps not even available, producers or speculative investors will also seek out unconventional storage solutions such as leasing railcars that can be filled with oil and left to sit in the terminal as described in the opening of this chapter. As Ernie Barsamian of Tank Tiger was quoted as saying in the *Financial Times*: 'At the end of the day, you just never run out of storage. People just get clever about where they put the barrels' (Meyer 2016). In addition to railcars, oil tankers offer another creative storage option for speculators. According to data from Kpler, in June 2017, nearly 112 million barrels of what is known as 'floating storage' was being held in oil tankers worldwide (Wingfield 2017). In "super contango" conditions, speculators will lease oil tankers for tens of thousands of dollars per day just to keep them stationary. According to Clipper Data (2017), as of February 2017, 64 million barrels of floating storage (the equivalent of 32 Very Large Crude Carrier supertankers) was being held off the coast of

Singapore, which has been described as an ‘oil parking lot.’ In addition to Singapore, volumes of floating storage were reported to be increasing off the coast of Iran, and off the coast of England in the North Sea during 2017 (Wingfield 2017). It has also been reported that oil tankers will take circuitous routes to deliver products to market, hoping that by the time they arrive at their destination prices will have risen. For instance, in March 2016, the *BBC* reported an increase in tankers choosing to round the bend of the Cape of Good Hope in South Africa on the way to Europe from the Persian Gulf or Asia rather than taking the much faster and more direct Suez Canal route. As the report explains:

[the shippers] choose to be at sea longer in certain cases and they can take longer routes, even shopping unsold cargo round various ports in Asia, Africa and Europe, in an attempt to find the right buyer at the right time [...] For now some ships have decided to take those additional thousands of miles round the Cape, hoping that at the end of the voyage they’ll come out in profit. It may seem strange – but in the world of oil, sometimes you’re better off taking the long way round. (Baraniuk 2016)

In other cases, oil tankers have been described as drifting aimlessly, uncertain where to go in order to receive the prices they require for their cargo. In 2017, Bloomberg reported on a ‘lonely drifting oil tanker’ that had left Britain filled with oil heading for China when it suddenly stopped off the coast of Morocco and remained suspended, floating for a week with no interested buyers and thus no immediate destination (Hurst and Blas 2017). Far from supply chains facilitating the speedy circulation that we are used to hearing about in much of the literature, these cases exemplify the very intentional practice of using supply chain infrastructures – trains, oil tankers, pipelines, storage tanks – in order to decelerate the velocity of circulation and forestall the completion of accumulative cycles in order to generate greater profit. These infrastructures, which are typically known for facilitating

speedy delivery, can also act as stationary and immobile containers of capital in the commodity form.¹⁷

Oftentimes, the exchange of ownership of oil in tanks takes place without any actual physical movement of the good at all. In some cases, this is because the commodity is exchanged as an ‘in-tank transfer,’ meaning that ownership merely changes hands on paper. In other cases, when crude futures contracts expire, the balance owing is settled through the exchange of money or offsetting contracts rather than the actual physical delivery of the goods sold. In these cases, profits are derived from the exchange of the commodity but the only things that actually circulates are deeds, contracts, payments, or electronic data. The oil in the tanks itself remain stagnant, functioning much like a giant financial battery, or a bank account accumulating interest. We might think of this as *fixed capital in the commodity form*.

Conclusion: The Pluri-Temporalities of Capitalist Circulation

Simply put, my argument is that there are situations in which the imperative of capital accumulation is to accelerate the speed and velocity with which commodities circulate along supply chains, and there are likewise other situations in which the imperative is to intentionally slow this circulation down. Deceleration is not always indicative of imperfections in supply chain design or logistics, nor is it necessarily the consequence of an interruption. It can also be deliberate, consistent with the ultimate objective of capital accumulation, and internal to the logic of the capitalist mode of production. I am therefore arguing that capital accumulation employs *pluri-temporal cycles* of circulation and

¹⁷ Labban (2017) remarks that the ‘mobile components of fixed capital’ such as ships, planes, trains and trucks ‘need to move constantly so that the value in them is valorized,’ however this example suggests that even these forms of capital can retain value when immobilized or when moving at different tempos and rhythms.

accumulation. Whereas geographers are highly attentive to the ‘multiple, simultaneous spatial strategies’ that capital pursues in order to offset crises in diverse sites of investment (Zalik 2015: 2452-3; see also Smith 1984; Storper and Walker 1989), here I want to call attention to multiple temporal strategies that capital employs, accelerating and decelerating the speed and velocity of the circulation in order to evade economic crisis by responding to the fluctuating and somewhat erratic market conditions that are reflective of global capitalism’s underlying structural contradictions.

But, what is also important to emphasize here is that the multiple temporal logics of circulation are often driven by speculative capital and futures markets. What ultimately determines oil inventories, and thus the rate of circulation, is considerations of futures markets in relation to current spot prices. When the market is characterized by conditions of contango, where futures prices are sufficiently greater than spot prices, there is an economic incentive to store. However, when markets veer towards backwardation, where futures prices decline in relation to spot prices, then the incentive becomes more immediate circulation. Thus, whereas Marx claims that if ‘*circulation time* [...] were = 0, then value-creation would be at its maximum’ (1973: 539), the case of oil is illustrative of why this is not always the case. This may generally hold true in conditions when current prices are lower than spot prices; however, when the opposite is true, delaying the arrival of oil to markets can sometimes allow sellers to obtain higher overall profits in the long-term. The case of speculative oil storage also provides a clear example of how current market prices are impacted by futures markets and speculation, and not entirely determined by the economic fundamentals of supply and demand (Labban 2010). As futures prices rise in relation to spot prices, more oil is stored, which in turn limits supply and causes current market prices to rise.

This speculative activity produces space and nature in distinctive ways, resulting in the creation of new storage facilities and tank farms that sprawl out across landscapes. While much attention has been paid to the ways that neoliberalization produces distinct ‘neoliberal natures’ (Castree 2008a, 2008b; McCarthy and Prudham 2004; Bakker 2009, 2010), I agree with Loftus and March (2015), who note that ‘the discussion of neoliberal natures remains somewhat unsatisfying for the frequent neglect of the growing importance of financial markets, financial institutions and financial actors.’ While recent scholarship in the field of geography and other disciplines have examined the centrality of financial capital and speculation in the contemporary global and economic order (Hall 2010; Pike and Pollard 2010; Sheppard and Barnes 2017; Konings 2018), as well as its ubiquity in everyday life and processes of subject formation (Martin 2002; Hall 2011; Joseph 2014), less attention has been paid thus far to the ways that financialization produces space and nature. As French et al. (2011) write, ‘a glaring lacuna at the heart of the financialization project [is] its relatively uncritical approach to the role of space and place within monetary and financial processes’ (805). I contend that oil markets and sites of storage offer an entry point into thinking more broadly about how futures markets and financial capital produce distinct spatio-natural formations (Knox-Hayes 2013; Loftus and March 2015; Kay 2017).

As I write this chapter, markets have recently veered away from contango and towards conditions of backwardation (Figure 4.3). As this occurs, and the incentive to store is gradually eliminated, spigots on storage units begin to open up, and oil gushes back into circulation. In just four months between November 2017 and March 2018, oil stocks at Cushing were drawn down from nearly 63 million barrels to less than 28 million barrels (EIA). The emptying out of oil storage occurs in an uneven and graduated manner, beginning

with the most expensive storage arrangements, such as floating storage and railcars. Oil being stored in tanks with the most expensive leases (typically those that were leased at premium rates when demand for space was greatest) are the next to go. Tanks that were leased out long-term, at lower rates before space was as highly coveted, will often continue hold oil in storage longer. All of this is ultimately governed by the economics of cash and carry arbitrage. As oil empties out, some firms are left paying monthly fees on empty tanks that they have already signed long-term leases on, which may incentivize them to sublease these tanks at a lower rate in order to try to recoup some of their expenses.

However, the fact that oil is now flowing once again does not necessarily indicate that the underlying structural dilemma that led to storage has been alleviated – it may ultimately result in exacerbating the crisis in accumulation. This is because backwardation does not necessarily mean higher prices and profits – it only means that future prices decrease *relative* to spot prices. Ultimately, the problem of low spot prices can remain. The nature of the global oil assemblage (Appel et al. 2015) is such that even when producers or cartels in one part of the world cut output in order to eliminate global overproduction and rebalance supply and demand, this can result in production increasing or coming online elsewhere, effectively cancelling out any price gains that would otherwise have been made. Moreover, because backwardation results in the emptying out of storage, excess oil is dumped into circulation and onto the market, which further contributes to limiting spot prices. For producers and sellers of oil, the problem of backwardation is that it can ultimately force their hand, leaving no other option but to sell low and potentially take a loss because their storage fix no longer pencils out economically. Moreover, because storage capacity was rapidly built up during the previous period of market contango, the oil industry now faces the additional burden of

having more capital than ever before, fixed in grossly underutilized and unproductive storage infrastructure.

Attention to the ways that futures markets and speculation shape the economics of storage and produce storage space and infrastructures raises further questions. Future research might consider the forms of labour that are required at storage facilities, and the economics of insurance and the security technologies that are employed at these sites where tens of millions of barrels of oil lay at rest. Another angle worth considering would be the geographical location and distribution of tank farms or other storage facilities. Cushing, OK, provides a strategic location for oil storage due to its relatively central location, offering access to and from sites of oil production across the continent, as well as its relative proximity to Gulf of Mexico where many refineries are located and where ports offer access to overseas markets. However, there is another advantage to Cushing, which is the relatively low cost of real estate. In other words, there is an economics to the location and spatial distribution of storage spaces that could be studied in greater detail. Further, whereas this chapter has specifically focused on the circulation of oil, which is a commodity that is specifically prone to overproduction, greater attention to how the economics of storage function differently with other commodities is called for. For instance, questions could be asked regarding why it is that futures markets incentivize the storage of some commodities such as oil, and but not other commodities such as water. Also, greater attention could be given to the material qualities of different commodities, and how these qualities render them more or less amenable to storage, or co-determine the ways in which they are stored (Braun 2005; Bakker and Bridge 2006; Le Billon 2012; Bridge and Le Billon 2017). For instance, because aluminum is not subject to corrosion in the same way that steel is, it can be

stockpiled outdoors in giant lots without requiring protection from the elements. The different material qualities of aluminum and steel therefore demand different storage infrastructure requirements.

Chapter 5 - Capillaries of Capital:

The Actually Existing Supply Chains of Neoliberal Circulation

The Trans Mountain Pipeline was initially constructed in the years 1952-53, with the express purpose of moving crude oil from Alberta's oil patch to refineries and end-consumer markets on the West Coast of Canada. When it was initially built, the pipeline could deliver 150,000 bbl per day to three active oil refineries located at the pipeline terminus on the Burrard Inlet. A fourth refinery began production in 1957. Refining crude within Canada, and producing end-user products such as gasoline and jet fuel to serve Canadian industry and markets that might otherwise be dependent on imports from the US, was considered to be an economic and political priority of Canada at the time. It was on these grounds that the federal government championed the construction of the Trans Mountain Pipeline, claiming that the development was in the 'national interest.' In the mid-1990s, three of the four refineries located on the Burrard Inlet ended their operations. Just as the extraction of bitumen ramped up in Alberta's tar sands, the capacity to refine crude on the West Coast diminished. Increasingly, the products sent along the Trans Mountain Pipeline were loaded onto tankers destined for refineries and markets abroad. Today, the logic of oil production and consumption has shifted away from an orientation around domestic production and consumption and towards a globalized 'hydrocarbon commodity chain' (Bridge 2008). Fossil fuels that are extracted in any one part of the world may crisscross global space, being bought and sold, or speculated upon, numerous times as they are on the way to being upgraded, refined, stored, and ultimately combusted or consumed and disposed of. Today,

the Government of Canada insists that it is in the national interest to ensure that bitumen from the tar sands is made available to these transnational commodity chains.

This reorientation of the spaces of hydrocarbon extraction, production, and consumption has required a concomitant reorientation of the spatial infrastructure of circulation needed to facilitate the movement of fossil fuels to and from these sites. This imperative of reaching global markets helps to explain the Trans-Mountain Pipeline Expansion project – a proposal to triple not just the capacity of the existing pipeline, but to also expand the capacity of all the related infrastructure along the pipeline, including the tank farm and marine terminal located on the Burrard Inlet where oil tankers begin their journey to ship tar sands crude to international markets. However, whereas the existing route of the Trans Mountain Pipeline arguably made a certain amount of sense when it was initially constructed, at a time when the product was primarily intended to serve domestic markets, this same route proves highly problematic and comes with unprecedented risk when used as a site from which to export crude and diluted bitumen. Not only does the transportation of these materials through the Burrard Inlet limit the capacity of bitumen that can actually be shipped overseas at any given time, it also imposes enormous social and ecological risks on the surrounding environment. Even in strictly economic terms then, one might ask why Kinder Morgan proposed expanding this infrastructure along this existing pipeline route rather than proposing an alternate route that would allow for more efficient capitalist circulation. The answer is quite simple – due to the fixed capital and sunken costs already invested in this infrastructure, it is more economical for the company to retrofit this supply chain infrastructure even though this would result in placing constraints on circulation and also impose much greater risk on the surrounding social and ecological environments.

In this chapter, I begin by considering how the shifting political-economic-geographies of global capitalism over the past decades have resulted in a need for new transportation infrastructures that can facilitate a spatial reorientation of material flows. Here, I join other scholars who foreground the importance of supply chain reorganization as crucial sites of struggle under conditions of neoliberal globalization (Tsing 2009; Bernes 2013; Cowen 2014a; Chua 2017a; Danyluk 2017; Pasternak & Dafnos 2017). However, what the case of the Trans Mountain Pipeline points to is how the actual shape that the supply chains of neoliberal globalization take are structured, at least in part, by specific historical-geographical contexts that are encountered along the way. Neil Brenner and Nik Theodore (2002) have argued that neoliberal reforms are ‘rarely, if ever, imposed in a pure form, for they are always introduced within politico-institutional contexts that have been molded significantly by earlier regulatory arrangements, institutionalized practices, and political compromises’ (361). Likewise, I demonstrate in this chapter that, insofar as neoliberalization is a project of spatial re-organization that requires the reorientation of circulatory infrastructures, actually existing neoliberal supply chains are not laid out in a pure or idealized form by global capital; rather they are informed by the existing historical-geographical contexts that they encounter, including pre-existing spatial and infrastructural patterns of circulation.

As a consequence of Trans Mountain’s efforts to cut costs by opting to build along the old pipeline infrastructure, additional risks of social and ecological catastrophe are imposed upon local First Nations of the Burrard Inlet, as well as surrounding municipalities that have opposed this project largely on these grounds. The Tsleil-Waututh First Nation have argued that this proposed development would violate their nation’s law, undermine their

self-determination, and extend the damage that settler colonialism has already imposed upon their lands and people. The City of Vancouver has warned that a spill in the Burrard Inlet could expose over one million people in the city to hazardous airborne fumes. The City of Burnaby has warned that the company's plan to increase the capacity of its tank farms by squeezing additional tanks into the existing space would increase the risk of a catastrophic fire. Despite the strong opposition of local First Nations and municipalities, Canada's National Energy Board not only approved the project, but also ruled that the company is not required to comply with Burnaby's bylaws or permitting requirements, thereby leaving municipalities with little that they can do aside from planning emergency responses to these potential catastrophic scenarios. In this chapter, I attempt to understand the political and economic calculus of how and where supply chain infrastructures are developed in the hopes that this may offer insight into the contemporary spatial logic of colonial capital and the violence that it imposes on human and more-than-human worlds.

The Trans Mountain Pipeline and the 'National Interest'

The development of extractive industries in the tar sands has always hinged on the ability to move bituminous materials to markets. The question of how to build suitable transportation infrastructure has remained a central quandary for the Canadian state since it first became interested in the extraction of this material in the late 19th century. When Robert Bell (1884) entered the Athabasca region in late-1800s on behalf of the Government of Canada to study the potential for industrial extraction, he commented that '[t]he principal obstacle in the way of a speedy development of the oil-fields of the Athabasca is their distance from a sufficient market' (34). Bell suggested that this obstacle could be overcome

by either rail, or a combination of boats and pipeline: ‘Independent of railway construction, an outlet for the oil to foreign markets might be found by conveying it by steamers, for which there is uninterrupted navigation, from the Athabasca River to the eastern extremity of the lake of the same name, and thence by a pipe to Churchill Harbor on Hudson's Bay’ (34-5).

Solving this transportation dilemma became far more pressing half a century later with the discovery of conventional light crude at Leduc, AB in 1947. In the midst of an oil boom, the Government of Canada passed the Pipe Lines Act (1949), which required companies to seek incorporation by special act of Parliament before they could then propose pipeline projects before the Board of Transportation Commissioners. Numerous groups of investors came before Parliament in the years that followed, each seeking to build oil or gas pipelines such as the Canadian-Montana Pipeline, the Champion Pipeline, the Independent Pipeline, the Trans-Canada Pipeline, the Border Pipeline, the Boundary Pipeline, and the Trans Mountain Pipeline. Parliament deliberated each of these projects and determined whether each would be approved or denied based on its assessment of whether the pipeline would serve the “national interest.”

When the Trans Mountain Pipeline proposal came before Parliament in 1951, proponents argued that the project was in the national interest on three discernable grounds. First, it was argued that the pipeline would contribute to national security and the defence of Western liberal democracy. Senator Stanley McKeen from British Columbia asserted that ‘as a defence measure this proposed line is essential to our safety on the West Coast.’ McKeen explained that in the case of a war with the communist powers, Western Europe might lose access to its oil supply from the Middle East and consequently become dependent on North American reserves. Hence, ‘this western pipeline is of great necessity in the event of war’

(Government of Canada 1951c: 130). Member of Parliament Arthur Laing extended this line of reasoning even further, suggesting that oil was essential to Western liberal democracies in times of peace as well as war:

We in the western democracies are faced with a tremendous threat to our institutions and indeed to our very lives. Of all the aspects of defence, there is no greater strategy than the strategy of oil; because in our contemporary age, oil is power. In peacetime it is power to develop new industries, and power to transport people by land and by sea and by air. In wartime it is a vital necessity beyond any calculation. (Government of Canada 1951a: 968)

This association of oil with liberal democracy calls to mind Mitchell's (2011) argument that contemporary democracy is made possible by the combustion of fossil fuels (5), and likewise Huber's (2013) argument that North American political ideals of freedom and individualism are largely premised upon oil. The early proponents of the Trans Mountain Pipeline played on this association of oil with cherished institutions, values, and lifestyles, suggesting that if the pipeline was not approved, and if the oil supply was not secured, then the political and economic freedoms that Canadians had come to enjoy as petro-subjects would hang in peril.

Second, supporters of the original Trans Mountain Pipeline argued that the project was in the national interest because it would ensure that Canadian domestic oil markets would be served before any oil was exported abroad. In the words of Member of Parliament Herbert Wilfred Herridge, this project would ensure 'the use of Canadian resources by Canadians first' (Government of Canada 1951b: 1339). Over the course of the various House of Commons debates about pipelines in the 1950s, this condition came to be known as the "Canada First" principle. At the time, the West Coast of Canada was dependent on oil imports, which leaked valuable US dollars from the Canadian economy. The Trans Mountain Pipeline promised to stop this hemorrhaging by fulfilling British Columbia's oil needs domestically. As explained by Senator McKeen:

British Columbia now has use for approximately 44,000 barrels of oil a day, and this pipeline equipment will have a capacity of 75,000 barrels. The balance will be

shipped to Oregon and Washington, and perhaps to parts of Idaho. British Columbia will not only save the exchange on the cost of 44,000 barrels per day, but will collect in American funds for the balance of 30-odd thousands barrels. (Government of Canada 1951c: 130)

Any surplus oil production that reached the coast would be exported to US markets in Washington and Oregon where it would then provide the additional benefit of bolstering Canada's balance of trade and bringing US dollars into the domestic economy, but only once the oil needs of the British Columbia market were filled. Effectively, the "Canada First" proviso was an argument for import-substitution that could help to free Canada from the perils of a staples economy where growth depended on the export of raw materials abroad (Innis 1999).

Third, the Trans Mountain proposal was presented as congruent with the national interest because it was an "All-Canadian" line, meaning that the full length of the pipeline would remain entirely within the territorial boundaries of Canada. This "All-Canadian" route criterion was deemed significant because it implied that the line would be built entirely by Canadian labourers using Canadian steel. The economic impacts of construction would therefore create a national multiplier effect. Herridge expressed his delight that Trans Mountain 'will follow an all-Canadian route':

It means the use of Canadian materials in construction and in maintenance. It means employment for Canadians. It means permanent tax revenue for the provincial government and for the federal government. The construction of this oil pipeline will mean a great deal to the further development of British Columbia and that development will be to the general advantage of Canada. (Government of Canada 1951b: 1339)

Members of Parliament were so adamant that this condition be fulfilled that the Trans Mountain bill was amended to specify that the company would only be granted incorporation 'provided that the main pipeline or lines for transmission or transportation of oil shall be located entirely within Canada' (Government of Canada 1951b: 1102).

Although all of the political parties represented in the House supported this “All-Canadian” criterion, Percy Wright, Member of Parliament from the Co-operative Commonwealth Federation Party (CCF), argued that this condition should extend to the pipeline’s financing as well. As Wright stated in the House of Commons:

Would it not be much better to have that pipe line owned publicly than to have it owned to a great extent by American capital? [...] I think it is unfortunate that the people of Canada themselves should not control their own basic resources. The only group in Canada able to develop and build a pipe line is the government. We should be developing that pipe line; it should be built by the government, through one of its own agencies. (Government of Canada 1951a: 972)

Wright then forwarded a motion that ‘consideration should be given to the construction and operation of pipe lines by a crown corporation, or by a public agency owned and controlled by the government of Canada.’ (Government of Canada 1951a: 972). This call to use public funds to build the Trans Mountain Pipeline, and to nationalize the country’s fossil fuel infrastructures, is especially interesting given the recent move by Prime Minister Justin Trudeau and the Liberal Party government to do exactly that 67 years later. Curiously, it was the socialist CCF that called for Trans Mountain’s nationalization in the 1950s. But, Wright’s motion was roundly defeated with 11 CCF Members and one independent Member voting in favour, and 172 Members from all the other parties opposed. It appears that the “All-Canadian” proviso would not apply to the Trans Mountain Pipeline’s financing, much of which came from US investors.

However, the importance of these “Canada First,” and “All-Canadian” provisos can be clearly demonstrated by comparing the fate of the Trans Mountain Pipeline with the Border Pipeline, a proposed natural gas line which was debated concurrently. Although both pipelines would run from near Edmonton, AB to the Lower Mainland of BC, the proposed Border Pipeline route was intended to detour into Washington State before tacking back

north to British Columbia. Numerous Members of Parliament spoke decisively against this proposal. Progressive Conservative Member of Parliament Edmund Davie Fulton captured this sentiment nicely before the House:

I think we would be betraying our trust and be derelict in the duty that we owe to the Canadian people if we did not put forth every effort to make certain that these advantages are not forever lost to Canada and forever secure to another country [...] Honourable members can be quite certain that if they do not insist that this line and any other line be built through Canada first so that the resource shall serve Canada first, then those benefits will flow to the United States and will be forever denied to this country, with the consequent result of even further magnifying the disproportion which now exists between the economic development of the United States and that of Canada. (Government of Canada 1951b: 1212-13)

Likewise, Member of Parliament George Cruickshank stated succinctly that, ‘We want to export our surplus to the great country to the south, but we do not want to send our gas to the United States and then back into the great port of Vancouver’ (Government of Canada 1951b: 1215). Ultimately, the Border Pipeline was not approved on the grounds that it did not fulfill the “All-Canadian” and “Canada First” provisos, whereas the Trans Mountain Pipeline was lauded for adhering to their criteria. The Trans Mountain company was granted incorporation and permitted to proceed to the Board of Transport Commissioners for final approval.

However, shortly after being incorporated by Parliament, the newly minted Trans Mountain Pipe Line company approached Canada’s Board of Transport Commissioners seeking approval to build an additional line that would branch off of the Trans Canada mainline at Sumas, BC (Abbotsford today) and redirect oil to Washington State prior to reaching Canada’s West Coast. Approval of this spur line was granted by the Board in 1953 without any further Parliamentary consultation on the matter. Upon learning of this, several Parliamentarians expressed outrage, claiming that the company had breached the conditions upon which incorporation was granted. T.H. Goode claimed that the people of British Columbia and Canada had been ‘hoodwinked’ and ‘double-crossed’ by the pipeline company

(Government of Canada 1953: 2913-5). The bitter resentment of this perceived betrayal lingered for years to come. In 1957, Alexander Malcolm Nicholson reported to the House of Commons that more than half of the oil passing through the Trans Mountain Pipeline was being diverted through the branch line to the US. Nicholson complained that the company had previously ‘indicated that this was to be a project of which Canada could be proud, but now they are more concerned about the United States market than about Canada.’ Clearly, he concluded, the company ‘got the permission of parliament to build a pipeline under false pretenses’ (Government of Canada 1957: 2858).

Several notable points arise from these deliberations over the development of pipeline infrastructure in the 1950s. First, it is important to note that questions regarding the development of pipeline infrastructures were considered matters that could be strictly determined by Parliament. There were no public consultation processes regarding the construction of the Trans Mountain Pipeline at this time, and Canada’s Indian Act prohibited Indigenous people from even accessing legal counsel. Within Parliament, debates over pipelines at this time primarily revolved around questions about how and where they would be built, not if they should be built. At no point during the Parliamentary debates was the desirability of pipelines or petroleum extraction from Alberta’s oil fields called into question. Rather, the development of this industry, and the infrastructure necessary to bring it to market, remained so obvious and taken for granted that it did not need to be deliberated, remaining a matter of consideration that lay outside of the formal political realm. The salient and contested questions within the formal institutions of government were spatial questions about which routes these pipelines would take. However, it appears that on this matter regarding the preferred route, the state and private industry had conflicting interests. Pipeline

companies and their investors preferred the shortest and least technically challenging routes that would connect their product to the largest and most profitable markets. The Canadian state had different ideas and interests, which members of government equated with the “national interest” – namely, to ensure that these pipelines remained entirely within the territorial boundaries of Canada and that they prioritized the supply of domestic markets over exportation to the US.

Ultimately, the routes that were chosen were mediated by both the interests of capital and the state. We could say that the shape of these lines, and the consequent direction that petroleum flowed, was the spatial and material expression of the articulation of a national economic policy with the capitalist interest in accumulation. Consequently, the flow of materials obeyed the contours of the nation state and its geopolitical borders. Arguably, by directing these distributional infrastructures and the flow of oil in certain directions rather than others, the state was not just servicing existing markets, but also actively sculpting these markets in ways that would contribute to defining the spatial configuration of North America’s political economy for decades to come. But, if these infrastructures were built in accordance with a particular political and economic logic that was dominant at the time, and which prioritized domestic production for domestic markets, then it should follow that changes to this dominant logic might require new infrastructural arrangements in order to alter the direction of material flows accordingly. In the following section, I consider how this infrastructural reorientation became necessary as the prevailing political economic orthodoxy shifted from one that prioritizes domestic markets (Fordism) to one that prioritizes global markets (neoliberalism).

Tracking the Tar Sands Commodity Chain

In 2013, 60 years after the initial construction of the Trans Mountain Pipeline, Kinder Morgan Inc. filed an application with the National Energy Board (NEB) to twin the existing line and nearly triple the capacity of crude oil flowing from the tar sands to Burnaby, BC from 300,000 to 890,000 barrels per day. This expansion project was just one among numerous tar sands pipeline developments that were proposed at the height of the 2008-2014 bitumen boom. The recent interest among midstream oil companies in building massive new pipeline developments reflects, at least in part, the industry's need to keep pace with the rapid escalation of bitumen extraction (Chapter 3). Kinder Morgan identified growth in tar sands production as one of the primary rationales for the proposed expansion. As volumes of heavy crude extracted from the tar sands have increased substantially over past decades, pipelines in this region can no longer accommodate supply, creating bottlenecks in the supply chain. According to a 2018 report by the Canadian Association of Petroleum Producers (CAPP), Western Canada crude oil production already exceeded pipeline capacity in 2017, and with new tar sands extraction operations scheduled to come online over the next decade, production is forecasted to climb by an additional two million barrels per day by 2035, which would require an expansion of pipeline capacity by nearly 50% in order to accommodate expected volumes (CAPP 2018: 20-1).¹⁸

However, whereas tar sands production continues to expand, refining capacity in Canada has declined since the 1970s (CAPP 2017: 7.3) as the industry has increasingly come to rely on refineries located in the United States. Refineries across Canada have shut down

¹⁸ On average, 4.2 million barrels of Western Canada crude were produced per day whereas pipeline capacity was slightly more than 4 million barrels per day. CAPP also reports that on average, approximately 660,000 barrels per day of pipeline capacity remained unutilized for various reasons, including equipment shutdowns and downstream constraints.

operations and closed their doors. Whereas 45 refineries were active in Canada in 1958, and 41 as recently as 1974, just 17 remained operational in 2016. In British Columbia, refining capacity has decreased by over 58% since 1993. Where there was once seven operating refineries in the province, only two operating refineries are located in BC today (CAPP 2017: 7.3).¹⁹ The sole remaining refinery located at the terminus of the Trans Mountain Pipeline has the capacity to refine only 55,000 of the 890,000 barrels pumped through the Trans Mountain Pipeline per day. Most of the expanded capacity of crude shipments along the pipeline is destined for export to refineries located in the US and overseas.

In fact, more than half of the crude being transported from the tar sands via the Trans Mountain Pipeline currently heads directly to refineries in Washington State via the Sumas spur line. Of the remaining crude that arrives in BC's Lower Mainland, less than half is refined at the Burrard Inlet facility and the rest is shipped from the Westridge Marine terminal.²⁰ A report published by Greenpeace (Donaghy 2018) suggests that most of the oil tankers currently leaving the Westridge Marina are headed to refineries in California (specifically to Long Beach and the San Francisco Bay area), with additional smaller barges headed to refineries in Washington State. The same report suggests that less than 10% of tankers and barges leaving the Westridge are headed towards Asian markets at present.²¹

According to a report by *Bloomberg* published in July 2018, only two of the tankers leaving

¹⁹ One located in Burnaby and the other in Prince George.

²⁰ Extrapolating from Trans Mountain's figures provided in Figure 1, if 54% of the product sent along the 300,000 bbl/day pipeline is diverted directly to Washington state refineries, and if an additional 4% remains in Kamloops, this implies that roughly 126,000 bbl/day reaches the Lower Mainland. If the capacity of the refinery at Burnaby is 55,000 bbl/day, then I am assuming that the remaining product must be shipped from Westridge Marina. Some of this shipped product may be refined in Alberta before being transported, however most of this product would be shipped as crude (either conventional crude, syncrude, or dilbit).

²¹ Similar findings have been reported by Reuters (Gordon & Nickel 2018)

the Burrard Inlet between in the past year headed straight to Asia (Orland & Obiko Pearson 2018).

Gavin Bridge (2008) describes how during the 1980s, following a decline in oil prices, oil companies attempted to reduce costs by outsourcing many of the processes that are required to produce oil (407-8). As a result, production has become ‘organized via inter-firm networks that massively exceed the boundaries of the nation–state’ (393) – what Bridge describes as a global ‘hydrocarbon commodity chain.’ The trend in Canada away from refining crude and towards the export of raw crude abroad is thus consistent with a general pattern that Bridge identifies as the spatial reorganization of oil production over the past several decades. Whereas the impetus for building the Trans Mountain Pipeline in the 1950s was to deliver crude to domestic refineries that could then produce end-consumer fuels destined for British Columbia markets, it is clear that today the impetus for the Trans Mountain expansion is primarily to increase the delivery of unrefined crude oil (syncrude and dilbit) to refineries outside of Canada.

This is precisely the reason that Unifor, Canada’s largest private sector union that represents over 4,000 workers in the tar sands, opposes the Trans Mountain expansion project. As a representative of Unifor testified before the National Energy Board in 2015, the union opposes this project on the grounds that it would ‘export jobs’ and ‘undermine investment in a value-added, diversified and more stable oil and gas sector.’ The union noted that ‘an ever-growing proportion of unprocessed bitumen will be exported to foreign markets, which means that Canada will forego the enormous economic and employment benefits of adding value to Canadian resources through upgrading, refining, and secondary manufacturing’ and added that Trans Mountain is ‘just one of several pipeline projects

primarily intended to facilitate the export of bitumen for upgrading and refining in other countries' (National Energy Board 2015a).

From the perspective of extractive industries in the tar sands however, greater access to refineries and foreign markets increases the price that tar sands bitumen can yield and thereby raises profit margins. When demand for transportation outstrips capacity, producers must either pay a premium to secure space for their product in the pipelines, or ship their product by rail, which is even more expensive, costing an approximately \$15 to \$20 more per barrel to ship to US Gulf Coast refineries. Ultimately, bottlenecks in the supply chain result in higher delivery costs for producers, rendering tar sands heavy crude less competitive and less profitable than other crude supplies available on world markets.

Western Canadian heavy crude is typically sold to US refineries at a discount relative to light sweet crude to begin with, because it is considered a lower quality hydrocarbon that requires more extensive treatment at refineries. Whereas the average price differential between the benchmark for tar sands heavy crude (Western Canadian Select) and the benchmark for US light crude (West Texas Intermediary) has been about US\$15 per barrel, recently this discount reached as high as US\$28 (Canadian Energy Research Institute 2017). The industry argues that increasing pipeline capacity would reduce the price discrepancy of Western Canadian heavy crude by lowering transportation costs and diversifying potential buyers, which will ultimately result in higher netbacks on each barrel of crude exiting the tar sands.

Having more options for moving heavy crude also provides the industry with greater resiliency in the face of volatile and unpredictable economic conditions. Kinder Morgan

states this explicitly in the application for the Trans Mountain expansion that it submitted to the NEB in 2013:

[T]he Project is required to provide needed flexibility for Western Canadian producers. Oil markets are continually subject to changing market conditions, refinery shut-downs, supply interruptions and other events that impact markets. In order for Western Canadian producers to obtain access to the highest value markets, sufficient pipeline capacity to alternative markets is required. (Kinder Morgan Canada 2013a: 22).

Elsewhere in its application, the company reiterates the importance of this flexibility in order to ensure that the industry can adapt to unpredictable and rapidly changing conditions:

The relative attractiveness of markets can change quickly, as supply and demand fundamentals shift. Having transportation infrastructure that accommodates shifts in market preferences creates value, by providing the option and ability to redirect flows as markets change [...] optionality enables Canadian producers to maximize the value they derive from their production. (Trans Mountain Pipeline ULC 2013b: 44).

The recent push to build pipeline megaprojects is thus driven not only by the desire to increase capacity to accommodate greater production, but also by the objective of oil companies to diversify markets and pathways through which heavy crude can move within the global oil assemblage, thereby lending greater versatility to an industry that is prone to oscillating conditions and systemic crisis.

When comparing the explanation for the Trans Mountain expansion with that of the explanation for the pipeline's initial construction in the 1950s, it becomes apparent how widely the rationale for this project has diverged from its origins. The present-day prioritization of export markets stands in direct contrast to the principles of "Canada First" that were mobilized in justification of the pipeline decades ago. As Kinder Morgan's project application states clearly, 'The primary purpose of the Project is to provide additional transportation capacity for crude oil from Alberta to markets in the Pacific Rim including BC, Washington State, California, and Asia' (Trans Mountain Pipeline ULC 2013a: 4). The expansion project also entails a threefold increase of loading capacity at the Westridge

Marine Terminal in Burnaby, BC where bitumen is transferred onto transoceanic oil tankers and shipped to overseas markets, and the company has estimated that their project would increase oil tankers leaving Westridge from approximately five to 34 per month.

Curiously, much like their 1950s counterparts, proponents of the pipeline expansion claim that this development is in the “national interest.” Kinder Morgan argued in its application to the National Energy Board that it is in the interest of the Canadian public to ensure that oil companies generate maximum possible value for their product:

[The Trans Mountain expansion] is required from a broader public interest perspective to ensure that producers and governments obtain the highest value for their petroleum resources. Canadians are the ultimate owners of petroleum resources as represented through their provincial governments. The Canadian public is deprived of receiving the full market value for these resources when it is not possible to access the highest value end markets. (Trans Mountain Pipeline ULC 2013a: 22).

This has also been the position of Canada’s federal government. Under the leadership of Prime Minister Stephen Harper (2006-2015), the government portrayed pipeline opponents as opponents of the nation, and suggested that their critique on these projects lied outside of the realm of legitimate political discourse. Canada’s former Minister of Natural Resources, Joe Oliver, labelled opponents of pipelines and other extractive industries as ‘radical groups’ that ‘use funding from foreign special interest groups to undermine Canada's national economic interest’ and ‘threaten to hijack our regulatory system to achieve their radical ideological agenda’ (Oliver 2012). The following year, Canada’s Ministry of Public Safety laid out a new counter-terrorism strategy which identified ‘energy, transportation and oil and gas assets’ as ‘critical infrastructures,’ and called out environmental groups as a potential source of ‘extremism’ that could resort to ‘a more violent, terrorist strategy to achieve their desired results’ (Government of Canada 2013). Since at least 2013, the RCMP has operated a ‘Critical Infrastructure Intelligence Team’ that works in direct collaboration with the oil industry to protect the industry’s infrastructure from threats. In 2015, Canada’s federal

government attempted to extend the scope of its anti-terrorism legislation, expanding government powers to monitor, surveil, and disrupt any ‘activity that undermines the security of Canada’ including ‘interference with critical infrastructure’ or with the ‘economic or financial stability of Canada’ (Government of Canada 2015).²²

Since the Liberal Party came to power in 2015, the federal government has arguably toned down some of this rhetoric, but the Liberals have nevertheless continued to insist that moving crude to international markets is a matter of national interest. In 2018, Canada’s Minister of Natural Resources, Jim Carr, stated that the Trans Mountain Pipeline expansion ‘will be built because it is in the national interest [and] the national interest means that we safely and securely get our resources to market’ (Government of Canada 2018). Likewise, Prime Minister Justin Trudeau asserted in defence of his government’s approval of the Trans Mountain expansion that ‘getting resources to market in smart sustainable ways is a fundamental responsibility of the prime minister and of the Canadian government’ (Government of Canada 2016). Evidently, Trudeau believed in this statement so adamantly that in 2018 his government paid \$4.5 billion dollars to purchase the pipeline from Kinder Morgan, and committed billions more to build the expansion itself when it seemed that the company was ready to walk away from the project.

The ‘Actually Existing’ Supply Chains of Neoliberal Circulation

If the purpose of constructing the Trans Mountain Pipeline in the 1950s was to deliver crude to refineries that would produce fuels for domestic consumers and industry, then

²² For more on the Harper era efforts to securitize ‘critical infrastructure’ by criminalizing dissent against pipelines and the tar sands, see also: Le Billon and Carter 2012; Pasternak & Dafnos 2017; Peyton & Franks 2016; Preston, 2013; Zalik 2011, 2015b).

routing the Trans Mountain Pipeline to the Burrard Inlet in Burnaby BC made a certain amount of sense. However, as a place from which to export crude overseas on tankers, this location is far from ideal because the Westridge Marine Terminal on the Burrard Inlet is not on open waters, and as a consequence tankers must navigate a narrow stretch of shallow, active waters that extends about 20 kilometers inland from the sea in order to access this facility (Figure 5.1). Not only does the navigation of these waters poses unnecessary social and environmental risk that could otherwise be avoided were the terminal located elsewhere, but even when considered from a strictly economic perspective this location proves disadvantageous. Due to the Inlet's challenging conditions, including tidewater passing under several large bridges that cross overhead, the size of oil tankers that can access the terminal is restricted to the Aframax class, which have a maximum capacity of 120,000 deadweight tonnage.²³ Further, these vessels are only able to carry roughly 80% of this capacity through the inlet, otherwise they would be weighed down too deep in the water and potentially risk scraping the sea floor. Once they are loaded, the tankers are permitted to pass through the inlet only during daylight slack waters, thereby constraining the frequency and speed at which bitumen can be shipped to markets (Port Metro Vancouver 2014).

As discussed in Chapter 4, scholars of supply chain logistics emphasize the imperative of capital to ensure the smooth, continuous and unencumbered circulation of commodities across space for the purpose of accumulation under conditions of neoliberal globalization (Cowen 2014a; Danyluk 2018). If this is so, then we might ask why Trans Mountain would propose to expand its existing marine terminal infrastructure at Westridge

²³ Compare this to VLCC (Very Large Crude Carrier) class of oil tankers which have a maximum capacity of 320,000 deadweight tonnage. See: <https://clearseas.org/tankers/>

rather than re-routing the pipeline to a location where crude could be loaded onto larger tankers and navigate through open waters without the same restrictions placed on the volume and frequency of transit. The NEB asked this as well while it was assessing the Trans Mountain proposal in 2014, and requested that the company submit documentation explaining why Westridge was their preferred location. The documentation that the company provided in response indicates that they did in fact consider several alternative locations for siting a marine terminal. The potential site that seems to have been given the greatest consideration as an alternative to Westridge was at Roberts Bank located near Tsawwassen in the municipality of Delta, BC (Figure 5.2). In Trans Mountain's assessment of this location, the company notes that this site would offer numerous benefits. Perhaps most importantly, the report identifies that:

The ability to service larger tankers is a key benefit of locating a tanker terminal at Roberts Bank. For example, a VLCC could in theory take almost three times the load of a partially laden Aframax tanker, which in turn would result in [a reduction in] the number of tankers within the marine network. Such a reduction would reduce the probability of tanker related accidents during transit and increase the expected return period for oil spills resulting from tanker operations (Trans Mountain 2014: 188-9)

Further, the Trans Mountain report notes that because the Roberts Bank location would reduce the number of tankers needed to export crude, this could result in a reduction of the underwater noise that is known to have harmful effects on the endangered orcas of the Salish Sea. Avoiding the Burrard Inlet would also reduce 'the overall complexity of navigating a tanker between the terminal and sea' and the distance that tankers would have to travel to and from port, thereby decreasing 'the probability of tanker related accidents during transit and increase the expected return period for oil spills resulting from tanker operations' (188). Despite these significant apparent advantages, the report concludes with a brief statement reading that '[o]verall Trans Mountain's rationale for the Westridge Marine Terminal as the preferred alternative was based on the expectation that Roberts Bank would result in

significantly greater cost – the estimated \$1.2b higher capital cost and assumed higher operating costs for the Roberts Bank alternative.²⁴

Figure 5.1: Route of Oil Tankers to and from the Westridge Marine Terminal through the Burrard Inlet



Source: Wilderness Committee (2018). Reproduced with permission of Peter McCartney. Retrieved from: https://www.wildernesscommittee.org/kinder_morgan_pipeline_route_maps

²⁴ In addition to the cost savings, the company also notes that the Roberts Bank location would entail a ‘larger footprint and additional environmental effects.’ However, the ‘additional environmental effects’ that it refers to are specifically associated with the construction of a new facility – the company did not conduct a complete environmental assessment that would have allowed for a complete comparison of both sites. Arguing against the Roberts Bank location on environmental grounds seems specious, especially given the companies initial findings indicated that the Roberts Bank facility could potentially reduce both the likely of an oil spill and noise pollution in the Salish Sea.

Figure 5.2: Map showing the location of Roberts Bank in relation to the Westridge Marine Terminal



Source: Wilderness Committee (2018). Reproduced with permission of Peter McCartney. Retrieved from: https://www.wildernesscommittee.org/kinder_morgan_pipeline_route_maps

Gordon Clark and Neil Wrigley (1995) have argued that ‘sunk costs’ – that is, costs that are committed to a particular use and location and which are difficult to retrieve and recommit elsewhere – figure importantly in firm decisions to undertake economic restructuring. They contend that firm management of these sunk costs can help to explain why ‘the inherited configuration of production is not simply annihilated by the imperatives of economic competition,’ and that the managing of these assets can also help to understand ‘the distinctive spatial patterns of restructuring’ from Fordist to post-Fordist economic models (206). Indeed, the fact that Trans Mountain had significant capital already sunk into the existing site at Burnaby helps to explain this firm’s decision to expand that infrastructure rather than building new infrastructure that would be better suited for the purposes of speedy circulation and reaching global markets. As Trans Mountain (2015) concluded in its

assessment, building entirely new infrastructure would result in '[f]ewer opportunities to benefit from existing operations, infrastructure, and relationships,' including 'the use of existing Trans Mountain right-of-way, facilities, programs, and personnel as well as synergies with other existing infrastructure, such as road access, power, and marine infrastructure' (180).

In relation to the geographies of neoliberal supply chain infrastructure, this case suggests that although neoliberalism's ideal spatial form may be one that ensures the speediest and most efficient movement of commodities across global space, this ideal often remains beyond reach in some (perhaps most) cases because these infrastructures are rarely, if ever, imposed upon a flat socio-geographic environment. Here, I follow scholars such as Neil Brenner, Nik Theodore, and Jamie Peck who emphasize that the actual form that neoliberalization takes differs from one location to the next because those who implement this restructuring encounter different social, political, historical, and geographical contexts and impediments to which they must adjust and adapt. As Brenner and Theodore (2002) write, the 'actually existing' shape that neoliberalism takes is 'defined by the legacies of inherited institutional frameworks, policy regimes, regulatory practices, and political struggles' (349). Here I would add that the spatial patterns that neoliberal circulation follows are likewise informed by the infrastructural legacies of previous political-economic formations.²⁵ The ways in which these infrastructural legacies may constrain the volume and

²⁵ Staples theorists of Canadian political economy have long noted that the movement and directionality of commodities tend to be structured by the infrastructures that were put in place to serve industries during previous periods of economic development. Harold Innis (1999) argued that early staples industries in Canada, including the fur trade but also importantly the forestry industry, informed the development and spatial organization of subsequent industries in Canada. Innis wrote that 'the organization of the fur trade occasioned the organization of other lines of trade' (398), and likewise that the forestry industry 'was largely responsible directly and indirectly for the improvement of waterways and for the construction of railways prior to Confederation' (396), which influenced settlement patterns and the location of industrial development (see also Barnes 1996; Braun 1997b).

temporality of neoliberal circulation remain largely unaccounted for and undertheorized in contemporary scholarship of supply chain logistics, which tends to emphasize the imperative of securing smooth and frictionless flows.

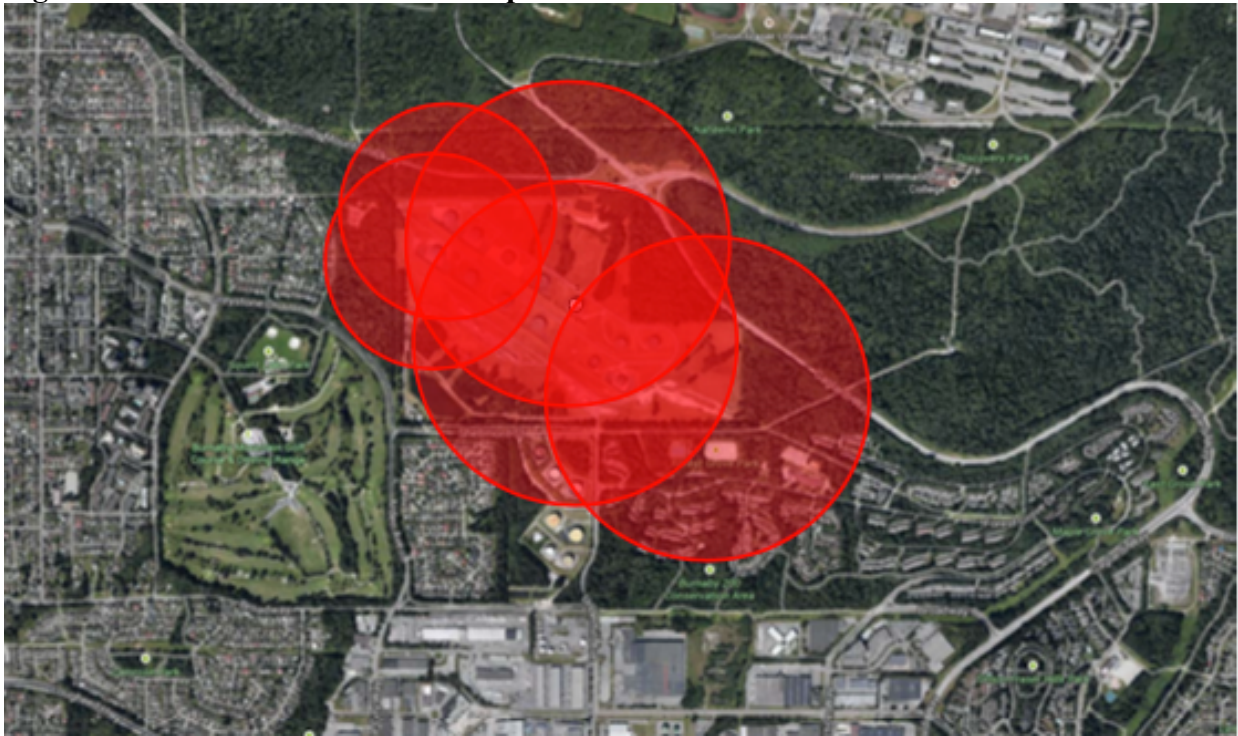
However, while the decision to retrofit existing facilities rather than building up entirely new infrastructure may reduce companies' fixed capital investments in circulation, in the case of Trans Mountain doing so would incur other enormous costs in the form of social and ecological risks that are borne by surrounding municipalities and First Nations. The City of Vancouver has concluded that the consequences of a diluted bitumen spill in the Burrard Inlet would be 'catastrophic' (National Energy Board 2015b: 77), potentially exposing over one million people in downtown Vancouver to unsafe levels of Benzene from airborne fumes (Levelton Consultants 2015: 30). The city also explained that, because the population density of downtown Vancouver is so high and the ability to vacate downtown is restricted by bridges, evacuation is not a reliable option in the case of such a public safety emergency. Instead, the best emergency response would be to 'shelter-in-place,' meaning that the entire downtown population would be told to remain within the emergency area and to find a place indoors until the emergency conditions have passed (National Energy Board 2015b: 32-34). However, as the City also notes in its 2015 written submission to the NEB, there are high populations of vulnerable populations in downtown Vancouver, including homeless, elderly, and disabled people for whom finding shelter would be difficult (National Energy Board 2015b: 32-33).

A group called the Concerned Professional Engineers has raised additional concerns regarding the oil tanker route through the Burrard Inlet, noting the danger of vessels colliding with the Second Narrows rail bridge. This group has drawn attention to the fact that vessels

have collided with this bridge in the past, and they warn that in a worse case scenario an Aframax tanker could potentially dislodge the railway bridge and, due to the ship's momentum, carry it into the adjacent Ironworker's Bridge, a busy highway crossing (Concerned Professional Engineers 2014).

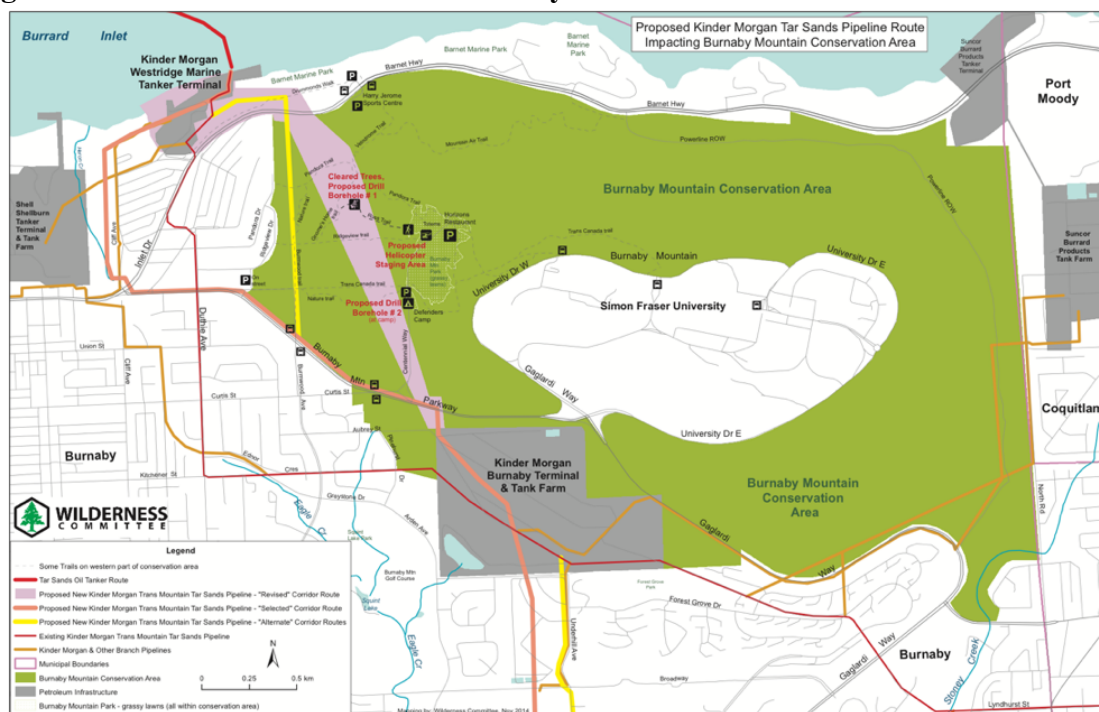
The City of Burnaby has also identified potentially catastrophic risks associated with retrofitting the crude oil infrastructure around the Burrard Inlet. The expansion of the marine terminal at Westridge would require the tripling of the capacity of Trans Mountain's existing tank farm located on Burnaby Mountain. The company has proposed to increase the number of tanks on their existing property from 13 to 26, and they would accomplish this by reducing the space between each tank and by pushing the tanks out against the property's edge. A report compiled by the City of Burnaby's Fire Department explains that the 'mass densification' of tanks on this property increases the likelihood that a fire could spread from one tank to the next and beyond the tank farm facility. The report explains how, in the case of a tank fire, there is a danger of a 'boil over event,' during which heated and molten crude oil could shoot out of the tanks and spread fire into the surrounding neighbourhood (City of Burnaby Fire Department 2015: 4; see also Figure 5.3). Since the 1950s when the Burnaby Mountain tank farm was initially built, a densely populated residential area has been built up around this facility, including Simon Fraser University which is located less than a kilometer uphill (Figure 5.4). A major fire and boil over event could make the only access road to and from the university unpassable, potentially stranding tens of thousands of people on the university campus with no feasible means of evacuation (PLG Environmental Consultants 2016).

Figure 5.3: Tank Farm Boil Over Impact Areas



Source: City of Burnaby Fire Department (2015), p.61.

Figure 5.4: Location of Burnaby Mountain Tank Farm in relation to adjacent neighborhoods and Simon Fraser University



Source: Wilderness Committee (2018). Reproduced with permission of Peter McCartney. Retrieved from: https://www.wildernesscommittee.org/kinder_morgan_pipeline_route_maps

The Tsleil-Waututh First Nation also conducted an assessment of the Trans Mountain proposal and concluded that the project would violate the Nation's laws, and that it would threaten the cultural, spiritual, and economic well-being of their people. In their report on the findings of this assessment (Tsleil-Waututh Nation 2015a), the nation explains that their inherent jurisdiction and law require them to 'protect, defend, and steward our territory and the responsibility to restore the conditions that provide the foundation our nation requires to thrive' (86). The report affirms that the impacts of this particular development proposal cannot be assessed in isolation from the combined impacts of settlement and industrial development on the socio-ecology of the Burrard Inlet over the past century and a half:

The decline of Burrard Inlet was evident by 1885 after herring were massively over-harvested and became locally extinct. By 1972 when harvest of bivalves like clams, oysters, and mussels was banned, cumulative effects of urban, commercial, and industrial development had exceeded what is allowable under Tsleil-Waututh law. The best indicator of this is that our subsistence economy was devastated, leaving us without the natural resources we once depended upon for food or trade like salmon, herring, clams, and birds. After thousands of years of supporting our Tsleil-Waututh way of life, in less than 200 years, key marine resources in Burrard Inlet were scarce, contaminated, or made inaccessible. It is essential to know both the historical context and the compromised environmental integrity that exists today in order to understand what our stewardship obligation requires of us. (Tsleil-Waututh Nation 2015b)

The Tsleil-Waututh report finds that the Trans Mountain proposal would contribute to furthering the accumulative effects of settler colonial development. These impacts include an increase of tanker traffic in the Burrard Inlet which would cause further erosion of the Inlet's shoreline where important cultural sites are located, and an increase in the dangers associated with a potential oil spill that could result in irreparable harm to these sites and to the Inlet's marine life, including the salmon, herring, clams, and birds that have traditionally provided staples of the Tsleil-Waututh diet (Tsleil-Waututh Nation 2015a: 85). The report asserts that, in accordance with Tsleil-Waututh law, the nation 'cannot consent to new development

proposals that further contribute to cumulative effects, threaten our objectives for marine stewardship, and delay or deny re-establishment of our subsistence economy’ (Tsleil-Waututh Nation 2015a: 3). In conclusion, the Tsleil-Waututh assessment report states that ‘the [Trans Mountain] proposal does not represent the best use of our territory or its water, land, air, and resources for the present or the future,’ and that ‘if implemented without Tsleil-Waututh consent, the proposal denies Tsleil-Waututh and our future generations control over a critical decision about our territory, in violation of Tsleil-Waututh law’ (86). Effectively, the report argues that this project would constitute a further act of colonization against the Tsleil-Waututh people insofar as it would undermine the self-determination of the Tsleil-Waututh nation and harm the ecological well-being of the Burrard Inlet, which is the basis of their people’s food system, economy, and spiritual practices.

Conclusion

The purpose of this chapter is to call attention to the ways that recent pipeline developments, such as the Trans Mountain expansion, are a consequence of global political economic restructuring and the spatial reorientation of material flows that this restructuring entails. Trans Mountain was first built during the post-war period, when the prevailing economic orthodoxy suggested that domestic production should serve domestic markets. In accordance with this thinking, Trans Mountain was intended to follow an “All-Canada” route, and was intended to serve “Canada first.” However, the emergence of neoliberal restructuring in Canada during the 1980s and 1990s entailed gradual transformations in both the landscapes of fossil fuel extraction (Chapter 3), as well as a reconfiguration of the landscapes of distribution or circulation. As global production networks and global markets

each gained new prominence in the capitalist economy, the infrastructures that are needed to transport commodities required reorientation in order to accommodate larger and more frequent flows of materials from new frontiers of extraction to new sites of production and consumption (Bridge 2008; Cowen 2014a; Coe & Yeung 2015). The “free markets” that neoliberal economic doctrine celebrates are not ontologically prior entities with repressed urges, desires, or demands that await liberation from borders, regulations, or other prohibitive barriers by neoliberalization. Just as domestic markets are arranged, ordered, and organized by historical processes, global markets are political and economic constructs, and the development of supply chain infrastructures is one of the necessary conditions that bring these constructs into being, giving these markets a specific shape.

As prevailing political orthodoxies have changed, so too have the political rationales and justifications for pipeline developments. Again, the Trans Mountain Pipeline case is telling here because proponents of the original line and proponents of current day expansion each argued that the project was in the ‘national interest’ of Canada, and yet the national interest appears to have a completely different (arguably the opposite) meaning today than it did six decades ago. Whereas proponents in the 1950s suggested that the national interest was to ensure ‘the use of Canadian resources by Canadians first’ (Government of Canada 1951b: 1339), today proponents suggest that it is in the interest of Canadians to ensure that crude oil is shipped overseas so that oil companies can receive ‘full market value for these resources’ (Trans Mountain Pipeline ULC. 2013a: 22). Of course, the idea of a national interest is a fluid concept that is able to articulate and re-articulate with a wide variety of discourses in different times and spaces, but in this case this shift in understanding appears to parallel the changing political cartographies associated with the transition from Fordism to

neoliberalism. If the national interest during the Fordist era was oriented towards ensuring the production and consumption of commodities within the congruent and bounded territorial entity of the nation-state, under the political cartographies of neoliberalism the national interest is reconfigured along the securitized lines of the gateways, corridors, and networked infrastructures that ensure the seamless flows and movements of materials and bodies to and from sites of production and accumulation located across global space (Cowen 2014a).

However, whereas recent scholars of supply chain logistics have emphasized how the neoliberalization of production and trade hinges on the spatial reorientations of supply chain infrastructures in order to secure the rapid movement of commodities across global space, the case of the Trans Mountain Pipeline expansion helps to demonstrate that the routes that actually existing infrastructures take may not always follow this idealized form. In the case of Trans Mountain, this company has proposed to expand its export capacity at an existing marine terminal even though the location of this terminal constrains both the size of tankers that can access this site, and the windows of times during which these tankers can leave port. A primary consideration for this decision appears to be that the fixed capital already allocated into this existing infrastructure renders the decision to retrofit these infrastructures more economically efficacious in the immediate term, even though building new infrastructure in another location might prove more conducive to the speedy flows of commodities that neoliberal markets typically demand. This suggests that the spatial organization of actually existing neoliberal supply chains may be structured in part by the spatial logic of infrastructures that were previously designed to serve different economic purposes, thereby hampering the rapid and consistent movement of commodities today. As Jamie Peck (2010) has nicely written, neoliberalism is ‘doomed to coexist with its unloved others,’ and can only

ever exist in a messy and emergent imperfect form (7), and I think that this statement applies to neoliberal supply chain infrastructures such as the Trans Mountain Pipeline.

However, while decisions to retrofit existing supply chains can potentially save firms the burden of sinking additional capital into fixed infrastructural investments, in the case of the Trans Mountain Pipeline expansion, these savings would come at the price of not only limiting the capacity and frequency of commodity circulation, but also increasing the probability of catastrophic events such as oil spills or fires. The decision to cut costs by retrofitting aging infrastructure imposes risk of severe harm upon the adjacent socio-ecological environment. The NEB issued a ruling that granted Trans Mountain an exemption to local bylaws and permitting processes, thereby effectively overriding the authority of surrounding municipalities such as the cities of Vancouver and Burnaby, and forcing these municipalities to conform to the demands of oil supply chains. Unable to plan the urban form in ways that would mitigate the risks to local populations and ecological systems, the urban form is left to take shape *around* these fossil fuel infrastructures, and the best that municipalities can do is to plan for catastrophe and otherwise live with these potentially lethal fossil fuel infrastructures.

In conclusion, I want to make clear that by calling attention to these ways that the oil industry in Canada has become increasingly oriented towards export to international refineries over the past several decades, my purpose is not to idealize a previous economic era when crude was refined within Canada. I am not advocating for a return to a “Canada First” economic nationalism that prioritizes Canadian jobs and Canadian resources for

Canadian markets.²⁶ Nor am I advocating for a new shipping terminal to be located elsewhere (such as Roberts Bank) rather than expanding the existing facilities on the Burrard Inlet. Even if an alternate site for the Trans Mountain Pipeline terminus might reduce the risk of a spill or catastrophic fire on the Tsleil-Waututh lands and waters, any proposed alternative would inevitably displace risk onto the territory of other First Nations communities and socio-ecological environments. Moreover, relocating the marine terminal would not resolve the concerns of the many other First Nations communities located along the pipeline route that have rejected this project, and neither would rerouting change the simple fact that this pipeline project is an irresponsible investment in infrastructure intended to expand the toxic extraction of a highly carbon-intensive fossil fuel that contributes enormously towards climate change. I hope that it is clear by now that my position is that merely altering the route of this pipeline, or changing the location of the export terminal, does not by any means resolve the underlying problem that this project constitutes an extension of colonial capitalist power and violence. However, I do believe that understanding the political and economic calculus that determines where these developments are placed can offer insights into the logic of contemporary colonial capitalism today. Moreover, the fact that neoliberal supply chains fail to achieve their idealized form of rapid and unencumbered circulation, as I have argued in this chapter, attests to the vulnerability and precarity of the project of global capitalist restructuring, and affirms the possibility that the material flows of colonial-capitalist restructuring can be disrupted in ways that reconfigure contemporary socio-political-geographic relations in new ways – I will discuss further in Chapter 6.

²⁶ Some continue to pursue this neo-Fordist line of argument, including the leaders of the Green Party of Canada and the Green Party of British Columbia, as well as Unifor (discussed above) as well as the Green Party of Canada and the Green Party of British Columbia (see also Weaver 2017; May 2018).

Chapter 6 - Lines of Resistance

We work with a variety of different constituents, so we are trying to build that big base of support, and that [means] outreaching to Indigenous allies, and a lot of different communities all along the pipeline route who are scared about what this pipeline could mean for their community or their water supply. We try to look at these pipelines as lines of resistance in who we need to outreach to and connect with.

- Mike Hudema, Greenpeace Canada

When things started getting real, people started to show their true colours, especially in the NGO world – there was this underlying racism. And I think that something really interesting about working in the BC context is that [...] there is a lot of talk about how on the West Coast there is all this Indigenous sovereignty, and people acknowledge land here, and that it is so much better here on the West Coast, but I think it's just a subtler racism, in my opinion.

- Anonymous ENGO worker

Introduction

The sun had barely peeked over the horizon on a cold morning in mid-March 2018, as we gathered at the newly formed Watch House resistance camp. Just a week prior, over 10,000 people had marched up Burnaby Mountain to this same location, sending a strong message to both Kinder Morgan and the federal government that their plans to triple the capacity of the Trans Mountain Pipeline would not be permitted to proceed. On this day, far fewer people assembled – perhaps a hundred at most – but this time we gathered not just to

protest and wave placards. This was a gathering of people prepared to participate in a coordinated act of non-violent civil disobedience at the gates of the adjacent Trans Mountain tank farm facility. As bodies trickled into the camp on this morning, none were certain exactly how the day would unfold, but many expected to be arrested by the end of it. I sensed a general feeling of both excitement and trepidation as we circled-up to check-in and review the day's plan of action.

Leaders from the Tsleil-Waututh First Nation thanked supporters for their willingness to put their bodies on the line to stop the construction of the Trans Mountain Pipeline, and conducted ceremony before the group proceeded to the gates of the Trans Mountain tank farm located just a short distance away. Once we arrived, 26 people positioned their bodies in front of the facility's gates, in direct violation of a court injunction prohibiting anyone from being within 5 meters of the property. The rest of us stepped back to witness, hold banners, and provide water, snacks, and encouragement. National and local media outlets crowded around the demonstrators and eventually had to be asked to step back to allow room for First Nations leaders to offer songs and powerful words of resistance. Most of the reporters quickly left after they captured the images needed for the daily news cycle, and after this initial fury of activity subsided, we waited patiently, certain that there would be some kind of response to this action from Kinder Morgan and local police, but uncertain what exactly that response would entail.

A who's who of Canada's environmentalist movement had assembled to support and witness this action on what quickly became an unseasonably warm day on the West Coast. Eventually the Royal Canadian Mounted Police arrived on the scene, but by the time they removed each of the 26 demonstrators over six hours had passed since the start of the action.

In the meantime, as we watched and waited, the scenario provided a prime opportunity to chat with leaders and spokespeople from environmental groups across Canada who were working on campaigns against the Trans Mountain Pipeline. This was the context in which I sat down with Mike Hudema, a climate energy campaigner with Greenpeace Canada, and asked him about his organization's role in the Trans Mountain opposition, and specifically, how Greenpeace understands its relationship with the First Nations leaders who are opposed to the project. As we sat under a Douglas fir outside of the tank farm facility on that day, Hudema acknowledged that his organization had made mistakes in their approach to building relations with First Nations in the past, but that he also believes the organization has taken lessons from these mistakes:

When Greenpeace first started, I think that we were still learning a lot about Indigenous solidarity and what that really meant. And, I think organizationally we had a lot of moments where we just came into territories or places because we saw environmental threats without necessarily respecting or talking to the people who were already there. I think over time, we are trying to learn from those lessons.

Hudema went on to remark that despite these past mistakes, 'I definitely think our work on this pipeline is a sort of good example where we can work together, where we can be good allies.' He explained that in order to do this work of being good allies this time, 'We are really trying to follow the lead of Indigenous nations because they were fighting this project long before we got here, and we recognize that we are on their territory, and we try to take some of our guidance from them.'

Figure 6.1: Protestors block an entrance to the Trans Mountain tank farm in Burnaby, BC as the National media looks on, March 17, 2018



Photo Credit: Michael Simpson

As I reflected on the many conversations I had that day, this language of recognition that Hudema evoked in this last sentence really stuck with me. The suggestion that Greenpeace is being a good ally because it ‘recognizes’ that they are on First Nations lands and ‘try to take some guidance from them’ called to mind the language that has been employed by the Canadian state in recent decades, even as it continues to permit and approve the expansion and intensification of destructive extraction without obtaining consent from many of the First Nations whose lands and communities are directly affected by this activity. As Glen Coulthard argues (2014), the language of recognition and reconciliation presents itself as a more conciliatory approach to building relations when compared to the brutal force

and outright violence that the Canadian state inflicted upon Indigenous peoples in the past. However, this discourse of accommodation, which has become the ‘dominant expression of self-determination’ in Canada in recent decades, nevertheless reproduces and conceals ‘colonialist, racist, patriarchal state power’ (Coulthard 2014: 3), and results in nothing other than the ‘continued dispossession of [Indigenous] homelands and the ongoing usurpation of [Indigenous] self-determining authority’ (24). It seemed curious to me that environmentalist organizations like Greenpeace Canada, which is actively working to oppose tar sands extraction and the pipelines that enable this extraction, would express its solidarity with Indigenous peoples using the same language that is employed by the state to reinforce settler colonial power.

Today, virtually every group opposed to the Trans Mountain Pipeline expansion makes claims to being in solidarity with First Nations. Environmental groups typically acknowledge that, while past mistakes have been made in their relationships with First Nations, this time they have figured out how to do Indigenous solidarity right. Tzeporah Berman was a prominent organizer during the War in the Woods campaign in Clayoquot Sound, and is now involved in the Trans Mountain opposition. In an editorial published by *The Globe and Mail*, Berman (2018) compares the two campaigns, and emphasizes how Indigenous rights have become central to today’s environmental movement:

Indigenous leadership is a powerful force, and although the government hasn’t yet woken up to this change, people on the ground clearly have. Those who block the gates of Kinder Morgan, facing down trucks, will cite the UN Declaration on the Rights of Indigenous Peoples as often as they mention the Paris climate agreement. Everyone knows and acknowledges that they are on the unceded Coast Salish land of the Tsleil-Waututh, Musqueam and Squamish peoples. There is a sense of pride as Indigenous and non-Indigenous people work together. But make no mistake: The Kinder Morgan protests are being led by First Nations.

Today, each of the environmentalist groups involved in the opposition to Trans Mountain, such as Sierra Club BC, Greenpeace Canada, and Stand, have made statements that recognize

and acknowledge Indigenous rights and title, affirm the importance of First Nations leadership, and proclaim their solidarity with Indigenous struggles.

Recent scholars of supply chains have emphasized that because these circulatory infrastructures pass through so many diverse geographies as they knit together sites of extraction, production, and consumption located across global capitalist space, opposition to these structures provides opportunities for the emergence of new coalitions of actors, each of whom may be situated differently along these lines, but who are nevertheless united by a common interest in exploiting the vulnerabilities of these infrastructures and disrupting the material flows that they facilitate. For instance, Anna Tsing (2009) argues that supply chain capitalism offers an opportunity to think of how oppositional alliances can be built from the heterogeneity of people who are positioned differently by race, gender, and nationality.

Likewise, Cowen (2014b) notes that ‘uneven relations of power along the lines of race, class, gender, sexuality, and status [...] make workers of the world as different as they are alike,’ but also sees possibilities for ‘queer’ coalitions to emerge from this difference, by which she means ‘the seemingly strange nature of the alliances borne out of supply chain capitalism.’

Jasper Bernes (2013) envisions workers each taking unique but loosely coordinated actions to dismantle supply chains from their various different positions along them, describing this as a ‘process of bricolage from the standpoint of partisan fractions who know they will have to fight from particular, embattled locations, and win their battles successively rather than all at once.’ Naomi Klein (2014) describes a global movement which she deems ‘Blockadia,’ and characterizes as a ‘roving transnational conflict zone that is cropping up with increasing frequency and intensity wherever extractive projects are attempting to dig and drill’ (294).

Again, Klein stresses the diversity of this movement, noting that the people of Blockadia do

not look the same from one site to the next, ‘Rather, they each look like the places where they live, and they look like everyone’ (295).

But, rather than celebrating how a shared interest in stopping pipeline developments brings people together to form a collective oppositional subject such as ‘Blockadia,’ I am more interested in asking questions such as, how is difference grappled with on the ground among people involved in these movements, how do power dynamics between differently situated groups structure these relationships of solidarity, what are the points of tension that surface between different oppositional groups, and what can we learn from the conflicts that arise between these allies that can help strengthen movements for social, economic, and environmental justice. Here, I follow Charmaine Chua (2017a) who, rather than starting from the assumption that people along neoliberal supply chains who share common interests in disrupting them are natural allies, emphasizes the difficulties involved in building a collective solidarity between people who are placed unevenly and asymmetrically in relation to these lines, and within political and economic structures that very intentionally exploit these differences in order to further capital accumulation. As Chua appropriately asks, ‘who is the “we” of a world increasingly structured around logistical systems?’ (265).

This chapter examines the efforts of three groups that were working to stop the Trans Mountain Pipeline on Burnaby Mountain in spring 2018, and reflects on these efforts as an entry point into thinking about what solidarity is understood to mean by activists on the front lines of this conflict, and what this solidarity actually looks like in practice. I begin by examining the efforts of environmental non-government organizations (ENGOS) to support members of the Tsleil-Waututh nation building a traditional Watch House (Kwekwecnewtxw) adjacent to the Trans Mountain tank farm facility. Next, I turn to a group

that calls themselves the Justin Trudeau Brigade, and which used direct action tactics in order to try to physically disrupt work and impede access to the Trans Mountain facility. Finally, I consider the approach taken by a resistance camp called Camp Cloud, which was positioned directly across from the Trans Mountain facility to monitor the company's daily activities. Each of these groups were active in the same spaces adjacent to the gates of the Trans Mountain tank farm, they were each using civil disobedience or direct action tactics to stop the pipeline expansion, and each claimed to support the struggles of Indigenous people. Yet, these groups also exhibit important differences in their organizational structures, strategies, and approaches to solidarity.

The three sections that follow this introduction provide a description of these three groups and their approaches to building solidarity between settlers and First Nations on Burnaby Mountain. After describing their efforts, I then provide more of an analysis of these approaches, before concluding that taken together, what these cases suggest is that solidarity between people who are located differently within the contemporary structures of racialized colonial capitalism does not come as smoothly as one might hope or anticipate, even when these differently located groups share a common cause such as defeating a pipeline development. The three groups that I discuss have adopted different approaches to building solidarity with local First Nations, and each of these approaches are shown to remain replete with unresolved tensions, and fraught with unforeseen difficulties, that emerge only once solidarity is put into practice. So, rather than taking at face value the claims that opposition to the Trans Mountain Pipeline expansion exemplifies what solidarity between settler-led activist groups and Indigenous people should look like, I critically interrogate the idea that solidarity can ever be seamless. I do so by considering how far solidarity extends, by

identifying the limits, incongruences, or points of fissure that arise as solidarity is practiced, and by considering how differences are negotiated in frontline relationships.

Figure 6.2: Key locations of Burnaby Mountain protests



Source: Google Maps and Michael Simpson

I want to make clear that by foregrounding these limitations, my objective is not to diminish the work of any one of these groups, or to or admonish these groups for their shortcomings. Having spent time on the frontlines with people from each of these groups, I can see that each are not only well-intentioned in their actions, but more importantly each has made valuable and admirable contributions to stopping this pipeline expansion, and are endeavouring to bring about a more ‘abundant future’ (Collard et al 2014). Still, I am aware

that insofar as I set my gaze on the limitations of these groups and their efforts to build solidarity, this chapter risks being misunderstood as an effort to ‘call out’ these groups, or to critique their actions from on high, standing from a place of moral purity where I as an author and scholar know best or have the answer to how solidarity should be practiced. This is not my purpose here, and I am certainly in no position from which I can claim to have any such definitive answers to how solidarity should be done right. I myself am a settler and newcomer to these lands and waters. Like many other settlers, I care deeply about protecting these lands and waters from the continued acts of ecological violence, and I understand that because this ecological violence is intimately tied to colonial violence and dispossession, neither can be adequately addressed in the absence of the other. Yet, these political commitments do not make me immune to making mistakes and replicating or reproducing harmful relations of hetero-patriarchal colonialism in my work as a scholar and an activist, and in ways of which I may not always even be fully aware. Indeed, many of the same structural dynamics and power disparities that can make solidarity building between differently located groups challenging also arise in the dynamics between scholars and the frontline groups that we study (Routledge & Derickson 2015). Even in writing this chapter, as much as my hopes and intentions are for it to contribute in helpful and meaningful ways towards movement-building and solidarity-building, I write this as part of a dissertation which will likely further my own career and benefit me personally (Tuhiwai Smith 2012). Writing this as a dissertation also places certain demands and expectations upon this work, which I as the author must navigate and negotiate, and which ultimately requires some degree of compromise. As Harsha Walia writes, ‘In opposing the colonialism of the state and settler society, non-natives must recognize our own role in perpetuating colonialism within

our solidarity efforts' (Walia 2012). This acknowledgement does not excuse settler activists or academics, however I do think that it is more helpful to call attention to the ways that colonials structures shape the relational dynamics of solidarities and compromise these efforts in various ways, rather than striving to reach a place of purity which may not even exist.

So, rather than claiming that I myself have figured out the correct and uncompromised approach to solidarity and then prescribing ways that solidarities can be built in the absence of any frictions or tensions, and rather than positing with great certainty claims regarding the proper form that opposition to colonial-capitalism should take, my intension here is to underscore the complexities, difficulties, and messiness of building solidarity within these struggles. If anything, the argument I want to put forward is that these tensions are a necessary and unavoidable consequence of the asymmetrical power dynamics that we inherit in the colonial present which we must learn to navigate in our efforts to build solidarity across difference. By examining the imperfections that arise in efforts to build solidarity on the frontlines of the struggle against Trans Mountain, my intention is thus not to place blame or shame on any of these group, but my intension it is to 'call out' the *structural* conditions that produce difference and disparities to begin with, and which inevitably express as tensions in the relationships of people trying to work together within and across these conditions. Instead of thinking of solidarity as a political relationship of congruent synchronicity absent of conflict or dissent, I suggest that instead we must think of solidarity as a relationship that is characterized by tenuous efforts to navigate structural difference that always remains prone to fraying at the seams and which therefore requires ongoing learning, renegotiation, and sometimes starting again.

I believe that by approaching solidarity as a relationship of imperfect alignment rather than harmonious uniformity, and by remaining attentive to the underlining frictions that exist in these relations rather than smoothing them over, we can actually strengthen efforts to work across difference in opposition to the entrenchment and expansion of the infrastructures of capitalist extraction and settler colonial power while bringing about decolonized futurities. So, while I agree with Collard et al. (2014) that bringing about ‘abundant futures’ will require ‘building relationships across vast differences, best described as solidarity or collective movement’ (7), in this chapter I consider what specifically this solidarity looks like as it is enacted on the ground by people who are imbricated in the very same unjust relational structures that we aspire to transform, and I consider what types of productive political possibilities might emerge from *living with* these tensions as we muddle through the colonial present together, aspiring to bring about radical and transformative change.

Kwekwecnewtxw – The Watch House

On March 10, 2018, members of the Tsleil-Waututh First Nation and allies constructed the *Kwekwecnewtxw*, a Watch House, directly above the existing Trans Mountain Pipeline, and adjacent to the Trans Mountain tank farm facility on Burnaby Mountain outside of Vancouver, BC (Figure 6.2). In a communiqué circulated by a non-profit group called the Coast Protectors, Will George of Tsleil-Waututh explained the significance of this structure and why it was built:

My ancestors built *Kwekwecnewtxw* — ‘a place to watch from’ — when danger threatened our people. And danger threatens our people now, as Kinder Morgan tries to send hazardous diluted bitumen through our territory. Today we build our own Watch House to protect the Salish Sea and the people who depend on it. As a concerned member of Tsleil-Waututh, I’ll be occupying the Watch House to keep an eye out for any danger.

George stated that he and others from Tsleil-Waututh, along with their supporters and allies, would not be leaving the *Kwekwecnewtxw* ‘until we put Kinder Morgan to rest.’

In addition to its function as a space from which to keep a watchful eye over threats to Tsleil-Waututh lands and waters, George explained that the *Kwekwecnewtxw* held spiritual importance as a space where prayer and ceremony is performed. By rendering the continued presence of the Tsleil-Waututh people on their territory visible, both physically and spiritually, the *Kwekwecnewtxw* made a powerful statement that these lands have never been legally ceded to the Canadian state, that Tsleil-Waututh occupancy has never been broken, and that Tsleil-Waututh law and title therefore remain firmly in place. Further still, the *Kwekwecnewtxw* structure was built in direct violation of an injunction authorized by a Canadian court just days earlier prohibiting anyone from stepping foot within a 50-meter exclusion zone around the perimeter of tank farm property. The Watch House thereby made a powerful statement that Canadian law has no legal bearing when it comes to Tsleil-Waututh rights to occupy and safeguard their territory. I asked Will George what he thought of the Canadian court injunction, and he replied, ‘We put a spiritual structure in that location, and sure it is whatever distance from their property and above their pipeline, but it’s still my traditional territory [...] If they want to move that structure, that structure has been marked as a spiritual area – that’s where it’s going to be, it should stay there. They should be afraid to move that structure.’ The *Kwekwecnewtxw* action made a strong affirmation of Tsleil-Waututh legal and political jurisdiction.

Figure 6.3: Tsleil-Waututh members and their supporters build the *Kwekwecnewtxw*. March 10, 2018.



Photo Credit: Michael Simpson

NGOs helped to support the *Kwekwecnewtxw* in numerous ways. Several of these organizations collaborated to help organize and promote a march up Burnaby Mountain on the day that the *Kwekwecnewtxw* was built. Powerful images of an estimated 10,000 people being led by Grand Chief Stewart Phillip, President of the Union of British Columbia Indians Chiefs, and other Indigenous leaders from First Nations across Canada were widely circulated on news media and social media alike. While in attendance on the day of the march, I noticed that staffers from prominent environmental organizations were involved in behind the scenes support roles while Indigenous leaders took the stage as the voice of the opposition. ENGO staff helped by making sure that the PA system was working, providing port-a-potties and other necessary infrastructure, and by serving as marshals during the march. In the days following the rally, staff from one ENGO established a support camp nearby the *Kwekwecnewtxw*, which became the ground-zero of frontline organizing by environmental groups (Figure 6.2). Over the ensuing weeks and months, this camp was visited by Canadian celebrities such as David Suzuki and Sarah Harmer, as well as internationally-renowned activists such as Bill McKibben. ENGOs also helped to organize a wave of civil disobedience actions that began a week after the March 10 rally. Over the

course of a month, those willing to risk arrest in protest of the pipeline converged at the *Kwekwecnewtxw* support camp before proceeding with supporters to the gates of the tank farm facility where they would symbolically block access through that point of entry. Staff from the ENGOs provided civil disobedience training and legal support for the many people who chose to involve themselves in these actions. Communications specialists from these environmentalist groups were also on hand during the coordinated acts of civil disobedience, helping to circulate images and provide messaging to news media outlets and to supporters throughout the world via social media.

Figure 6.4: Indigenous leaders march up Burnaby Mountain, with an estimated 10,000 protestors, in opposition to the Trans Mountain Pipeline expansion. March 10, 2018.



Photo Credit: Michael Simpson

The material support offered by ENGOs to this Indigenous-led action was meaningful and significant, but it did not necessarily come smoothly or easily. In fact, according to one ENGO employee who I interviewed, there was a moment in the lead-up to the Watch House action at which it was not certain that ENGO support would be forthcoming at all. As this informant explained to me, some of the staff from the ENGOs had expressed great uncertainties about the planned action, and exhibited reservations over whether they should support such a strong assertion of Tsleil-Waututh jurisdiction. Some pushed back against the plan, arguing that building the *Kwekwecnewtxw* was not the strategically correct course of action at that time. As one informant described the dynamics:

The conversations kept getting stifled by environmental organizations coming to these meetings [...] and saying, 'No it doesn't actually make sense to put up the Watch House right now.' ENGOs come in and say, 'No this is what we have to do, we're more strategic than you, we know what has to happen.' There was a lot of saying that things should only be allowed to happen on the water because that is where [Kinder Morgan] is going to build first [...] and then shutting down this fundamental piece of things that [members of Tsleil-Waututh] really wanted to see happen. So I was watching things not happen. [Members of Tsleil-Waututh] would be bringing it up that we have this longhouse that we bought, and how do we get it up? What do you guys think? And [the conversation] would just totally go away from that.

Once the Tsleil-Waututh set a date on which the Watch House would be built, some ENGO staff pushed back even harder. Specifically, there were concerns raised that ENGO support for the *Kwekwecnewtxw* structure would violate Canadian law. As described to me by an ENGO employee who was working to support the Watch House action from within their organization:

When it started to become real I got a lot of backlash [from within my organization]. They were like [...] 'What if this becomes illegal when there is an injunction zone? If there is an injunction we might just have to walk away. If the other ENGOs don't stay involved, then we are going to have to leave too because we don't have a lot of staff time and we don't want all your staff time to be used up there. They were really pulling back hard – I think they saw me as going a little rogue [...] All these things and they were like 'oh, fuck' and pulling back.

As pushback from ENGO staff grew stronger, staff from one organization questioned whether the action was actually in the interests of the Tsleil-Waututh nation, and suggested that the Tsleil-Waututh leaders had not adequately considered all the risks involved, including how the Canadian state might retaliate. One informant from a different ENGO expressed their reaction to hearing this suggestion:

I was like, so you are just assuming that [the Tsleil-Waututh members] are ignorant and that they can't think of those things when they make decisions, and it's up to us as white people to be like, 'Oh, but do you understand how the government is going to play with you?' Even though that is what [Tsleil-Waututh] have been up against for eight years – they've been saying no to the pipeline for eight years and the government has come down hard on them every single time.

Staff from one of the organizations that had been working with Tsleil-Waututh members began to deem the decisions being made by Tsleil-Waututh members unacceptable, and demanded that their organization's liaisons be more firm with their Indigenous allies. As one of my informants who was working closely with Tsleil-Waututh members on behalf of the ENGO recounted:

[T]hey wanted me to start going to these meetings and putting my foot down. And that would have [impacted] my relationship if that is how I was talking to them. I was like, I am here to just do the things that [the Tsleil-Waututh members] ask me to do – that's to me what allyship is. It's Indigenous jurisdiction – they have jurisdiction and then I follow the jurisdiction, the way you follow a law here in the same way. And then I was being told [by people within my organization] that I had to tell [the Tsleil-Waututh members] what to do.

Other colleagues began questioning whether the purported relationship with Tsleil-Waututh even existed at all, and whether the ENGO's Indigenous allies were make-believe. Some began insinuating that the Watch House was actually the personal project of one ENGO employee and that they were falsely claiming it to be an initiative of Tsleil-Waututh leaders:

[T]he orgs that I was working with, that weren't my org, didn't trust that I had a relationship with [Tsleil-Waututh members]. They thought that I was appropriating the Tsleil-Waututh name to get what I wanted. Like that the Watch House was something that I was pretending that [Tsleil-Waututh members] told me to say [in order to] get what I wanted. At one point there was a question about whether [one of the Tsleil-Waututh members] was real that was going around. Because I would go to the meetings with the NGOs because that's the type of stuff that the Indigenous folks who I work with don't like doing, because its ugly and people are super macho and we're really harsh with each other in those meetings – it's not fun. [...] I

hate going to them so why should Indigenous people have to go? [...] And so that led to this thing where they were like [...] ‘how do we know that you are actually working with Tsleil-Waututh?’ [...] So they were trying to protect Tsleil-Waututh from me. There was a point in December where one org was calling [a Tsleil-Waututh member] and asking him [if I was] forcing [them] to build the Watch House?

The dynamic that appears to have emerged during the planning stages of the *Kwekwecnewtxw* was one where ENGOs wanted to support this Indigenous-led action, but they also wanted influence over the terms and conditions of the action. Individuals within these organizations made efforts to build and strengthen the relationship with the Tsleil-Waututh leaders, but faced pushback from colleagues within the ENGOs over concerns this support would place their organization in violation of Canadian law, and claimed that it was not strategically sound. Apprehensive with the direction that this action was taking, some ENGO staffers began to question Tsleil-Waututh decision-making, suggesting that either the Tsleil-Waututh leadership did not realize what was truly in their own interests, or that perhaps this initiative was not actually coming from Tsleil-Waututh leaders at all.

Eventually, the plan to build the *Kwekwecnewtxw* moved forward with the support of the ENGOs. However, a new tension emerged after the action took place. One of the primary ENGO strategies to prevent the pipeline was to circulate videos and images of people taking a strong stand in order to scare off Kinder Morgan investors and to also help shape public opinion against the project. Accordingly, some ENGO staffers would tend to show up on the days of big actions in order to capture footage, and then promptly return to their offices. Organizers at the Watch House and the support camp quickly observed that many of the ENGO staffers were actually spending more time behind their desks and laptop computers sending out images of the Watch House than they were actually spending helping out at the Watch House site on the frontline of the struggle. As one of the Tsleil-Waututh leaders mentioned to me, ‘all the men from all the environmental companies are out there on the

computers. Maybe that's important enough, maybe its not. I don't think it is.' Another person at the camp told me, 'I'm getting all these emails and text messages saying this [camp] is so cool, and guys posting images on Instagram of the Watch House and I'm like that's not even your photo, you haven't been here! Like what are you doing?'

Figure 6.5: ENGO-supported Watch House Camp on Burnaby Mountain



Photo Credit: Michael Simpson

Rather than being present at the camp themselves each day, ENGO staff hired contract workers to be there on behalf of their organization. Consequently, the everyday work of tending to relationships with their Indigenous allies was placed on more precariously employed labourers, and workers who tended to be women or people of colour. As one of the contract workers at the camp noted, 'What it's turned into, in terms of who is here consistently, is contractors and underpaid folks and mostly women and temp folks and queer and marginalized folks, and people of colour, and that's really fascinating that that's how those dynamics are playing out [...] And it's really interesting because we are in this movement where we are trying to change the systems and we are replicating that system.'

This same contract worker explained to me that certain ENGO staff would typically show up for the big events, such as protest marches or civil disobedience actions that attract a lot of media attention, but ‘they will not show up for the stuff that, for me, is what the substance of allyship is.’ This stuff of allyship is, of course, all of the relationship building that takes place face-to-face, and in supporting the social reproduction of the Indigenous allies and other protestors on the frontlines. This work is needed not only on the days of the big actions, but also before and after the actions. It is the undervalued and often unseen reproductive labour that is the foundation of movement building: ‘They are seeing their eight hour days in an office as equivalent to what’s happening here, and that to me is the devaluation of, like, making food and eating together, and having these experiences, and figuring out what the next day is going to look like – that’s not considered labour.’ By skipping over, contracting out, and bypassing this everyday work of solidarity building, many of the ENGO staffers make claims to Indigenous solidarity without actually engaging in the relationships that solidarity entails and requires. As the camp organizer I interviewed expressed: ‘The only reason we have authority to be here is because we’ve been granted by Coast Salish folks, and [ENGO staff] are taking the credit but not doing the labour – I wish it wasn’t eating at me so much.’

Given that the ENGOs were investing significant staff time and resources into their communications strategy, it seems fair to ask whether their framing of the Trans Mountain Pipeline opposition was aligned with the understandings of local First Nations. While it is important to stress that each of the ENGOs opposing the pipeline places slightly different emphasis on why this project must be stopped, the importance of protecting the coastal waters of the Salish Sea from an oil spill was one of the main arguments emphasized by most

of these organizations. Protecting coastal waters has been a primary focus of some groups such as the Dogwood Initiative and the Raincoast Conservation Foundation, while others such as Sierra Club BC and Greenpeace point to the risk to coastal waters as one of several important reasons to oppose the pipeline. Here, it is significant to note that in today's campaign, environmental groups stress not only the ecological significance of the Salish Sea, but they also stress that these waters have great cultural and economic importance. For instance, Sierra Club BC's 'fact sheet' on the Trans Mountain Pipeline explains that 'an oil spill would put at risk salmon rivers, endangered killer whales, tourism opportunities, fishing jobs, the health of BC residents, and the beautiful beaches and rivers we love.' Similarly, Greenpeace Canada's website explains that, 'a spill of this heavy, highly toxic tar sands oil in those waters would permanently damage coastal communities and wildlife.' So, in contrast to environmentalist campaigns a generation ago, it is evident that today's environmental organizations opposed to the Trans Mountain Pipeline emphasize that the spaces they are working to protect are part of a *human* ecology, and that the human dimensions of these waters such as jobs and recreational areas must be protected as much as the whales and salmon.

Yet, what seems to be missing from these representations of the Salish Sea as a socio-ecological space is an understanding of these waters as a profoundly Indigenous socio-ecological space. In contrast to the way that ENGOs present the importance of protecting the Salish Sea, I want to consider the testimony presented by members of the Tsleil-Waututh nation during government hearings on the Trans Mountain expansion in 2014. Despite being granted merely three hours before the National Energy Board of Canada, Leah Wilson-George and Gabriel George of the Tsleil-Waututh First Nation offered an overview of 'the

origin, history, laws, protocols, culture, sacred responsibilities, and decision-making authority of a vibrant nation that is actively exercising its Aboriginal title, rights and interests in Burrard Inlet and beyond' (NEB 2014: 2657). In this compelling testimony, George and George-Wilson share a series of Tsleil-Waututh teachings that explain their responsibility to protect these lands and waters as prescribed by their law. George-Wilson notes that she tries not to refer to this knowledge as 'stories,' because 'in English, storytelling sounds like fairy tales, and this is not fairy tales [...] It's our law. It's our truth' (2978).

George-Wilson explained to the NEB that, 'it was the Creator that put us on this land and made us the protector and caretakers of our territory' (2989). This responsibility to care for their land that was bestowed by the Creator provides the basis of their law and the source of abundance of their people. Both George-Wilson and George describe how by caring for their territory, in accordance with Tsleil-Waututh law (*snəwayəł*),²⁷ their ancestors lived with a rich abundance of foods, including 'berries, vegetables, fruits, other meats, the shellfish, the herring, ling cod, halibut [...] the deer. But the salmon was vital. The salmon was vital to our people' (2752). The Tsleil-Waututh have an expression that when the tide goes out the table was set, which attests to the wealth of foods that their ancestors enjoyed from what is today known as the Burrard Inlet. As George recalls, 'I heard them talk about the abundance' (3022).

George-Wilson and George described how the past century and a half of colonization have disrupted this Tsleil-Waututh socio-ecological system that sustained their people over millennia. Salmon populations have been drastically reduced. The beaches, which were the table from which their ancestors ate, are now polluted. Traditional hunting grounds have

²⁷ In the Tsleil-Waututh impact assessment, the nation refers to their law as *snəwayəł*. The (incorrect) phonetic spelling used in the National Energy Board's hearing transcriptions is 'snoiish.'

been paved over and urbanized. One place where the Tsleil-Waututh once hunted deer is ‘now called Robson Street, big shopping district,’ and another site where the elk where known to herd is now where the Trans Mountain tank farm is located on Burnaby Mountain (3020). Many of these changes have occurred within a single generation. As George recounts, ‘[W]hen my father and Qu’tsaam Leonard George were young, when the tide went out there was five different kinds of clams to harvest, there was crabs, there was squatseye, there was sea urchin, there was *squalnatch*, sea grass – there were all kinds of things for our people, and today there are not’ (3040). Colonial-induced changes to the Tsleil-Waututh socio-ecology have disrupted not only their food system, but these changes have also impacted their spiritual practices. George explained to the Board, that ‘the wolf isn’t here for our people to do the wolf ceremony’ (3020). The streams where George practices spiritual bathing ceremonies are now toxic: ‘It’s recommended I don’t go bath regularly in the saltwater, but I do because it’s part of our *snəwayəl* [law]’ (3026-7).

In addition to impacts on the marine environment, many ENGOs frequently point to the impact that the Trans Mountain Pipeline expansion would have on increasing carbon emissions and climate change. For some organizations, such as 350.org, preventing climate change and transitioning to sustainable energy systems is the primary focus and reason for their involvement in the pipeline conflict. While this is indeed a very important concern, it potentially displaces attention away from the ecological changes that have already occurred in the Salish Sea over the past century and a half due to colonization. As Kyle Whyte (2017a) argues, when we focus attention squarely on carbon emissions as a source of environmental change it obscures this longer history of colonially-induced changes that have disrupted Indigenous relations to the lands, waters, and food systems. As Whyte points out, the

colonization of Indigenous lands has resulted in many changes to ‘the ecological conditions that supported Indigenous peoples’ cultures, health, economies, and political self-determination’ of which climate change is just one (2).

Gabriel George of Tsleil-Waututh reminds us that this struggle is part of this longer history, and not just a matter of reducing carbon emissions today in order to prevent climate change tomorrow:

So when we stand – we come here today, it's not just about the present. It's also about the past that goes back thousands of years. And it's about a future that's going to go a thousand more. And we have to argue our case with people whose descendants maybe won't even live here in 100 years or maybe will never live here. We're not nomadic. We've been here for a long time, and we're going to be here for a long time. And we should have the ultimate say in what happens in our lands, but we don't [...] But we're still always in good faith, always painted as a protester. No, we are not protesters. This is not a new movement. This is something that goes back thousands of years. (3028-30)

This history that goes back thousands of years is the unbroken history of Tsleil-Waututh taking care of their lands and waters in accordance with their laws. From a Tsleil-Waututh perspective then, the matter at hand is one of Indigenous jurisdiction over a socio-ecological system that has been inherited from the Creator and passed down from their ancestors.

For Tsleil-Waututh people, as expressed by Gabriel George and Leah Wilson-George, the threat of pipeline developments cannot be reduced to simply a matter of risks of spills and carbon emissions; rather this is a matter of their people’s ability to live in accordance with their laws, which require them to take care of their lands and waters. As George testified, ‘Tsleil-Waututh is still upholding our law. We are still the stewards and the caretakers and the protectors of our land and our water. We do this because [...] it was the Creator that put us on this land and made us the protector and caretakers of our territory’ (2988-9). Affirming the ongoing authority of Tsleil-Waututh law does not preclude the nation from participating in colonial legal processes such as the National Energy Board hearings or court challenges in order to try to prevent pipeline development using these mechanisms if possible. But still,

George places greater faith in the ability of his nation's laws to protect their territory than he invests in colonial law: 'Our laws are old and go back a long way, and the only thing I've seen of Canadian law to my family is harm' (3030).

In sum, even while many ENGOs recognize that they are on Indigenous territory, their calls to protect the inlet and protect the Salish Sea do not capture this understanding of the Burrard Inlet and the Salish Sea as an Indigenous socio-ecological space that has been taken care of by the Tsleil-Waututh, Squamish, and Musqueam nations since time immemorial in accordance with these nations' laws. By focusing much of their messaging on climate change and carbon emissions, ENGOs obscure Indigenous understandings of the Trans Mountain Pipeline as one further instantiation in what has now been over a century and a half of colonial disruptions to this socio-ecological system. Again, I would argue that there are both structural and strategical explanations for why these organizations choose the messaging that they do. Structurally, ENGOs are beholden to their members or funders, upon whom they depend for both support and financing. Strategically, their objectives are to influence public opinion of the project in order to ultimately pressure and persuade elected officials, policymakers, or corporate shareholders. On both counts, this requires ENGOs to use language that resonates with as broad a segment of the population as possible, and they appear to have determined that the language that does this most effectively is one that emphasizes issues such as climate change, protecting jobs, and protecting the environment, rather than emphasizing processes of colonization or the rightful claims of Indigenous people to legal and political jurisdiction.

The Justin Trudeau Brigade

While the ENGOs debated when, where, and how to take action to stop the Trans Mountain Pipeline expansion during the fall and winter of 2017, a group of people referring to themselves as the Justin Trudeau Brigade grew tired of waiting for ENGO initiative and leadership. They decided to take immediate action themselves. Beginning in November 2017, this loose-knit collective began arriving at the Trans Mountain tank farm facility on cold, drizzly mornings before sunrise, throughout the winter, and placed their bodies in front of the gates of this property (Figure 6.2), refusing access to all vehicles. These activists would stand peacefully in front of this facility for hours until the police arrived, at which point they voluntarily removed themselves before any charges were laid, thereby allowing them to return another day. What began as a small but dedicated group assembling once or twice a week, grew in numbers as the months passed and eventually reached a point at which they were blocking access most mornings, and were sometimes followed by a second wave of blockaders who would arrive later in the day.

Figure 6.6: The Justin Trudeau Brigade denies access to Trans Mountain facilities



Photo Credit: Justin Trudeau Brigade. Used with permission.

As an informally organized group, the primary thread that weaves members of the Justin Trudeau Brigade together is a willingness to put their bodies in the way of Trans Mountain's operations, and their commitment to non-violence in doing so. Otherwise, making claims that characterize what this group stands for is difficult because no one person speaks for the entire group, and the motivations of each affiliate differs. In March 2018, I interviewed two people who were actively affiliated with the group. As the first of these informants explained, 'It's not an organization – we are a bunch of people who *do* this stuff. I want to put the emphasis on what we are *doing*. Whoever does this is doing it with us – we are doing it together [...] An adhocracy – it's just like, alright let's just figure out what to do next and how to get it done, and we just do it, or we don't.' This informant recalled spending years trying to stop the Trans Mountain Pipeline expansion through formal government processes and electoral politics before ever considering the need for civil disobedience. The informant attended hearings and town halls, testified before the National Energy Board, met with Members of Parliament, signed petitions, attended rallies, and was left feeling deeply frustrated that none of these processes had any meaningful or discernable impacts on decision-makers.

But, in addition to this frustration with formal government processes, this informant also expressed dissatisfaction with the perceived ineffectiveness of the ENGOS' efforts to stop Kinder Morgan:

For several years, I've seen large, well-funded, professionally staffed, highly-resourced, very capable environmental NGOs saying that they are going to stop Kinder Morgan and asking me to give them 35 dollars, and write my name on their petition, and all I see them do is ineffective. It's ineffective. They organize protests, which are very performative and demonstrative, and the people in power in Ottawa, the people with the money in Houston, they don't need to pay any attention to them at all.

After exhausting many other avenues in their efforts to stop the pipeline and feeling like nothing was working, this informant decided it was time to use their body to physically impede this project. The informant distinguished the ‘direct action’ tactics that their group employs with the ‘symbolic protest’ activities of ENGOs:

The definition of insanity is doing the same thing over and over again and expecting a different outcome. Protesting has not been efficacious, so we need direct intervention. I have stopped the Kinder Morgan pipeline more than all of the other protestors. If I go out in the street [...] and a truck stops, and I hold it there for two hours before the police come and tell me to leave, and then I leave and come back again the next day, I have effectively stopped the Kinder Morgan Pipeline more than all the protestors.

The informant also questioned the ENGO strategy that prioritizes the creation of media imagery rather than actually physically stopping the work on the project: ‘I thought, ‘What is this going to accomplish?’ You will get a lot of nice looking people with beautiful signs and banners [...] You can use your drone and get shots from above, you can do all this stuff, and Kinder Morgan isn’t going to slow down for one second, and Justin Trudeau frankly doesn’t care.’

From a distance, the actions taken by the Justin Trudeau Brigade throughout the winter of 2017-18 do not appear much different than the civil disobedience actions that were supported by the ENGOs and which led to over 240 arrests beginning in the spring of 2018. Unlike the Justin Trudeau Brigade that would arrive at the gates before dawn, these ENGO-supported actions often began mid-morning after workers at the facility had already clocked-in. Moreover, these latter actions usually only targeted one of the facility’s gates, meaning that vehicles remained free to enter and leave through a secondary entrance. Further, whereas the Justin Trudeau Brigade found that they could successfully block access to the facility with as few as two or three people at a time, the civil disobedience actions that began in the spring included dozens of people being arrested at a time, far more than was actually needed to effectively impede access, which contributed to the perception that these actions were

nothing more than symbolic posturing before the cameras. This informant also expressed concern that the people who participated in these ENGO-led actions were being misled to believe that they were actually shutting down the Trans Mountain facility and making an immediate impact, when in fact they were being symbolically paraded in front of cameras and charged by police without having any direct impact on the company's daily operations. The informant believed that the organizers of these actions were wasting a real opportunity to mobilize a movement of people using non-violent direct action that could succeed at actually stopping the pipeline.

In a Facebook post dated March 22, 2018, a member of the Justin Trudeau Brigade assessed these ENGO-led actions as largely ineffectual: 'The whole parade of people posing for a photo-op at the gate haven't stopped one car, one truck or even one chain saw – and they have the arrogance to proclaim themselves as "warriors" taking "bold action" and "risking arrest" in a highly choreographed media event.' The post continues:

[B]y staging very safe arrest scenarios, which have no concrete impact whatsoever, the organizers of the events of the past week are essentially leading people to believe that they are doing something courageous and to use up their first arrest while not having any impact on KM's construction monster. Having been arrested once, very few people are likely to return a second time when they can have a real impact but the legal liability is greater. So, I think the events of this week are misdirected and have in fact squandered an opportunity to mount a series of actions that would have had a real impact.

The second activist affiliated with the Justin Trudeau Brigade who I interviewed expressed similar concerns that the protest actions of ENGOS were lulling people into a false sense of hope that they could stop the pipeline by taking actions that are actually ineffectual:

There's always a risk with these NGOs to sabotage, unwillingly, what we are doing because too often the population says that, oh, the David Suzuki Foundation is going to resolve the problem; Western Wilderness Committee will resolve the problem with the forestry business, and on and on and on. So, if these organizations were not there, the direct action groups would have to step in and, and the good ones like the JT Brigade would have way more impact. So, these NGOs and all their willingness to improve things and make things better, they end up working for the system. Quite often they are paid by the system. [The system] want[s] them to be there because the system knows that as long as we have these people

bitching, complaining that things have to change, things might improve but it may be too late in 40 years. The impact doesn't prevent the multinationals embedded with the government from getting what they want. And a lot of these NGOs have enough money just to get a few sound bites, and that's about it [...] They've gotten to the point where passivity is a mode of behaviour.

In my each of conversations with the Justin Trudeau Brigade activists I interviewed, it appeared evident that their choice to engage in direct action has been motivated, at least in part, by a sense of urgency. As one of them stated above, a sense that 'it may be too late in 40 years.' This urgency seems to have informed their perception that the ENGOs were moving too slowly, and that the strategies the ENGOs employed produced no immediate results.

This frustration with the pace at which other groups were proceeding also informed these activists' opinions of the actions taken by local First Nation leaders who were opposed to the pipeline. For instance, when I asked about the Tsleil-Waututh-led *Kwekwecnewtxw* action, the first informant told me, 'I have a very hard time understanding the strategic arc and trajectory that they are projecting and why they have not acted more decisively, more forcefully, directly, and effectively to intervene – to do what we are doing.' Both informants expressed frustration with not having immediately heard back from Tsleil-Waututh leaders after reaching out to offer support. One recalled making 'many efforts over a long period of time to engage in a conversation over tactics and strategy' with Tsleil-Waututh leaders, but not receiving the response that was expected. This informant described how Tsleil-Waututh members had responded to these invitations to collaborate:

All he says to me is, "well, wait and see what we are going to do." And then, when I say things like, "good I'm so glad, can you tell me anything more about that?", he actually once said to me, "you don't trust the Tsleil-Waututh people?" [...] I don't *a priori* trust anyone! I want to know, *what are you doing?*

Similarly, the other informant affirmed that an enthusiastic response from the Tsleil-Waututh leadership had not been forthcoming: 'I only want to criticize him for the fact that we have

tried to reach him – leaving a message on the phone or apologizing for not being in contact with us is a form of action. That’s the only precise element that I am criticizing here. Nothing to do with everything else that he has done.’

Both informants affirmed their support for Indigenous struggles, although one of them made clear that this was not the primary motivation for political action. As the informant stated, ‘My main thing is stopping the Kinder Morgan pipeline.’ Securing the rights of First Nations peoples has ‘overlaps and intersections’ with this primary objective, but ‘it’s not particularly my issue.’ The other informant expressed that while they backed the struggles of First Nations fighting to secure their lands, it is difficult to stand in solidarity with these causes when the group’s efforts to engage with First Nations leaders were not being met with a decisive response. Despite the absence of a clear message, the informant felt fairly confident that they had the tacit consent of local leaders. The informant told me that, ‘We were so busy blocking the road. We were pretty sure that we were getting a passive approval from Tsleil-Waututh for sure, but again it depends who’s giving the message.’

The second informant who I talked to described the group’s approach to securing consent and building solidarity as ‘actively passive,’ which I understand to mean that they were actively making efforts to contact Tsleil-Waututh, and passively awaiting a response:

We remain, we want to remain, actively passive at this point. But, when I say actively passive, it doesn’t mean that we are passive, it meant that we are waiting and they have to give the signal. And we won’t move until they give the signal, because becoming a nation involves proactive reactions and responsibility. And we took our responsibility, within the context that we have to work with, and First Nations have to take their responsibility too, as human beings, because they are part of our society here.

If we consider these statements by both of the Justin Trudeau Brigade informants together, what emerges is an approach to Indigenous solidarity that begins from an understanding that, although Indigenous struggles are not the primary focus of this group, they share an overlapping or ‘intersecting’ interest in defeating the Trans Mountain Pipeline. They surmise

that because they share this objective with First Nations, an interest in collaboration and coordination of tactics should follow, and for this reason they have actively reached out to Tsleil-Waututh. The second informant expressed a desire to receive not just approval from Tsleil-Waututh, but also directives: ‘I want them to be in the leadership of it – we’ve been too much telling them what to do.’ This desire for First Nations leadership comes with an expectation that Tsleil-Waututh people respond to their requests and provide the direction they desire. When these directives have not been forthcoming from Indigenous leaders, it has led to frustration amongst the group’s members, and a sense that Indigenous leaders are moving too slowly and not fulfilling their ‘responsibilities’ as a nation to react proactively: ‘We feel that the Tsleil-Waututh have to organize themselves and understand that we are important to them. Not in telling them what to do, but in getting directives from them, and we are waiting for the directives.’ These members of the Justin Trudeau Brigade believe that they have fulfilled their own responsibilities to reach out, and that the responsibility for building solidarity, affirming consent, and ensuring Indigenous leadership now lies with Tsleil-Waututh leaders.

Camp Cloud

On March 10, 2018, the ENGO-organized march of an estimated 10,000 protestors led by Indigenous leaders up Burnaby Mountain to witness the creation of the *Kwekwecnewtxw* proceeded directly past Camp Cloud, an already existing resistance camp, and headed further up the mountain to the location where the new ENGO-funded camp was then established (Figure 6.2). Camp Cloud had set up at the gates of the Trans Mountain tank farm facility in November 2017 to monitor the company’s daily activities. What began as a

single trailer occupied by just a few people grew into roadside community with multiple structures including a carver's cabin and a cabin for women, children, and two-spirited identified people.

Figure 6.7: Camp Cloud in March 2018



Photo Credit: Michael Simpson

I interviewed a spokesperson for Camp Cloud who described it as an informally organized, leaderless community: ‘There is no leader in Camp Cloud [...] We don’t see ourselves that way. We are part of a really big community. We’re creative people, we’re artists and we just like to do stuff.’ The spokesperson described Camp Cloud as ‘as grassroots as you can get – we are with the grass,’ and contrasted their scrappy and resourceful camp to the well-resourced ENGO camp which has a budget allocated for materials and supplies:

At the end of the day [the employees of the ENGOs] get to go home and write their data down, and report to somebody, and all the receipts that they have to be credited for, [they] credit all [their] organizers that set up this big event with porta-potties and shit. Grassroots, we just show up with what you have. We want to see that and we want to see that grow.

Camp Cloud has no budget. They rely on materials that community members scavenge and other donated items. No one at Camp Cloud is financially compensated for the organizing work that they do. As the spokesperson expressed to me, ‘With NGOs they get paid to do the work that they do, and, honestly, I don’t want to be paid for the work that I do.’ Whereas activists on ENGO payroll can do the work of decolonization during business hours and then return to the comforts of their home, Camp Cloud attracts people who are committed to living in a community where they can feel supported in practicing their political commitments to decolonization at all times. As the spokesperson noted, living in this way is difficult in spaces that are dominated by settler colonial and capitalist logics:

I couldn’t really relate with the rest of society for a really long time. I isolated from a lot of my social networks because I don’t participate in the regular things. I’m really actively decolonizing and manifesting all these things within my life, through my actions and my words and how I treat people. This is our community and the people that show up.

Camp Cloud thus provides a space for activists to do more than oppose a pipeline – it provides a space in which people can model a different way of relating to one another and to *live* in accordance with the values and principles of decolonization.

Unlike the activists I interviewed who were affiliated with the Justin Trudeau Brigade, support for the struggles of Indigenous people is not just seen as a concern that overlaps with stopping the pipeline for the activists at Camp Cloud – rather, their commitment to the struggles of Indigenous peoples is the primary grounds upon which they oppose the project. As expressed by the camp’s spokesperson:

Camp Cloud’s role is all about the rise of the Indigenous revolution, and it’s our dream for our friends to return to the land and speak to the community members and educate people and help elevate this tension and the racism that’s happening towards Indigenous people and the separation that we have, and this idea that you have to have a permit and you have to have a

licence to do anything, and that you have a shit tonne of money to just exist. That's not what the Indigenous people were here for – they were here to care for the land and take care of it, and it's gotten interrupted due to colonialism and exploiting the land and making money off of it – we're the complete opposite of that.

One way that the camp affirms Indigenous jurisdiction on a daily basis is by tending to a sacred fire that was lit by Indigenous women on December 21, 2017: 'The Sacred fire means, basically "It's on." It's lit to make a stand and to affirm the laws of the land. That it's battle time. And we are calling on all people and all nations to take a stand for Mother Earth against the destruction of Kinder Morgan.' Affirming the primacy of Coast Salish law, the activists at Camp Cloud maintain that Kinder Morgan's actions are illegal because they have not received the consent of the people with rightful jurisdiction over this territory. The spokesperson I interviewed recalled that, '[t]he pigs and the city kept trying and trying to take us out, and we stood by the laws of Coast Salish. Every single day since day one we've never deterred away from the laws of the Coast Salish people that Kinder Morgan has no consent.'

Camp Cloud's commitment to Indigenous self-determination thus goes well beyond the recognition of Indigenous rights as secured through Canadian law, and even goes beyond seeing Indigenous law as an autonomous legal and political order which exists alongside Canadian law. For people at Camp Cloud, the affirmation of Indigenous jurisdiction implies not just the legitimacy of Indigenous law, but also the illegitimacy of Canadian legal and political jurisdiction. When confronted by police, people at Camp Cloud remind the officers that these are unceded lands and that their authority is illegitimate. This unwillingness to recognize Canadian law or law enforcement officers as having legitimate authority emboldens people from Camp Cloud to take more forceful measures than other groups to stop work at the Trans Mountain facility. An example of this is an action that took place in

January 2018, during which people from the camp refused entrance to a truck for seven hours on the grounds that the drivers did not have the consent of Coast Salish people:

We were starting breakfast and next thing you know there was this big giant truck with a drill that was all wrapped up in tarps and this kind of redneck-ish looking truck driver. We stopped them at the gate of the tank farm and [asked], “Do you have any permits from the Coast Salish people?” And they said, “uh no.” They couldn’t provide anything, so we blocked them. [...] We did a seven-hour block of that drill [...] we were affirming the Coast Salish law.

Assertive actions such as these taken by people associated with Camp Cloud have been met with much greater force and violence from the police when compared to the treatment of activists from other groups. As one Indigenous land and water defender who came to Coast Salish territory to support the Trans Mountain resistance described in a podcast interview:

Camp Cloud is considered more aggressive in their blocking trucks than the other camp. So, there’s been some arguments back and forth on tactics [...] When they go to arrest the people from NGOs, they carefully arrest them and sometimes they don’t even put them in the cuffs, but when they arrest Camp Cloud people they throw them down, they violently arrest us. It’s just a whole different treatment. And, in fact, the Indigenous people who have been arrested from Camp Cloud, they didn’t get any support at all from the NGOs or the other camp because they said we were violent [...] They are not offering us jail support and they keep accusing us of being violent because we refuse to cooperate with the police, we refuse to, and that’s all they want to do is cooperate with the police. [...] That’s what made me fall in love with Camp Cloud is because there is way more of a resistance and people are more cognizant of the fact of what KM is and who the police are, as oppose to wanting to cooperate with them and schedule with them. [The NGOs] schedule their truck blockings so that all the trucks have to do is pull to the side of the road and wait for the symbolic protest or symbolic roadblock to be over and then they get to drive through.

As noted by this ally of Camp Cloud, the ENGOs appointed a police liaison who actively works with police prior to and during their planned civil disobedience actions, informing officers of their intended action and what they should expect in advance. People arrested in these actions typically leave cooperatively, often hand in hand with the police, and after signing some papers are then immediately released. In contrast, activists from Camp Cloud, many of whom are Indigenous or people of colour, and who tend to take a more confrontational approach with the police, have been met with much greater force and violence when engaging in their lockdown actions.

Camp Cloud thus models an approach to Indigenous solidarity where settler activists working with Indigenous people take a strong stand to assert the unextinguished jurisdiction of Coast Salish people over their territory, and they claim to uphold and enforce Coast Salish law by physically impeding these destructive activities of Trans Mountain, and by opposing the authority of the Canadian state. However, what I find to be particularly interesting and worthy of further reflection is that, although Camp Cloud had numerous Indigenous members of their community, they had a somewhat uneasy and strained relationship with members of the Tsleil-Waututh nation upon whose land their camp is located. In one instance, some members of the Tsleil-Waututh nation approached Camp Cloud to talk about concerns that Tsleil-Waututh elders had about the camp and the actions it was taking. Some members of Tsleil-Waututh had additionally heard that the camp was making claims to having an association with Tsleil-Waututh and to having their nation's consent to be there, which was also a cause for concern that they wanted to discuss with camp leaders. As one of the members of Tsleil-Waututh described to me, the conversation did not go very well, and by the end of the discussion the camp was asked to pack up and leave. When I discussed this incident with someone from Camp Cloud, I was told that they were there with the permission and consent of people from the Squamish nation, and since this is shared territory between the two nations, Tsleil-Waututh leaders cannot unilaterally ask them to leave. Since being asked to leave by Tsleil-Waututh leaders, Camp Cloud has expanded significantly. One of the Tsleil-Waututh leaders expressed to me that since that meeting, people from Camp Cloud had been approaching him asking for permission to engage in certain direct actions, and he was wary of their requests because were he to grant Camp Cloud approval or consent, that camp's actions could then become associated with Tsleil-Waututh people.

Another instance that occurred, and which was very revealing of the contradictions and tensions surrounding Camp Cloud's claims to Indigenous jurisdiction, was livestreamed on Facebook in March 2018. The video begins with police officers informing a person at Camp Cloud that they were being arrested on charges of mischief. A crowd gathers around the officers, who are told no mischief had occurred. A voice is heard saying, 'He is not under arrest. This is unceded territory. You have no jurisdiction here. [The officer] is assaulting him, he's assaulting him.' An officer is heard replying, 'He is not assaulting him, he is under arrest,' a statement which is especially telling of the different perceptions that are held between the police and the campers regarding police authority and jurisdiction. People from the camp gradually place their bodies between the police and the person they were trying to arrest, until the person being arrested was separated from the officers. At this point, the man runs away, and the officers chase him through a wooded area with supporters from Camp Cloud in close pursuit as they continue to livestream the events on Facebook. The police chase heads directly towards Tsleil-Waututh Watch House camp, where the officers finally catch up and pin the person they were chasing to the ground. As people from Camp Cloud arrive shortly thereafter, someone appears to push the officer who was attempting the arrest. Commotion ensues and someone from Camp Cloud explains, 'We are de-arresting our comrade who did nothing wrong. Pigs are trespassing on unceded land, disturbing our ceremony. We are going to stop this.' At that point, people from the Tsleil-Waututh nation arrive and directly confront not the police, but the people from Camp Cloud who drew the police confrontation into their camp all while evoking claims to Indigenous jurisdiction. A Tsleil-Waututh member is heard on the video telling the people from Camp Cloud to leave,

and states firmly, ‘This is why I don’t want to work with you. Don’t bring this shit to my camp again – DON’T COME TO OUR CAMP!’

Camp Cloud’s approach to building Indigenous solidarity is to take assertive actions that affirm Indigenous jurisdiction and legal authority over Coast Salish lands and waters, and to oppose the legitimacy of Trans Mountain’s activities on the grounds that their pipeline has never obtained the consent of the Coast Salish people. Likewise, because the Coast Salish territory has never been lawfully ceded and Coast Salish law has never been extinguished, activists at Camp Cloud refuse to recognize the Canadian state and law enforcement officers as having any legitimate legal authority. This refusal to recognize Canadian law empowers people at Camp Cloud to take direct action to physically prevent Trans Mountain from building the pipeline. They understand these actions to be the enforcement of Coast Salish law. The Camp Cloud community and their supporters includes both settlers and Indigenous peoples, and they have received support from some members of other Coast Salish nations. However, at the same time, there is unease in their relationship with some members of the Tsleil-Waututh who have asked them to leave. Although Burnaby Mountain is considered the territory of both the Tsleil-Waututh and Squamish, this unease in the relationship with members from one of the host nations complicates Camp Cloud’s appeal to Indigenous jurisdiction and their claims to be upholders of Coast Salish law, while raising questions regarding who is entitled or authorized to make these claims, and for what ends.

Lines of Resistance

Recent scholars of supply chains have emphasized that, as much as circulatory infrastructures are vital to processes of neoliberal globalization, they are equally sites of great vulnerability

(Cowen 2014a; Pasternak 2017; Pasternak and Dafnos 2017). Pipelines, for instance, need only be disrupted in one location in order to be rendered temporarily inoperable. Moreover, as Deborah Cowen notes, because of the networked pattern of global supply chains, the impacts of a disruption at any one node are not limited to the specific corridor along which it is situated, rather these impacts can ripple throughout the network thereby amplifying the repercussions of any action in a singular location. Given the enormity of infrastructures such as pipelines, policing against disruptions at all places and at all times is difficult, if not impossible, and the lengths taken by government and industry to securitize these flows reflects the precarity of these infrastructures, moreso than their strength (Cowen 2014a).

However, opposition to the Trans Mountain Pipeline expansion at the gates of the Burnaby Mountain tank farm offers a revealing window into how differences must be negotiated on the frontlines of chokepoints where activists attempt to constrain flows along the supply chains of the neoliberal settler colonial order. Assembled in this single space on Burnaby Mountain are three distinct groups, each of which are taking collective action to stop the pipeline project, and each of which are characterized by different organizational structures, motivations, and strategies. As mentioned in the opening of this chapter, virtually every settler-led group that is opposed to the Trans Mountain Pipeline expansion claims to support the struggles of First Nations, but claiming this support does not mean that relations of solidarity necessarily come easily or naturally, nor does it even mean that this support is being offered in ways that are actually helpful or welcomed. In this section, I will provide an analysis of the cases described above by discussing some of the different structural and organizational constraints that limit the ability and willingness of some settler-led groups to support these Indigenous claims of jurisdiction over their lands and waters.

Here, a conceptual distinction that I think is helpful in making sense of these different approaches to Indigenous solidarity is between *recognition* and *jurisdiction*. Approaches to building solidarity that are based on settler *recognition* of Indigenous rights and title are those that seek to support efforts to bestow rights to Indigenous people through the existing legal or political framework of the Canadian state. This approach is grounded in the presumption and understanding that Canadian law is primary and Indigenous authority must derive from there in order to be legitimate. The politics of recognition therefore seeks to preserve the colonial relationship by subsuming and constraining Indigenous self-determination within the state legal apparatus, effectively reconciling Indigenous claims to nationhood within the project of state sovereignty (Coulthard 2014). In contrast, approaches to solidarity that affirm Indigenous *jurisdiction*, support Indigenous claims to sovereignty, legal authority and territory on their own terms without requiring any further legitimation by the colonial apparatus. Affirming the primacy of Indigenous legal and political authority or jurisdiction therefore constitutes a much deeper expression of self-determination. Shiri Pasternak describes this approach to solidarity as one that involves standing with and supporting Indigenous people who are occupying and enacting ‘Indigenous practices of everyday life’ and thereby asserting Indigenous law on their own lands and waters rather than advocating in the courtrooms or through electoral politics (Pasternak 2017: 50). With this distinction in mind, we might assess the different approaches to Indigenous solidarity witnessed at the gates of the Trans Mountain tank farm based on whether they appear to assume the validity and legitimacy of colonial legal and political structures that ultimately curtail expressions Indigenous self-determination, or whether they support efforts to

undermine these structures of settler colonialism in ways that enable Indigenous governance over territory to be pursued in accordance with Indigenous legal and political systems.

However, while I find this distinction helpful in certain regards, like any analytical categories their edges begin to blur, overlap, and dissolve as we scrutinize more carefully how things unfold in the world. Indeed, most Indigenous groups and settler allies working to affirm Indigenous rights, title, and self-determination do so both within the legal and political structures of the Canadian state, and in ways that exceed these institutions, to varying extents. At times, advocacy within the structures of Canadian law can support direct assertions of Indigenous jurisdiction. Moreover, engagement within these colonial structures does not, in itself, imply that Indigenous legal authority is illegitimate on its own terms. Many legal challenges seeking recognition of Indigenous rights in Canadian courts are instigated by actions of Indigenous people who have already asserted these rights in practice. Conversely, many who engage in direct assertions of Indigenous jurisdiction end up arguing their case in court at some point, regardless of whether or not they believe that the Canadian courts hold legitimacy. So, while I find this distinction between the politics of recognition and jurisdiction to be generally useful in order to help make sense of the different orientations that settler-led groups take towards the politics of Indigenous solidarity, I also find that an account of solidarity requires greater nuance than simply concluding that groups supporting Indigenous jurisdiction are good allies, and groups that work within the recognition model do not extend their commitments to Indigenous self-determination far enough. As the cases on Burnaby Mountain demonstrate, some ENGOs that work predominantly within the legal and political structures of the state make contributions that are

helpful in certain sites and instances of Indigenous struggle, whereas other more radical groups making claims to Indigenous jurisdiction can sometimes do so in problematic ways.

When we consider the approaches of the ENGOs, for instance, it appears clear that some activists working within these organizations were making strong efforts to build relationships of trust with Tsleil-Waututh leaders, and to support the Tsleil-Waututh-led initiative to assert their nation's jurisdiction over their territory by building the *Kwekwecnewtxw* structure. However, it is equally clear that in so doing, these activists rubbed up against some of the structural limitations of their own organization's ability to support these actions and encountered substantial pushback from within. The legal constraints to which ENGOs are subject (as organizations that are constituted by Canadian law) are one source of the structural limitations to their claims to solidarity, and led some within these organizations to pull back, especially after it was believed that the *Kwekwecnewtxw* would be in direct violation of a court injunction enforced by the Canadian courts. Once the ENGOs did commit to supporting civil disobedience actions in violation of this injunction, they did so with careful coordination and conversation with Canadian law enforcement officers, signaling their organizational obligations to respect Canadian legal authority.

Another barrier for ENGOs in doing this work of solidarity has been their focus on communicating their message with a broader public, which requires staffers to spend time in their offices and behind their computers rather than building relationships with their Indigenous allies in person. As Snelgrove et al. (2014) claim, 'solidarity between Indigenous and non-Indigenous peoples must be grounded in actual practices and place-based relationships' (3). I heard this sentiment reiterated by people at the *Kwekwecnewtxw* support

camp, who emphasized that relations of solidarity are built by spending time together, sharing food, and participating in the labour of materially supporting one another on a daily basis. The ENGO focus on their media campaigns reflects their strategy of building a movement that can sway public opinion and place pressure on government, policymakers, and company shareholders. This focus on popular opinion and the state once again speaks to the primacy that these organizations place in the Canadian legal and political system. Moreover, because the messaging of these organizations is intended to appeal to a broad audience, ENGOs typically emphasize narratives that are thought to resonate with the sentiments of sympathetic settlers (such as the risks of climate change or oil spills), rather than emphasizing the longer histories of how Indigenous socio-ecologies have been disrupted by settler colonialism. Even as these organizations recognize and acknowledge that the pipeline is being built on unceded Indigenous territories, their campaigns thus tend to sideline Indigenous voices and understandings of these lands and waters.

In cases where ENGOs are the better-funded and more influential partners, there is a serious risk that these asymmetrical power imbalances might result in Indigenous struggles for decolonization and self-determination becoming subsumed into the other causes that these groups pursue in the name of “Indigenous solidarity.” Tuck and Yang (2012) refer to this tendency of social and environmental movements to transpose claims to decolonization onto their own struggles as ‘yet another form of settler appropriation’ (3). Indeed, ENGOs benefit tactically from being able to claim that they are the allies of Indigenous peoples, and will not hesitate to leverage the legal and political gains made by Indigenous peoples over years of struggle for the purpose of bringing about their own settler futurities that may ultimately remain irreconcilable with the futurities towards which Indigenous communities

themselves aspire. These claims to solidarity made by settler-led organizations can also be mobilized as what Tuck and Yang (2012) call a ‘move to innocence’ – that is, a discursive rationalization that allows settlers to distance themselves from the ways that they themselves are imbricated in, and benefit from, settler colonial structures of power. Of course, Indigenous peoples on the frontlines of struggle are well aware of these dynamics, and many choose to enter into these partnerships regardless. The material and financial resources to which ENGOs often have access can benefit Indigenous struggles, and if the work of ENGOs can successfully contribute to stopping immediate threats to Indigenous lands and waters, then these alliances may be deemed useful by these nations even when their longer-term political objectives are not perfectly aligned. Indeed, the work that ENGOs have done to raise the profile of the Trans Mountain conflict within the Canadian context has been a valuable and important contribution despite the problems and limitations that this support has also entailed.

Rather than building solidarity based on the subsumption of Indigenous struggles within other social justice or environmentalist causes, Tuck and Yang argue that a stronger basis from which solidarity can be built is the understanding that Indigenous struggles are different from, and irreducible to, other settler-led struggles for social and environmental justice. They write that, ‘attending to what is irreconcilable within settler colonial relations and what is incommensurable between decolonizing projects and other social justice projects will help to reduce the frustration of attempts at solidarity’ (3). In the case of the Justin Trudeau Brigade, the activists I interviewed acknowledged the difference between their objectives and those of local Indigenous leaders, while also identifying that their interest in stopping the Trans Mountain Pipeline ‘overlaps’ and ‘intersects’ with Indigenous struggles.

However, Tuck and Yang go on to caution that merely acknowledging this difference ‘won’t get anyone off the hook from the hard, unsettling work of decolonization’ (3). It appears that the certain members of the Justin Trudeau Brigade believed that because they held a shared interest in stopping the pipeline with people from the Tsleil-Waututh nation, they could expect that a collaborative relationship would necessarily be forthcoming. As one of the groups’ activists expressed to me, ‘becoming a nation involves proactive reactions and responsibility,’ and ‘we feel that the Tsleil-Waututh have to organize themselves and understand that we are important to them.’ After reaching out and not receiving the response that they expected, this led to frustration and a sense that Tsleil-Waututh were not following through on their responsibility to take leadership.

I was told by one of the Justin Trudeau Brigade activists in reference to the Tsleil-Waututh leaders that, ‘They need us, and we need them.’ However, while they placed certain expectations on Tsleil-Waututh members to provide leadership and coordinate their strategies, it is not certain what these activists had to offer the Tsleil-Waututh leaders in the spirit of reciprocity. In contrast to this assumption that Tsleil-Waututh needs the Justin Trudeau Brigade as allies, a Tsleil-Waututh leader of the Watch House expressed to me that he remains leery of many of the people who come offering allyship and seeking direction:

We all want to make change in the world. Everybody here and everybody who comes to speak to me, we all want to stop this thing, but I don’t know if they all doing it for the right reasons. For us here, it’s protecting the water. We don’t do it for my nation we do it for everybody. But I’m always leery and concerned because it’s all very new to me, everybody approaches me, I’m very leery about who they are and what they try to get me to do. They all ask for my direction, I just have to find a way to comfort them because I don’t want to offend them, but I tell them nicely we don’t need you right now.

As this statement makes clear, the settler expectation of Indigenous leadership and allyship places the burden of reconciliation directly on the shoulders of First Nations themselves, when responsibility for building relationships of accountability between settlers and

Indigenous peoples should fall on settlers (Irlbacher-Fox 2012). Walia (2012) cautions that, ‘seeking guidance must be weighed against the possibility of further burdening Indigenous people with questions.’ In the case of the Justin Trudeau Brigade members I interviewed, the desire to build this relationship was informed by their sense of urgency and immediacy of action. However, relationships of trust and accountability cannot transpire overnight. These relationships are often years in the making. It is not enough for activists to show up at the moment of crisis and demand such a relationship. Here, I want to make a call for *slow solidarity*, wherein relations of trust and accountability are built patiently, long before the moment of crisis, and remain tended to long after.

Camp Cloud offers a space for Indigenous and settler people to do this work of slow solidarity building through the everyday practices of mutual sustenance by tending to the sacred fire, cooking and sharing food, living together, maintaining the camp, and practicing decolonized relationships. As Walia (2013) describes, ‘Decolonization is a generative and prefigurative process whereby we create the conditions in which we want to live and the social relations we wish to have’ (129), and resistance camps provide a space in which these prefigurative practices can emerge. Feigenbaum et al. (2013) note that, ‘at a protest camp, people’s perspectives towards others, as well as towards objects and ideas, are shaped through communal efforts to create sustainable (if ephemeral) infrastructures for daily life’ (2). However, this does not mean that camps themselves are immune to the prevailing norms of white hetero-patriarchal entitlement. I have frequently heard people recount how white settler men who claimed to be allies made women, Indigenous people, and people of colour feel unsafe at the Sacred Stone camp on the Standing Rock Reservation in Lakota and Dakota territory. Yet, other frontline sites such as the Unist’ot’en camp on Wet’suwet’en

territory in Northern BC, offer examples of how resistance camps can become powerful spaces that challenge settler allies to check their privilege and entitlement with which they typically navigate the world.

As an informally organized group of unpaid activists that relies primarily on scavenged and donated materials rather than an expense account, Camp Cloud does not have the same dependence on the legal and economic systems of colonial-capitalism, and are thereby not constrained by the same structural limitations that ENGOs rub up against in their support for Indigenous claims to jurisdiction against the colonial state. This camp identifies its motivations and objectives as being squarely aligned with the efforts of Coast Salish peoples to affirm their legal and political jurisdiction over these lands and waters, and its tactics suggest a willingness to support Indigenous struggle that goes much further than the politics of recognition. In *The Colonizer and the Colonized*, Albert Memmi argued that because settlers directly benefit materially from the structural conditions of settler colonialism, there are ultimately limits to the willingness of settlers to stand in solidarity with Indigenous peoples. Memmi effectively argues that settlers who claim to support decolonization struggles find themselves entangled in a type of performative contradiction, where their actions contradict their own material interests in maintaining the structures of settler colonialism from which they benefit and are sustained. However, Memmi, who first published this work in 1957, does not adequately consider how under globalized conditions of racialized colonial capitalism, those who are displaced in any one place may end up becoming settlers in another (Byrd 2011; Walia 2013; Lowe 2015). Indeed, many at Camp Cloud who are not Indigenous to North America are from families that experienced

displacement elsewhere in the world, and therefore have some shared grounds from which they might wish to dismantle these structures of border imperialism (Walia 2013).

Certainly, the willingness of Camp Cloud activists to place their bodies on the line in order to affirm Indigenous jurisdiction and the illegitimacy of settler colonial authority suggests that they are indeed committed to a politics of decolonization. The camp's strong backing of Indigenous jurisdiction appears to go well beyond mere recognition of Indigenous rights within existing colonial structures, and their approach to building solidarity with First Nations people challenges settler allies to question and rethink their own ends, and to align these ends more congruently with those of Indigenous peoples rather than subsuming Indigenous struggles within aspirations of settler futurities. Doing this requires a certain level of confidence that the way of being and relating that Indigenous people fight for will ultimately result in a more life affirming existence for both humans and non-humans, and for native peoples and settlers alike, than that which is currently being experienced under conditions of colonial capitalism. While this may appear to require a certain leap of faith among settler activists to trust in Indigenous legal and political systems rather than the state, there is ample evidence to suggest that this pathway promises a future of far greater planetary abundance.²⁸ Indeed, as Tracey Osborne (2018) writes, 'a more radical project of de-commodifying nature in line with Indigenous sovereignty' has 'the potential to keep fossil fuels underground, thereby constraining the engine of capital' (40-41).

Still, the example of Camp Cloud raises additional questions regarding how settler allies can enter into deep solidarity in ways that help, rather than hinder, the pursuits of Indigenous self-determination. The incident that I described above, where people from Camp

²⁸ I thank Glen Coulthard for helping me with this point.

Cloud confronted a police officer while making claims to Indigenous jurisdiction before being told by Tsleil-Waututh leaders that they were unwelcomed and were asked to leave, offers an example of how settler-ally actions taken in the name of affirming Indigenous jurisdiction can potentially place Indigenous communities themselves in jeopardy. Indeed, claiming that the colonial state has no legitimacy does not make state power dissipate, nor does it necessarily legitimate altercations with police authorities. In some cases, confrontational tactics can lead to a more heavy-handed police presence, and given that Indigenous communities often bear a disproportionate brunt of police violence, these actions could jeopardize people's safety as well as the success of Indigenous-led actions such as the Watch House. This illustrates a further tension, which is that denying the legitimacy of the colonial state can result in a stronger and even more forceful state presence. For these reasons, some Indigenous leaders, such as those at the Tsleil-Waututh Watch House, may choose to approach their relationship with state authorities in a less outright confrontational manner. Affirming the illegitimacy of the Canadian state on the grounds that Indigenous sovereignty has never been extinguished does not imply that there is a legal vacuum that allows people free reign to confront police authorities; rather, the illegitimacy of the settler state implies the primacy of Indigenous law and protocol. Questions such as who is authorized to proclaim Indigenous legal and political jurisdiction, how this should be done, and for what purposes are deserving of greater consideration in both academic and activist conversations.

Moreover, the fact that Camp Cloud members claim to be doing the work that they are doing with the consent of people from local Coast Salish nations, while also being asked to leave by the Tsleil-Waututh, raises questions regarding from whom settler activists should

seek leadership and consent in building their relations of solidarity. Indeed, not only are many Indigenous territories spaces of shared jurisdiction (such as the lands and waters of the Burrard Inlet), but of course there is diversity of opinions and different sources of authority within any one nation. As Harsha Walia (2012) observes, ‘Who exactly one takes direction from while building networks of ongoing solidarity can be complicated. As in any community, a diversity of political opinions often exists within Indigenous communities.’ Indeed, band councils, hereditary chiefs, elders, Indigenous youth, different families within any given nation may each have different understandings of the nation’s objectives and interests, and they may also adopt different approaches and orientations to tactics. Walia (2012) suggests that ‘Alliances with Indigenous communities should be based on shared values, principles and analysis,’ however, while this approach seems intuitive, it does not resolve the underlying tension which is that building solidarity with any one community, or members from any one community, often entails a choice not to side with another and thereby risks exacerbating tensions or divisions within these communities, and could potentially undermine Indigenous self-determination in ways that may not be intended or properly understood by settler allies. While it is important for settler allies to be sensitive to these dynamics, Walia also cautions activists from outside of these communities against becoming involved in the struggles or dynamics that are internal to these communities, which, she argues, ‘perpetuates the civilizing ideology of the white man’s burden and violates the basic principles of self-determination.’ Settler activists must be careful to approach these dynamics with thoughtful humility, great care, and a reflexive attentiveness.

Conclusion

What I think emerges from my reflections on this case study is not a clear or straightforward strategic pathway that settler environmentalists and activists can or should follow in order to ensure that they are being good allies in Indigenous struggles over land and waters. Nor can I offer a set of rules and principles that will guarantee true solidarity and harmony between settlers, Indigenous peoples, and the environment. Rather, what I hope to demonstrate here is that building solidarities across difference and across the asymmetries of power is a process that is inherently fraught with tensions and contradictions that can never be avoided or perfectly resolved, but must be continuously navigated in a reflexively imperfect manner. As Walia (2013) writes, ‘No alliance is free of such complicated dynamics, differences in ideology, and nuanced questions’ (85). Over time, these dynamics are bound to surface within alliances, and sometimes in surprising or unforeseen ways. Here, I part ways with Zoltán Grossman (2017), who celebrates the emergence of recent ‘Native/non-Native’ alliances to protect the environment as an ‘evolution’ from more conflictual and antagonistic relations that may have characterized these relationships in the past, but who fails to critically interrogate the ways that these alliances remain characterized by unresolved tensions and frustrations that at times result in conflict.

Insofar as we all remain entangled in the disaster that is the racialized colonial capitalist present, no one can stand from a position of purity, outside of these relations of power and proclaim that they have definitively discovered the solution to questions of solidarity between differently positioned people. As Alexis Shotwell (2016) observes, ‘Often there is an implicit or explicit idea that in order to live authentically or ethically we ought to avoid potentially reprehensible results in our actions. Since it is not possible to avoid

complicity, we do better to start from an assumption that everyone is implicated in situations we (at least in some way) repudiate' (5). Rather than prescribing an approach to solidarity that assumes the possibility of an uncompromised position or the complete and perfect alignment of interests and objectives, I want to ask how we might think of building movements that start from an acceptance and understanding of incommensurable difference, and the difficulties that this entails. As Judith Butler stated in an interview with Zoé Sona (2010), 'acting in coalitions means finding a way to struggle with other groups where some disagreements and antagonisms remain in play. I am not sure all disagreements need to be solved before we agree to enter a coalition' (cited in Cowen 2014b). Indeed, the generative possibilities of coalition may not be found through trying to *solve* antagonisms at all, but rather they may lie in attention to what antagonisms reveal, and in finding new ways of being together with these antagonisms.

Approaching solidarity with a geographical sensibility also becomes useful here, insofar as the lessons of geography advise us that context matters, and that the particular features and contours, and consequently the dynamics of solidarity building, will necessarily be unique to each place and situation. As Nager and Greiger (2007) write, 'situated solidarity' is 'attentive to the ways in which our ability to [...] configure the specific nature of our alliances and commitments, and to participate in processes of social change are significantly shaped by our geographical and socio-institutional locations, and the particular combinations of processes, events, and struggles underway in those locations' (273). There is no roadmap that will bring us from this starting point to a place of uncompromised or perfect solidarity, and if we seek any such guide, then we have set out in the wrong direction from the get-go. This absence of clear-cut prescriptions that are transferable across contexts may

seem challenging and frustrating to those who just want clear instructions with which to orient their political actions. However, if we accept that there is no pre-existing map, perhaps then we can learn to identify certain signposts or familiar patterns and contours that can help us to more intuitively navigate unfamiliar terrains together. This means an attentiveness and understanding of certain structural constraints and dynamics that may play out in familiar ways across contexts, but it also requires the cultivating of a practical ethic of relationality and care that is sensitive to that which is unique in each context. This also requires a willingness to explore what productive political possibilities and new grounds for solidarity can be opened up from the affective intimacies of relations, and through ‘the hard work of communication and collaboration,’ that transgress the limitations of thinking within oppositional frameworks and categories (Pratt & Rosener 2012:18). Mistakes will be made along the way. We must therefore be wary of any easy answers or claims that solidarity has been perfected. This does not let people off the hook, but nor does it render imperfect alliances worthless. Indeed, the frictions and tensions that are exemplified in the Trans Mountain Pipeline opposition are necessary and perhaps even productive sites that demonstrate the messiness of the settler colonial present through which we must all muddle together, so long as we remain committed to a politics of ‘staying with the trouble’ (Haraway 2016).

Chapter 7 - Conclusion

As I sit down and begin to piece together some concluding remarks and reflections related to this research, I peer out from my East Vancouver apartment towards the Burrard Inlet, where oil tankers carrying crude bitumen from the tar sands and the Trans Mountain Pipeline routinely pass on their way to international refineries. Under normal circumstances, I would be able to see the Inlet and any vessels passing through it very clearly, as well as the mountainous backdrop on its north shore. But as I write these words, the skies of Vancouver are thick with smoke, and the sun glows fiery-red. It's August 2018, and more than 500 fires are currently burning throughout the province of British Columbia. The government has declared a state of emergency, and air quality warnings have cautioned people to stay indoors for over a week now. These fires are not likely to relent until the rains come in at least a month's time. Unprecedented fires are currently raging not only here in British Columbia (Lindsay 2018), but in many other parts of the world as well, including some arctic regions that are currently ablaze (Watts 2018).

Last month, the Salish Sea's endangered southern resident orcas grabbed international attention after Tahlequah (known governmentally as J35) carried her deceased calf upon her head for 17 days in what marine biologists described as a mourning ritual (Cuthbert & Main 2018). The southern resident orcas are starving. By 2018, the Salish Sea's resident orca population had declined to just 75, its lowest numbers in 30 years (Robbins 2018). The calf that Tahlequah gave birth to this summer was the first orca born to the Salish Sea's resident pods in three years, whereas previously four or five calves were born to these pods annually. Sadly, this calf died nearly immediately after its birth, leading to Tahlequah's ritual of mourning. Chinook salmon, the orcas' primary food source, are also disappearing. The Salish

Sea appears to be on its way to becoming one of the world's oceanic dead zones, and the potential impacts of increased tanker traffic that would result from the expansion of the Trans Mountain Pipeline expansion would only further contribute to and accelerate this process.

Reflecting back on what I've written, I'm bothered that this dissertation does not adequately capture the urgency that this moment deserves and requires. Species are dying *en masse* before our eyes, the world burns, and reactionary forms of white supremacy and fascism are on the rise once again. But, thinking about the seemingly apocalyptic conditions of the present moment reminds me of the writing of Kyle Whyte (2017b), who emphasizes that many Indigenous peoples have been living in their ancestors' dystopia for generations now, and that the current environmental crises must be understood not as a deviation from the recent historical norm, but rather a continuation of the environmental changes that began with the colonization and desecration of Indigenous socio-ecological systems that have been ongoing for some centuries. The imperial project of Canada is merely 150 years old, and in that short time the socio-ecological systems that have been managed and cared for by Indigenous peoples for many thousands of years, and which remained not only stable but healthy and bountiful during that time, are now suffering from depletion and mass extinction.

I also think of the stories that I heard Cree and Dene elders share in Treaty 8 territories when I attended the Tar Sands Healing Gathering in the Athabasca region during the summer of 2018. The words of one Dene elder spoken around the fire have especially stuck with me. This elder described Fort Chipewyan on Lake Athabasca as a place that was abundant with food and life as recently as the 1940s and 1950s. Bountiful berries, fish, birds, and large game such as moose and caribou fed a Dene community that numbered in the thousands. The elder recalled human dwellings that stretched across the landscape along the

shore of Lake Athabasca. He then recalled officials from the Canadian government and the oil industry arriving in the 1960s, bringing with them offers of development and progress. They came promising jobs, money, and prosperity. They told the people of Fort Chipewyan that they would not have to go out into the bush anymore, that there would be healthcare provided for all, and that the community's quality of life would be substantially elevated by the incursion of government and industry into their territories. Today, Fort Chipewyan is located downstream from tar sands extraction, and the community is beset with high rates of cancer and other illnesses (McLachlan 2014). Their water has been contaminated and is no longer potable (Timoney 2007). The once bountiful food system has been greatly diminished. The elder described how Fort Chipewyan today is largely devoid of birds and even insects. The lake is populated with sickly fish with strange mutations, and the forests are largely empty of the game that supported his people for countless generations. 'We don't want your development! We don't want your progress!' he shouted in disgust.

With all of this in mind as I reflect on this project, I cannot help but to feel that this dissertation is woefully inadequate when considered as a document that might contribute in even a small way to putting an end to the social and ecological injustices of the colonial capitalist present. Reflecting on the role of the critical scholar, I can't help but believe that critique is not enough at this point – immediate action is required. I ask myself what even greater extremes might be necessary before more white-settler people, including myself, are willing to go beyond critique and take stronger stands to refuse and dismantle the white-patriarchal dominated colonial structures of the present from which many settler people continue to benefit at the detriment of others.

Albert Memmi (1965), argued that all settlers have a material interest in defending and upholding the political and economic structures of colonialism because they directly benefit from those structures. While Memmi acknowledges that power and authority are also distributed unequally within settler society (such as between workers and the capitalist class), and that conflicts and struggles between these segments of the settler population are therefore certain to exist, settlers from across socio-economic divisions remain commonly invested in the reproduction of colonial structures. Indeed, settler people in Canada are the direct beneficiaries of colonial privilege that has been derived from the dispossession of the lands and wealth of Indigenous peoples, and if settlers were to dismantle the structures that uphold colonial power, this would entail the relinquishing of the power and privilege that they derive from these structures.

Memmi goes on to argue that there are two general orientations that settlers take in relation to the reproduction of the structures of colonial privilege. The first is that of ‘the colonizer who accepts.’ These are the settlers who outwardly and explicitly embrace, justify and celebrate colonization. Here, I am thinking about my time sitting at a bar in Fort McMurray, Alberta, where I sparked up conversations with tar sand workers who spoke with great bravado about how much money they were making in the tar sands industries, with no sense of remorse for the destruction that their labours directly contributed to Indigenous land, waters, and food systems. The second orientation described by Memmi is the ‘colonizer who rejects.’ This tends to be the orientation of many leftist and progressive or even radical critics of present day political economic conditions, and advocates of reconciliation or decolonization. Memmi argues that even among these critical settlers, their actions tend to fall short of actually undermining or dismantling colonial structures because doing so would

be contrary to their material interest. In other words, indignation or condemnation of colonial structures is not commensurate with actions taken to actually dismantle these structures. By rejecting colonialism but failing to voluntarily renounce their privilege, leftist and progressive-minded settlers continue to benefit from colonial power while finding some comfort and remorse from taking the moral high ground. Any actions taken by the ‘colonizer who rejects’ will inevitably fall short of making substantive structural changes. The colonizer who rejects thereby lives in a state of contradiction, condemning settler power while directly benefitting from it and failing to relinquish these benefits (Memmi 1965: 38-40).

I see the same dynamic described by Memmi expressed today in its contemporary form as a struggle between a resurgent white-nationalist populism and the politics of recognition/reconciliation. On the one hand, we have those who are explicitly colonial apologists and staunch defenders of Canada’s settler colonial present (White nationalism). On the other hand, we are presented with an approach that seemingly laments the historical injustices of colonization while continuing to subject Indigenous people to the same colonial structures (the politics of recognition). While these approaches are often presented as diametrically opposite, they share the anxious unwillingness of settlers to let go of the material benefits of colonial privilege and the affective attachments of the Canadian settler identity. Perhaps this is precisely why conflicts over monuments and re-naming have become so highly politicized in recent years. Advocates of reconciliation can comfortably forego colonial statues and monuments and feel that by so doing they are making positive contributions towards decolonization without ever having to renounce their own power, privilege or property. Conversely, defenders of Canada’s colonial past and present interpret the removal of these historical symbols past as an existential attack upon their very identity,

being, and sense of security as white settler citizens. But what a true politics of decolonization and solidarity requires is the unsettling and relinquishing of sentimental attachments to colonial identities and the settler sense of self altogether, and concomitant dismantling of structures of colonial power.

Contributions and Limitations

While the limitations of this project are numerous, I do hope that this dissertation makes a modest contribution to thinking about the political ecology of tar sands extraction and the contemporary conflicts surrounding pipeline developments in North America. In Chapter 2, my intention is to demonstrate that the fashioning of bitumen in the Athabasca river basin as a natural resource has been inextricably imbricated in processes of settler colonial dispossession, territorial acquisition, state-building, and property-making. Almost immediately after the settler colonial state of Canada was founded, government agents entered the Athabasca region and began systematically to qualify, quantify, and measure this material, casting their imaginary on all potential economic applications. Surveyors moved quickly to parse these lands and waters into blocks of property that could be bought, sold, and leased to settlers and speculators, while Cree, Dene, and Métis people were removed from these lands and forcibly confined to much smaller land bases on government designated reserves. I argue that the settler colonial state refashioned bitumen into a natural resource of Canada, and conversely this natural resource contributed to the consolidation of the settler state and its claims to territory. Resources are not merely discovered, nor do they arise naturally. Rather, they are the product of very specific understandings of the world, and of very specific political and economic processes that shape the world in accordance with this

imaginary. These resource-making activities are unavoidably violent processes. On these grounds, I argue that the governance of the world-as-resource originates from, and is sustained through, state violence.

After demonstrating how the processes of settler colonial dispossession enacted by the Canadian state set the structural conditions which have allowed for the extraction of tar sands bitumen, I then examine the role that capitalist markets and circuits of investment have played (and continue to play) in producing the landscapes of extraction that are encountered today along the Athabasca River (Chapter 3). Here, I argue that the bitumen boom beginning in the 1990s cannot be explained strictly by diminishing oil resources (the peak oil thesis), nor can this be explained as a story of human ingenuity and technological advancement (the argument from technological development). Rather, the relatively sudden influx of capital beginning in the mid-1990s and the production boom that followed must be understood as a result of very intentional processes of market-creation that enabled global capital investment to enter and leave the region. Here, I specifically point to the role that neoliberal restructuring has played in rendering the tar sands investible for global capital by rolling back government royalties and regulations, while concurrently rolling out public subsidies to the industry. I endeavour to understand how these circuits of investment function, and how they produce landscapes of extraction, speculation, and reclamation as capital enters and leaves the Athabasca region seeking to avoid the global oil industry's structural proclivity towards alternating crises of oversupply and undersupply.

The subsequent two chapters move away from sites of bitumen extraction in the Athabasca region and examine the infrastructures of fossil fuel distribution that move these materials from the sites of extraction to sites of production and consumption. In Chapter 4, I

review theories of capitalist circulation. This literature, from Marx through to recent scholars of neoliberal supply chains, tends to emphasize the imperative of moving commodities as quickly as possible across capitalist space to markets. Here, I offer a corrective to this scholarship. By focusing on the role that storage facilities and futures markets play within the global oil assemblage, I argue that there can be moments during the circulation of commodities when it becomes more profitable to decelerate turnover time.

In Chapter 5, I turn to the Trans Mountain Pipeline, through which bitumen from the tar sands flows to tidewater on the coast of British Columbia. I again follow the scholarship of Deborah Cowen (2014a), who argues that the shifting orthodoxies of political economy from Fordism to neoliberal globalization have required a parallel reorganization of supply chain infrastructures. The Trans Mountain Pipeline offers an excellent case in point. When the pipeline was first proposed and constructed in the 1950s, its explicit purpose was to move crude to domestic refineries and to produce fuels that would prioritize domestic Canadian markets. However, neoliberal reregulation of the tar sands over the past two decades was accompanied by a re-prioritization of global production and global markets, with understandings of the ‘national interest’ re-articulating accordingly. This helps to explain the impetus behind the proposed expansion of Trans Mountain. But, what this example also teaches is that the geographies of neoliberal supply chains can also be informed by pre-existing supply chain routes. In the case of Trans Mountain, the company proposed to follow the same route as the existing pipeline to save costs of construction, despite the fact that this restricts and limits the speed and volume of crude deliveries to international markets. I thus argue that in understanding capitalist supply chains and circulation, we must remain attentive

to the ‘actually existing’ forms that these infrastructures take as they encounter unique historical-geographical conditions in each of the different locations through which they pass.

If the reproduction of the colonial capitalist present is contingent upon the successful reorientation of the infrastructures of global capitalist circulation (as I argue in Chapter 5), then the disruption of these infrastructures presents opportunities for people to bring about new socio-ecological futures. In Chapter 6, I move to the frontlines of resistance to pipeline development. Between winter 2017 and late summer 2018, Burnaby Mountain in the Greater Vancouver region of British Columbia became a site of contentious opposition to the Trans Mountain Pipeline expansion. Gathered at the gates of the Trans Mountain tank farm facility located near the terminus of the 1,150 km pipeline, opponents engaged in civil disobedience and direct action tactics to prevent the project from proceeding. Many commentators celebrated and commended the recent waves of pipeline activism in North America for bringing together diverse people into united coalitions against the continued investment in the fossil fuel economy – what Naomi Klein calls ‘Blockadia.’ Indeed, many of the settler-led groups fighting the Trans Mountain Pipeline make strong claims that they are following Indigenous leadership and standing in solidarity with Indigenous peoples. However, as I demonstrate, building relations of solidarity between differently positioned opponents of these infrastructures is easier said than done. Solidarity is rendered especially difficult because these relations are themselves ordered by and within the very same structures of racialized colonial capitalism that many of these groups oppose (see also Bosworth 2018). In this chapter, I consider some of the different meanings and forms that solidarity efforts take among different pipeline opponents, and I consider some of the various tensions that arise as these oppositional groups attempt to work together in common cause. This leads me to a

discussion about the challenges of building solidarity across difference. Rather than approaching solidarity with the objective of reaching a state of perfect alignment between people – that is, a relationship that is absent of tensions and conflicts – I argue that a stronger basis for building solidarity is one that starts from and embraces the ways that people are differently positioned within political movements, while also accepting the inevitable imperfections and mistakes, as well as opportunities for learning, that arise from these uneven relationships.

The longer I've worked on this project, the more aware I have become of its faults and limitations. Many of the same shortcomings that I have critiqued in other peoples' scholarship (harshly at times), I now see evidenced in my own work. In some cases, the holes, omissions, and stories left untold are a reflection of my own oversights and the limits of my own understanding, and in other cases they reflect the limits of what is possible in a single project and the editorial decisions that one must make as an author. However, rather than viewing these shortcomings as faults, I choose to see them as work that has yet to be done, and as I move forward, I set my intensions upon these areas as future projects and as areas in which my scholarship can be improved.

In general, I would have liked the voices of people who experience tar sands extraction directly to be more present in this dissertation (see for instance Cardinal 2014; Laboucan-Massimo 2014; Lameman 2014), and to have thought more about the way that labouring conditions, race, and gender structure people's everyday experiences at these sites (see for instance: Foster & Taylor 2013; Walia & Russell 2014; O'Shaughnessy & Doğu 2016). Of the many shortcomings in this dissertation, perhaps one of the most glaring lacunas

is the lack of engagement with feminist, particularly Indigenous feminist, literature and analysis. I have been made more aware of how extractive resources disproportionately impact Indigenous women by Kanahus Manuel and the Tiny House Warriors who have been actively opposing the Trans Mountain Pipeline in Secwepemc territory, and who have foregrounded the connections between resource development and the crisis of Indigenous women who are either murdered or who go missing from their communities each and every year. As Kanahus and the Tiny House Warriors have emphasized, when industries bring hundreds of predominantly white male workers onto their territories to build extractive infrastructures such as pipelines, or to otherwise engage in extractive activities, Indigenous women become subject to increasing instances of numerous forms of sexualized violence (Women's Earth Alliance and Native Youth Sexual Health Network 2016; Amnesty International 2016). Clearly there is a gendered dynamic to extractive industries and extraction communities that results in forms of resource violence that I have not accounted for in this project (see for instance O'Shaughnessy & Doğu 2016). On a recent trip to Fort McMurray, I counted nine women on a flight with roughly fifty people on board. Moving forward, I feel compelled to familiarize myself better with Indigenous-feminist literature, and to better understand and account for this crucial aspect of the violence of fossil fuel economies.

Likewise, an immediate priority moving to engage with Black geography literature. In the spring of 2018, just as I was in the final stages of this project, I visited New Orleans to attend the American Association of Geographers annual conference. Louisiana is, of course, another pivotal node within the global oil assemblage where much of North America's crude oil is refined, and while I was there I started to think about how this site is connected to the

places of extraction I was studying. I began thinking about how, at each of the sites along these hydrocarbon commodity chains, one finds communities that have been effectively sacrificed in the pursuit of the development of fossil capitalism. In the case of the tar sands, it has been the Cree and Dene peoples whose lands have been stolen and whose waters and food systems desecrated. In the Burrard Inlet, the risk of a catastrophic spill is offloaded onto the Tsleil-Waututh, Squamish, and Musqueam nations whose traditional food systems would be devastated by such an event. In New Orleans, the violence of fossil capital is disproportionately borne by Black communities. Hydrocarbon supply chains thus offer an opportunity to think about the interwoven and interconnected histories of both dispossession and slavery in the Americas, as well as the possible opportunities for solidarity between struggles for decolonization and abolition against forms of racialized colonial capitalism. I intend to pursue these connections as I move forward with my research.

At the outset of this project, I intended to write a dissertation that would be of use and interest to people who are actively engaged in frontline struggles against pipelines, and against the ongoing colonization of Indigenous lands and waters more generally. I'm afraid that I have failed in this regard as well. I am so grateful for the time, support, and energies that so many people from these frontline communities have offered me over the course of this project. Insofar as my dissertation contributes more to academic debates than it does to the immediate needs of activists, I hope that I have found (and will continue to find) other ways that I can contribute in the spirit of reciprocity. As a researcher I absolutely do not want to reproduce the extractivist ethos of taking from others without giving back in return, especially when those who have shared with me so generously throughout the course of this project are already making generous and courageous contributions through their relentless

struggles and willingness to place their bodies on the line fighting for social and ecological justice.

There are other chapters that I had envisioned, and would have liked to include as part of this story. I would have liked to include a chapter on the National Energy Board's public hearings processes, and specifically their 'Aboriginal Oral Testimony' hearings. Another chapter that I intended to write would have examined how the material qualities of bitumen, as a lumpy and viscous material, poses difficulties and challenges for capital circulation. Government and industry take extensive efforts to 'know' bitumen's material qualities and to control its movements as a commodity, and even then this substance ultimately proves ungovernable as it leaks through pipes and moves through the world in somewhat unpredictable and uncontrollable ways. I have had to accept that this is yet another piece of the story that will remain unwritten, at least for now. But, thinking of this project as rhizomatic rather than linear in form helps me to accept the partiality of the story I have told. Insofar as no account is ever complete, there can be no definitive conclusions, only fragments of thought that lead us not to definitive answers, but only to new lines of flight, new questions, avenues of exploration, and new beginnings.

In August 2018, the Trans Mountain company began work on the pipeline expansion in central Alberta after the federal government reached a deal with Kinder Morgan to purchase the pipeline for \$4.5 billion dollars. Days later, on August 30, Canada's Federal Court of Appeal reached a verdict on the legal challenges brought forward by 14 First Nations, two municipalities, and two environmental conservation groups. The court ruled that the federal government had failed to fulfill their legal obligations to consult meaningfully with First Nations on this project, and had also failed to adequately assess the environmental

impacts of increased tanker traffic in the Salish Sea. On these grounds, the Federal Court of Appeals overturned the federal government's approval of the project. Project construction was ordered to cease immediately, and pipeline opponents declared victory.

Figure 7.1: Squamish First Nation Victory March, September 15, 2018



Photo by Michael Simpson

On the same day as this court ruling, Kinder Morgan's shareholders voted near unanimously to sell their asset to the Government of Canada. Rather than taking the opportunity presented by this court ruling to back away from what was not only a politically contentious project but also a financially imprudent investment, Justin Trudeau's government followed through on the purchase of this very expensive and aging infrastructure, reaffirming

its commitment to this project. But, despite the government's apparent intransigence, the path forward for the Trans Mountain Pipeline expansion remains unclear. The government could choose to appeal the court's ruling at the Supreme Court, but this would result in a significant delay with no guarantee of success. However, if the government accepts the court ruling and proceeds to conduct a new consultation process and a new environmental assessment, this would also take considerable time, and it remains doubtful that new rounds of consultation would succeed to obtain the consent of the First Nation litigants. So, while it may be too early to declare the Trans Mountain Pipeline expansion project dead, the recent Federal Court of Appeals ruling clearly marks a major win for pipeline opponents.

Figure 7.2: Disassembling the Watch House Camp, September 16, 2018



Photo by Michael Simpson

Just days before submitting this dissertation for examination, I attended a victory march and party hosted by the Squamish First Nation (Figure 7.1), and the following

morning I returned to Burnaby Mountain to help disassemble the Watch House support camp, and to say goodbye and thank you to many of the people who have been engaged in this struggle for years (Figure 7.2). The Tsleil-Waututh plan to keep the Watch House itself in place for the time being, but the adjacent ENGO support camp was packed up and placed in storage until it becomes needed once again. Of course, the larger struggle against the socio-ecological violences of colonial capital remain ongoing, and for many land and water defenders, it seems premature and even counter-intuitive to celebrate. Just days after the Federal Court of Appeal verdict, activists in Victoria, BC had already moved on to the next battle, staging a direct action against the fish farms that threaten wild Pacific salmon populations. Indeed, this story remains far from over. But, after years of contentious debate, public hearings, political and legislative battles, legal wrangling, marches, protests, civil disobedience, and direct actions, this seems like a fitting moment to rest and celebrate, at least for a brief time, so that the struggle to defend the lands and waters of the Salish Sea can recharge and continue on even stronger. Likewise, this seems like a fitting place to pause this dissertation work, and to take a brief moment to rest and recharge, before moving on to the next stage in the struggle.

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