WORKERS IN CANADA'S ENERGY FUTURE:

SOCIOTECHNICAL IMAGINARIES, SETTLER-COLONIALISM, AND THE COASTAL GASLINK PIPELINE

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Abstract

In recent years, scholars of science and technology studies (STS) have increasingly turned their attention to the role of collective imagination in shaping sociotechnical futures. This scholarship leaves open the question of how the collectives involved in bringing these futures to life come into being. Starting with one episode in the ongoing conflict over the construction of Coastal GasLink pipeline on Wet'suwet'en territory in settler-colonial Canada, this discourse analysis draws on scholarship in feminist, anticolonial, and co-productionist STS to study this process of collective formation in relation to sociotechnical futures. It does so by examining how oil and gas workers become enrolled into a sociotechnical imaginary I call Canadian resource techno-nationalism. Comparing media and politicians' representations of oil and gas workers with White workers' representations of themselves indicates that they can end up participating in this imaginary regardless of their affinity to it. Examining policy documents and scholarly literature about the inclusion of Indigenous knowledges in impact assessment, as well as political debates and mainstream media coverage about the conflict over the Coastal GasLink pipeline, draws attention to how elites' active construction and protection of the boundary between knowledge and politics works to enroll Indigenous people into oil and gas jobs and, therefore, into the collective performing Canadian resource techno-nationalism. In both cases, elite actors deploy the resources at their disposal in ways that help funnel oil and gas workers into lives imagined for them, securing the power of the settler state in the process. This dynamic illustrates the importance of disentangling participation in the collective performance of sociotechnical imaginaries from freely given consent. Residents of liberal states can end up performing dominant imaginaries less out of any sense of affinity to them than as a response to the disciplinary power these imaginaries help sustain.

pour mon pépère, Paul Lajoie

“Don’t work too hard.”
~ Cathy O’Malley

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Preface

The main body of this dissertation is comprised of three articles prepared for publication in academic journals.

Two articles, *'On being an "oil and gas worker": Dominant discourse, self-representation, and Canada's energy future'* and *'A case study in rescuing settler normalcy: Canadian resource techno-nationalism, Indigenous oil and gas workers, and the Coastal GasLink pipeline'* represent the sole research and writing contribution of Alana Lajoie-O'Malley.

Alana Lajoie-O'Malley led the authorship of *'"Consent" as epistemic recognition: Indigenous knowledges, Canadian impact assessment, and the colonial liberal democratic order'*, which was co-authored with Dr. Kelly Bronson and Dr. Gwendolyn Blue and published in *Social Studies of Science* online first in May, 2023 and subsequently in Vol 53 Issue 4. The scoping review methodology upon which the article draws was conceived by Dr. Blue and Dr. Bronson. Alana Lajoie-O'Malley conducted the primary data collection, curation and analysis for this scoping review. Lajoie-O'Malley conceived of the article included here, conceived and conducted the research on Canadian impact assessment included in it, and prepared the original draft and subsequent draft revisions. Blue and Bronson contributed revisions and editing to the original draft and to the data curation process. The original draft also benefitted from the comments of three anonymous reviewers and the editorial team at *Social Studies of Science.*

All interviewees included in this dissertation gave their informed consent before participating in this study, which was conducted in accordance with research protocol S-03-21-6564 approved by the Office of Research Ethics and Integrity at the University of Ottawa.

Contents

List of Figures

List of Tables

Chapter 1 – Introduction

The terrain

In 2016, I travelled from my home a stone's throw from the University of Winnipeg to unceded Algonquin Anishinaabeg territory, a short walk from the Canadian Parliament. I traveled to speak on a panel at ClimaCon, a conference dubbed "Canada's largest convergence of climate heroes" (Climate Action Network, 2018). My panel was uneventful. I was speaking in my capacity as Director of the Campus Sustainability Office at the University of Winnipeg about work we were doing to try to influence climate action beyond our campus. It felt odd being at the conference wearing my UWinnipeg hat – the people I knew in the room were people I had met through my involvement in community-based climate justice work. Two years earlier, TransCanada had announced plans for the Energy East Pipeline and I found myself hosting meetings in my house with people concerned about the impacts the pipeline would have on local waterways and on global greenhouse gas emissions. My home accidentally and quickly became a local hub of community-organizing against the project. We ended up networked with over 80 organizations that also opposed it, and many of those working in these organizations were at the conference.[1]

Even though my own panel was uneventful, ClimaCon 2016 remains burned in my memory because of the keynote delivered by British communications specialist George Marshall. He described working with the government of Alberta to write a new story for the oil-rich province that drew on its 'proud history' of resource extraction, that spoke of how that history

[1] Project proponents withdrew their project application when new rules for calculating upstream greenhouse gas emissions from it and other similar projects were added to the federal review process.

helped build a nation, and of how the grit and technological innovation it took to do that work could be directed to new, climate-friendly horizons while still honoring a past about which rig workers and heavy machine operators should be proud. Initial reaction to the talk from the mostly white crowd was positive. Anxiety about unhappy, unemployed oil and gas workers was, and remains, top of mind for many people involved in efforts to mitigate climate change in Canada. While engaged in climate advocacy, I was far from alone among my peers in feeling that the climate movement was failing to enroll oil and gas workers, and the white working class more generally. Mobilizations in Alberta in support of "Canadian Energy" and, more recently, Canada's version of the Yellow Vest movement and Truckers' Convoys, have only served to amplify these anxieties. The prospect of finding communications strategies that might bring these workers on board was appealing. I too quickly became lulled into feeling like I had just been offered new tools not only for community organizing but also for engaging in conversations with the many members of my own franco-Manitoban family whose settler histories and labour tie them to the vision for Canada Marshall shared.

The optimism didn't last long. More than Marshall's speech, what I recall is the pin-drop silence in the room when Dene lawyer Caleb Behn stood up and asked, "do you have any idea how offensive that story is to me and others in my community?" Marshall had, after all, tried to make climate action palatable to resource workers by offering them a story that implicitly celebrated settler-colonialism. It shouldn't have taken Caleb's intervention for this to be clear: by 2016, environmental groups across the country were proclaiming their commitments to working in solidarity with Indigenous land defenders and water protectors. Our success in delivering on these commitments is another story. I don't remember Marshall's reply, but I do remember being jolted back into a feeling that had become all too familiar to me in my time opposing Energy

East: a feeling that the debates about climate change, resource extraction, good livelihoods, and settler colonialism that characterize conflicts over Canadian fossil fuel projects seem to skirt around questions that address the legitimacy of the Canadian state.

This dissertation is a modest effort at unpacking some of these fundamental questions about Canadian state formation. It is also an examination of how elite power circulates in states to get people to participate in national stories – or imaginaries – about desirable sociotechnical futures – those like the kind George Marshall shared during his keynote in 2016. Drawing primarily on literature in co-productionist, feminist, postcolonial, and anticolonial science and technology studies (STS), the three articles that comprise the body of this dissertation attend specifically to how oil and gas workers come to participate in performing a dominant sociotechnical imaginary of Canada as necessarily yoked to resource extraction in general, and to oil and gas in particular. The articles taken together ultimately reveal how elite actors direct the discursive resources at their disposal to rearranging lands and lives according to a hegemonic sociotechnical imaginary such that workers living on these lands become part of a collective involved in reproducing it regardless of their personal affinity to it. This process helps materially secure the imaginary by, in part, legitimizing the oil and gas projects that lead to oil and gas jobs as well as to the conditions that make these jobs appealing.

By attending to how the imagination of elites comes to shape the lives of workers, and by exploring how workers exercise agency in this context of unequal power, this dissertation joins conversations in STS about the critical role that imagination plays in shaping sociotechnical futures and adds empirical insights on how imagination gives way to the disciplining effects of power. By attending to these questions of imagination in Canada, this dissertation also joins conversations in STS about how the ontologies and epistemologies associated with dominant

science serve the process of materially securing settler-colonial futures, offering two case studies that trace this process in detail.

My central argument is that it is important to disentangle participation in the performance of sociotechnical imaginaries from freely given consent. When read alongside existing work documenting labour force dynamics (Alook, 2016; Alook et al., 2021; Mazer, 2019, 2022; Spady, 2019, 2020; Upadhyay, 2016), financial mechanisms (Pasternak and Dafnos, 2018; Pasternak and Schabus, 2019; Stanley, 2019, 2020), and infrastructures (Cowen, 2019; LaDuke and Cowen, 2020; Mazer et al., 2019) currently used to support the natural resources sector, the research reflected in this dissertation serves as another example of how residents of liberal states can end up performing dominant imaginaries less out of any sense of affinity to them than as a response to the disciplinary power these imaginaries help sustain. Put differently, it is important not to make paradigmatic the putatively democratic collectives within liberal states – these collectives are formed through processes involving significant coercion, contestation, subversion, and resistance.

In the remainder of this introduction, I set the stage for making this argument by providing a sketch of the empirical and theoretical work that informs this project and to which it contributes, detailing how my own location as a researcher informs my theoretical and methodological choices, outlining my broad research objectives, methods, and questions and, finally, providing a brief overview of the three articles that comprise the main body of this text.

Background: sociotechnical imaginaries & territorial control

Debates about climate change and conflicts over the Canadian state's claims over territories also claimed by Indigenous peoples intersect in ongoing heated controversies about

resource extraction and transportation technologies (pipelines, oil-by-rail, fracking, and so on).[2] One axis of the controversies surrounding these technologies relates to their safety, to their role in a more 'climate-safe' future, and to the harms and benefits they bring to communities affected by them. Another axis relates to how the construction of these technologies, and decision-making processes associated with them, relate to Indigenous peoples' sovereignty claims. In practice, these two axes are entangled in ways that make untangling them at best difficult, but more likely impossible.

Since the 1970s, STS scholars have studied disagreements related to the first axis, producing detailed accounts of public conflicts about genetically modified organisms and biotechnology (Bonneuil et al., 2008; Bronson, 2014; Jasanoff, 2005), nuclear energy (Jasanoff and Kim 2009; Sundqvist 2002; Wynne 2013), nanotechnology (Macnaghten et al., 2005; Marris, 2015), and climate science (Callison, 2014; Demeritt, 2006; Jasanoff, 2010; Oreskes and Conway, 2011; Schneider, 2001; Shackley et al., 1999; Wynne, 2015). These studies of technoscientific controversies shed light on the dynamics that bring 'publics' (conceived of as being formed, just like facts, via discourse) to accept certain scientific practices, technologies, and conclusions while resisting others.[3] This scholarship highlights the ways that technoscientific

[2] Throughout this dissertation, I refer to *Indigenous peoples* when referring to the multiple distinct groups of Indigenous collectivities that exist within the borders claimed by the Canadian state, *Indigenous people* to refer to individuals belonging to these collectivities, and Indigenous people/s when referring to both simultaneously. It bears mentioning at the outset that one discursive process implicit throughout much of the period I cover in this dissertation is the erasure of rights-holding collectivities by speaking of those individuals living within them not as members of a rights-holding group but instead as individual subjects in a liberal capitalist state.

[3] Three notes on terminology are in order here. First, with other STS scholars (Barad, 1998; Haraway, 1988, 2018; Latour, 1987; Law, 2012), I use the term *technoscience* to signal the ways putatively 'basic' science and its technological applications through human-built objects are entangled. Empirical studies following scientists and engineers makes clear that they work closely together to execute research programmes and deliver innovation. These observations trouble efforts to differentiate between 'basic' science and 'applied' technology (Channell, 2009; Latour, 1987; Law, 2012), as does the fact that technology provides the "instruments of vision" (Haraway, 1988: 586) deployed in scientific research.

fact-making and meaning-making are social and political processes not only among scientists and engineers (Cetina, 1999; Kuhn, 1962; Latour, 1987, 1993; Shackley, 2001; Shackley et al., 1998; Traweek, 1988), but also between scientists, policy-makers, and non-specialists (Callison, 2014; Collins and Evans, 2002, 2008; Gibbons et al., 1994; Irwin, 2002; Jasanoff, 2003b, 2004b, 2005, 2009b; Nowotny et al., 2013; Wynne, 1982, 1992, 1998, 2003).

Candis Callison (2014), for instance, examines knowledge about climate change to show how scientific findings accepted as facts by scientific communities must be integrated into well-established approaches to meaning-making internal to other social groups before they can be accepted there too. She describes at the group-level what Sheila Jasanoff describes at the level of states: how scientific knowledge "achieves its standing by meeting entrenched cultural expectations about how knowledge should be made authoritative" (Jasanoff, 2005: 249). Jasanoff calls these entrenched cultural expectations *civic epistemologies* and illustrates how they differ from state to state. At the group- and state- level respectively, Callison and Jasanoff show how different groups and states furnished with the same scientific findings will make different

Second, technoscientific controversies involve "contestation within scientific and technical communities, preceding and leading to the settlement of facts and related disputes over technological feasibility and design" (Jasanoff, 2007: 1) as well as "contestation over broader social or political issues whose resolution turns to some extent on the determination of scientific and technical facts".

Third, debates about the meaning of 'publics' can be found in the vast literature on the public understanding of science, which is well-summarized in Gregory & Lock 2008. In broad strokes, 'publics' in STS are understood in relation and opposition to 'experts' and 'governments', making up the catch-all term that defines anyone not deemed 'expert' and not deemed part of government. STS scholars do not use the term 'publics' in this way to describe 'the public' or 'publics' as a-priori entities. Instead, STS scholars generally point to how governments and communities of experts understand 'the public' (Welsh and Wynne, 2013; Wynne, 1993) and seek to problematize the tri-partite division of 'expert' 'government' and 'the public' by studying differences within 'the public' (and therefore proposing the value of thinking about publics in the plural) as well as by studying the construction of the boundaries that get drawn between 'experts', 'publics', and 'governments' (e.g. Collins and Evans 2003; Irwin 2002, 2006; Jasanoff 2003a; Wynne 1998, 2003).

judgements about whether to trust them, what they mean, and what they imply for individual and collective decisions.

Importantly, and as is almost always the case in these kinds of controversies, conflicts over fossil fuel extraction in Canada are not only disputes about facts. They are also about the kinds of social life and order technological infrastructures like pipelines ought to facilitate or foreclose. In this sense they are sociotechnical controversies over desirable sociotechnical futures. In Canada, these controversies concern questions like: Who should decide what happens on lands within the borders the Canadian state claims? Based on what knowledge and what authority? Using what technologies and technological infrastructures? Grounded in what visions about how those living within these borders can and should achieve a good life? Reflective of what assumptions about the most desirable relationships between Indigenous peoples and the Canadian state? These are questions that rely on scientific knowledge, but they are also questions about what constitutes desirable social life.

The intermixing of disagreements about facts and struggles over social life is illustrative of the ways scientific meaning making is intertwined with normative commitments about what our social worlds should look like and about the role that science and technology ought to play in shaping them. Sheila Jasanoff and Sang-Hyun Kim propose understanding this intertwining via the concept of *sociotechnical imaginaries*:

> Collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology (2015: 4).

A central premise of scholarship about sociotechnical imaginaries is that they are rendered material through performance and enactment. Some examine how deeply held assumptions about national identity relate to decisions to deploy particular technologies (e.g. Bowman 2015; Burri 2015; Chen 2015; Felt 2015), some contextualize debates about desirable relationships between experts, the state, and publics (e.g. Dennis 2015; Hurlbut 2015), and others examine social movement struggles to re-arrange the relationship between members of different collectives by re-arranging the deployment of science and technology (e.g. Bronson 2022; Kim 2015, 2015; Moon 2015).

A starting place of this dissertation is that there is something to be gained by considering settler-colonial sociotechnical formations through the concept of sociotechnical imaginaries. Doing so means journeying alongside scholars working in post- and de-colonial studies of technoscience who emphasize the material impact of technoscientific infrastructures such as pipelines (Bliss and Temper, 2018; Bosworth, 2019; Estes, 2019; LaDuke and Cowen, 2020; McCreary and Milligan, 2014; Pasternak and Schabus, 2019; Stanley, 2019; Temper, 2019), railroads (Cowen, 2019; Karuka, 2019; Prakash, 1999) and aqueducts (Perry 2016) in asserting and sustaining colonial power. As with work that considers sociotechnical imaginaries, these scholars broaden understandings of struggles over technoscientific infrastructures to be about more than just contestations over risk or safety but also – or even especially - about how these infrastructures sustain, extend, and reproduce certain forms of social life while working to eliminate others. In other words, they consider how technoscience helps (re)produce the current Canadian social hierarchy.

Those who focus on the materiality of technoscientific infrastructure in this way emphasize the ways it physically rearranges lands and people in ways that help settler-colonial

states secure and maintain control over land. The focus of this scholarship remains how state and capitalists work together to achieve this control. Scholarship on sociotechnical imaginaries, on the other hand, attends less to questions of territorial control and more to questions of how collectives converge around certain ways of seeing the world, imagine their shared future through this lens, and then go about performing this future into existence. What performing a sociotechnical future into existence specifically entails, who participates in it, and how they come to do so remains largely unexplored. This is why the articles in this dissertation either implicitly or explicitly place empirical questions about the performance of sociotechnical imaginaries into relationship with the literature that considers the material ways technoscientific infrastructure rearranges lands and lives in settler-colonial states. They do so by passing both the empirical results from this dissertation and extant literature on technoscientific infrastructure through the lens of post-structuralist threads of STS that consider 'natural' and 'social' orders to be mutually constituted and that understand all knowledge to be entangled with power.[4]

Putting the theoretical lens in place: feminist, anti-colonial co-production

The idea that 'natural' and 'social' orders are mutually constituted and that all knowledge is entangled with power comes from several overlapping and intersecting schools of thought: the discursive view of power/knowledge (Foucault, 1975, 1980), feminist contributions to our

[4] Several scholars of science and technology studies (STS) speak of two "camps" in the field (Jensen, 2014; Söderberg, 2017; Woodhouse et al., 2002). Johan Söderberg (2017) characterises this division as one between those who approach the field through the structuralist lens of political economy (e.g. Cooper 2011; Davis and Abraham 2011; Janković and Bowman 2014; Kleinman and Suryanarayanan 2013; Rajan 2006), on the one hand, and those who approach it from an empirical post-structuralist view, on the other (e.g. Haraway 1989; Jasanoff 2004; Latour 2004; Law 2008; Whatmore 2009; Woolgar 1981). Sheila Jasanoff consistently argues that this taxonomy ignores the ways the idiom of co-production considers issues that might be more quickly associated with the first camp. While this is not the place to engage in this debate, it is worth stating that my application of the idiom of co-production remains interested in the institutional, financial, and affective mechanisms or infrastructures associated with sociotechnical imaginaries – elements that reflect concerns similar to those working from a strict political economy lens.

understanding of objectivity and technoscience (Barad, 1999, 2007; Haraway, 1988; Harding, 1995; Narayan, 2004), post-colonial and anti-colonial discussions of the co-constitution of dominant science, empire and colonialism (Adas, 2015; Brockway, 1979; Harding, 2011; Liboiron, 2021; Nandy, 1988; Prakash, 1999; Said, 1978; Smith, 2013), and studies of the co-production of science and social orders within liberal democratic states (Jasanoff, 2004b; Jasanoff and Kim, 2015).[5]

Sheila Jasanoff's idiom of co-production is one expression of this broad perspective. Jasanoff describes co-production as:

> shorthand for the proposition that the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it. Knowledge and its material embodiments are at once products of social work and constitutive of forms of social life; society cannot function without knowledge any more than knowledge can exist without appropriate social supports. Scientific knowledge, in particular, is not a transcendent mirror of reality. It both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments and institutions – in short, in all the building blocks of what we term the social. The same can be said even more forcefully of technology (2004a: 2–3).

Importantly, co-production is not a process of iteration between nature and society, or science and society, conceived of as two externally existing entities in a dialogical feedback loop. Rather,

[5] Here, I draw on Max Liboiron's (2021: 20) use of the term *dominant science* to refer to modes of knowledge making often referred to as *Western.* Liboiron favours the term *dominant* because it draws attention to the role of power in sustaining one mode of knowing as more accepted than others. It also serves to acknowledge the fact that many knowledges produced in "the West" are not admitted into dominant forms of knowledge making. To these reasons, I add that the term *dominant science* avoids calling *Western* forms of knowledge-making that were historically, and remain, the results of global interactions and of the work of people from around the world, not just "the West".

references to “science and society”, “nature and culture” and so on must be understood as referring to a mutually constructed duality that is in constant flux, possessing no a priori existence, practiced and stabilized through social practices, the law, and political institutions, among else. This understanding challenges “the realist ideology that persistently separates the domains of nature, facts, objectivity, reason and policy from those of culture, values, subjectivity, emotion and politics” (Jasanoff, 2004c: 3).

Jasanoff traces the roots of the idiom of co-production to feminist STS scholar Donna Haraway who “led the way in arguing that the dominant paternalistic order of Western societies is engineered into the very design of technological systems” (2004a: 35). Haraway’s work rejects scientific projects which advance normative commitments to, and desires for, universal knowledge and the social orders required to sustain it. Haraway (1988) criticizes such scientific projects as attempting to perform an impossible “god trick of seeing everything from nowhere” (p. 581). She advances the concept of *situated knowledges* to account for the ways that knowledge is always embodied and located in relation to specific social worlds. She also proposes an understanding of objectivity that gains its authority by virtue not of successfully achieving “transcendence and splitting of subject and object” (p. 583), as dominant science dictates, but instead from recognizing one’s “limited location” (p. 583) and, therefore, always partial vision. Haraway ties this epistemology to feminist political projects that pursue deliberate efforts to confuse the boundaries – such as the boundary between subject and object - that sustain dominant worlds, and to carefully construct new boundaries as part of processes aimed at building new, more just worlds.

Haraway’s feminist project intersects with the kind of interest in ontological politics found in new materialism and the ontological turn (e.g. Holbraad, Pedersen, and De Castro 2014)

as well as with calls for pluriversal (rather than universal) thinking as both a project of political emancipation and of better knowledge production (e.g. de la Cadena and Blaser 2018; Mignolo 2012). These threads remain in sometimes tense conversation with scholars of Indigenous and anti-colonial STS, who question their lack of engagement with the many Indigenous cosmologies that already consider the kinds of relationalities they explore (Lyons et al., 2017; Pérez-Bustos, 2017; Sundberg, 2014; TallBear, 2011; Todd, 2016; Tuck and McKenzie, 2014; Watts, 2013; Willey, 2016) and who express concern that the anti-essentialism inherent in new materialism undermine the ontologies of Indigenous societies (S Hunt, 2014: 29; Kuokkanen, 2011: 4–11; Watts, 2013: 28–31). Despite these criticisms, these feminist, post-colonial and anti-colonial bodies of scholarship converge on the recognition that the boundaries and the world co-produced with dominant science are not inevitable and could be otherwise. For scholars making these arguments, the implication of this insight is not a rejection of science and objectivity. Instead, for them these arguments lead to efforts at pursuing the co-production of better science, more objective knowledge, and more just worlds via deliberate, thoughtful peer-to-peer engagements with peoples thinking in and from different ontologies (Chakrabarty, 2000: 92; Kuokkanen, 2011: 11; Mignolo, 2012: 318; TallBear, 2013: 202–203; Todd, 2016).

Kim TallBear observes that Jasanoff's articulation of co-production offers a "greater focus on the 'authority of the state' in productions of science, technology, and power" (TallBear, 2013: 23) than scholars of feminist, post-colonial, and anti-colonial STS. This focus on the authority of the state leads Jasanoff to a different set of questions in relation to these counterparts – questions directed less towards how to build different worlds and different knowledges and more toward describing how dominant regimes of knowledge and world building come into being. Jasanoff herself describes her project as directed towards understanding the "regimes of

interpretation" (2001: 336) that become stabilized within "industrial" – and especially liberal democratic – states, and that bring the dominant knowledges and social orders of such states to be taken for granted. Rather than pursuing experiments in knowledge- and world-making, this means studying states that are organized around the fundamental organizing dualities central to dominant intellectual traditions: nature/culture, fact/value, knowledge/politics, among else. Her work challenges the persistent received view that the knowledge stemming from these traditions is universal by detailing the construction and maintenance of these dualities through their co-produced relationships with state governance (2005, 2009c) and legal institutions (2009a).

In this sense, while Jasanoff and her feminist, post-, and anti-colonial counterparts share broad understandings of the inseparability of knowledge-making and world-making, the former's project remains mainly descriptive while the latter is more experimental and prescriptive. In this dissertation, I remain sympathetic to the feminist and anti-colonial project; however, my own position in relation to my research topic leads me to tend towards the descriptive – an issue I address in further detail below. With Jasanoff, I focus on tracing how regimes of power/knowledge operate to stabilize both the liberal democratic states' putative authority as well as the epistemology and ontology upon which this authority relies.

I join Jasanoff in tracing the imaginative, epistemological, and ontological dimensions of the liberal democratic state's authority, though, while troubling one of the underexamined categories Jasanoff deploys in her work - namely 'the collective'. Reflecting and extending the longstanding insights from STS that knowledge-making is social, Jasanoff describes the processes that stabilize authoritative modes of knowing (civic epistemologies) and entrench tacit visions of desirable sociotechnical futures (sociotechnical imaginaries) within liberal democracies as similarly collective processes. She does so while emphasizing that this kind of

stabilization often requires "blatant exercises of power" (Jasanoff, 2015: 4); however, the notion of something being held 'collectively' carries with it connotations of democratic consent. These connotations of democratic consent leave open – deliberately, we can presume - the question of how power is exercised via "elements of subjectivity and agency [that] get bound up with technoscientific advances through adjustment in identities, institutions, and discourses" (p. 14) to create a collective that, from the outside, appears to be relatively unified around particular ways of authorizing knowledge and envisioning the future.

This dissertation pulls on the theoretical threads from feminist and anti-colonial STS to explore the often-hidden processes that yield the collectives so central to Jasanoff's state-centered approach to co-production. When the articles in this dissertation describe how workers and future-workers living in Canada become involved in reproducing the settler state's hegemonic sociotechnical imaginary, they draw attention to the ways establishing something that can reasonably be called a 'collective' capable of collectively performing imaginaries and collectively sharing ways of seeing the world requires coercion and discipline. As two of the articles in this dissertation make clear, the importance of coercion and discipline is especially evident in a settler-colonial context like Canada's; however, my hope is that this case provides clues as to how the process of collective formation may play out, if more subtly, in other contexts as well. For those in Canada concerned about questions of climate change, resource extraction, settler colonialism, and good livelihoods, the processes of collective formation described in these articles also offers entry points for considering possible ways the process of collective formation might disrupt the power of the settler-state. They do so by provoking questions like: "Are we a we? What kind of we can be built? […] what kinds of entanglements already exist and can be made stronger, and which need to be made weaker?" (Haraway in *For the Wild*, 2019: 26:15).

Questions & Objectives: picking up the thread of oil and gas workers

It is against this background and theoretical orientation that I follow the well-worn tradition in STS of gathering data in relation to a specific sociotechnical controversy. In my case, I do so to gain insight into broad processes of collective formation in relation to sociotechnical imaginaries. I focus my attention on visions of desirable sociotechnical futures as they are articulated within the discursive field – the social arenas that constitute themselves around "controversies, problematisations and truth claims" (Keller et al., 2018: 37) - surrounding oil and gas workers during a single episode of the ongoing conflict over the Coastal GasLink pipeline (CGL) in what is now Northern British-Columbia. As the articles that follow explain in more detail, one of the key elements of this conflict is an ongoing struggle over who has the authority to grant Coastal GasLink permission to build the portion of the pipeline that, if built, would traverse Wet'suwet'en territory. The project has received regulatory approval from the Province of British Columbia. CGL has also signed benefit agreements with 20 of the 22 elected First Nations band councils along the pipeline route. Those among the Wet'suwet'en refusing the project, though, point out that these agreements have been signed with councils created under the colonial Indian Act and that, according to the Act, band councils are only responsible for lands within reserves - not for the traditional territories that extend well beyond them.

In formulating the overarching research question that shaped this research project, I started from the premise that imaginaries are collectively shared and performed, and I reasoned that the social identities upon which they rely must be enacted, in some measure, by people living their day to day lives. I assumed at the outset that for this to be the case, some measure of alignment between state level and workers' imagination is required – that workers were participants in the process of collective imagination. With many visions of desirable futures on

offer, with different implications for oil and gas workers and their relationship with technoscience and with the Canadian state, I came to my research question by wondering how is it that workers become enrolled in imagining, performing, and materializing some sociotechnical imaginaries and not others. Among my research findings is the conclusion that my hypothesis that workers participate in the collective imagination on display at the level of the state was unwarranted.

My overarching research question was: *How is enough alignment achieved between state level and on-the-ground imagination and enactment of oil and gas workers' identity to enroll these workers into the work of stabilizing and bringing dominant sociotechnical imaginaries in Canada to life?* Under the umbrella of this overarching question, I also asked: *How are sociotechnical imaginaries mobilized at the national scale to shape the identities of oil and gas workers during sociotechnical controversies, and how do individuals imagined to be oil and gas workers respond to these mobilizations? How are identity templates of oil and gas workers constructed in national discourse during technoscientific controversies? What alignments and tensions exist between these identity templates and the subjective experience of individuals assumed to be part of these groups? How, if at all, do participants in national discourse address alignments and tensions between their discourses and those of the workers they are talking about? How, if at all, are alignments strengthened and tensions mitigated? How, if at all, do individuals assumed to be oil and gas workers address alignments and tensions between their subjective experiences and national discourses about them? How, if at all, are alignments strengthened and tensions mitigated?*

Many historic sociologists have studied workers, notably the "triple legacy" (Kerbo, 2006: 228) of those canonical sociologists who put forward ideas of social stratification: Karl

Marx, Emile Durkheim, and Max Weber. From a classical Marxist perspective, society is stratified based on relationship to the means of production. Anyone who sells their labour in exchange for a salary or hourly wage is a 'worker' or, more precisely, a member of the proletariat. In this sense, 'workers' include everyone from general labourers to tradespeople to engineers and managers. Functionalist perspectives descended from Durkheim as well as those drawing on Weber's (1922) three-component theory of stratification identify several more social strata, offering a narrower view of what constitutes a 'worker' or, at least, asking that the term be made more specific by distinguishing, for instance, between white-collar and blue-collar workers. Even contemporary sociologists working within the Marxist tradition have sought to add some nuance to the Marxist perspective in this way. Erik Olin Wright (1985, 1998, 2015), for instance, maintained a Marxist commitment to thinking about stratification in relation to the means of production, but was also informed by Weber's more multidimensional views on stratification when he identified four main classes: (1) capitalists, who own the means of production, (2) managers, who control the labour of others, (3) workers, who have only their labour to sell, and (4) the petty bourgeoisie who own some small means of production but employ few or no workers.

Without denying that these realist approaches to understanding what constitutes a 'worker' can be usefully applied elsewhere, in this project I am more closely aligned with those who attend to the subjectivity of social location (Irwin, 2015; Savage et al., 2010). I am primarily interested in the subjective experiences and (self-) representations of individuals and in the role these subjectivities and (self-) representations play in constituting the very social orders that concern sociologists interested in objective measures of social stratification. I am especially interested in how these subjectivities and (self-) representations contribute to the discursive and

material co-production of a shared identity in relation to a particular set of technologies now and imagined into the future. In this sense, and for this reason, for the purposes of this research project an 'oil and gas worker' is any person who *self*-identifies as such or who is referred to as such and is thus constructed as such in national discourse. As will be seen in the pages that follow, in practice this means that the term carries different meanings for different interlocutors; 'worker' is an elastic, dynamic construct.

Positionality & ethics

As STS scholars well know, social location informs the questions we ask, how we go about answering them, and what we ultimately conclude (Liboiron et al., 2023). As such, clarifying our own social location is a basic act of scholarly good practice to help orient our readers. I did not grow up in oil country, but in the big open skies of what is now called Manitoba. I come from French-speaking farmers and tradespeople and from Polish-speaking railway workers via a bohemian artist father in Winnipeg and a mother who worked in education in rural Manitoba. Despite our peripheral relationship to the oil patch, there is something about the 'honest work' that seems to be imagined as going on there that matters to the people with whom I eat Christmas dinner. As the first generation off the farm, most of the women of my mother's generation moved into caring professions while the men continue to work with their hands, including, for some, stints working in oil and gas when times were tough. When I think of where I come from, I think of big, calloused hands and the kind of 'honest hard work' celebrated in heroic stories about settlers who 'tamed the land' to grow food and extract resources.

Even though I have some critical distance from these stories, they have created well-worn affective tracks in my bones and heart. When I see oil and gas workers invoked in debates about fossil fuel infrastructure, these tracks get activated. I believe this is also what animated the pride

I saw in my pépère's eyes when he spoke of working on pipelines when he was young – I am still not sure if he was talking about helping to build the natural gas pipeline that runs across Manitoba or performing maintenance work on the aqueduct that carries water from Treaty 3 territory around Shoal Lake to Winnipeg.[6] That precision didn't seem to matter to him. My pépère died just as I was beginning to conceive of this research. My memories of him animate this project. So does the complex, complicit love and admiration I felt and still feel for his worn, rough hands both despite and because of all that they represent not just for me but for the mythology of settler-colonial Canada.

It is from this position that I have deliberately refused (Simpson, 2007; Tuck and Yang, 2014: 223) to engage with questions about how the conflict over the Coastal GasLink pipeline has played out among the Wet'suwet'en or about what a future informed by Wet'suwet'en traditions might tangibly look like. I have neither the relationships nor the experience that would allow for an ethical engagement with these lines of inquiry. Instead, I have endeavored to follow Laura Nader (1972) by aiming to "study the colonizers rather than the colonized" (Nader quoted in Spady 2020:23). To the extent that Wet'suwet'en people/s, traditions and debates made their way into the conversations of the powerful over the period of my study, they appear in the pages that follow. At every turn, though, I have endeavored to return to Nader's words as I have analyzed and written about these findings.

In thinking and writing about workers, I have also borrowed from Samantha Spady (2020) a desire to apply to research about settlers Tuck and Yang's insistence on an "ethics for research that differentiates between power—which deserves a denuding, indeed petrifying

[6] The aqueduct project turned the Shoal Lake #40 reserve into an island, cutting the community off from the mainland and subjecting it to over 18 years of boil water advisories. See Perry (2016) for more on this history.

scrutiny—and people" (Tuck and Yang, 2014: 223) whose wisdom and stories should be respected rather than commodified into research product. This is especially so in the way I have analyzed and written about how oil and gas workers represent themselves.

Applying Tuck and Yang's advice in this context is tricky. Tuck and Yang advance their ethic as it concerns decolonial research involving Indigenous and other over-researched people/s. Applying it here risks sanitizing and rendering innocent those whose intersectional (Crenshaw, 1990) identities as both settlers and workers render them complicit in ongoing injustice even as they may live their own injustices through their relationships to labour and capitalism. Sensitive to this risk, Spady says of her own research:

> I work hard to empathize and understand the views and experiences [white oil and gas workers in Fort MacMurray] shared with me, and that understanding, held alongside my commitment to recentring Indigenous sovereignty over the lands and waters of this place remains a difficult, yet productive tension in this work (2020: 29).

I read here Spady's commitment to holding in tension (1) the circulation of colonial power and the value of understanding it in all its detail, (2) the humanity of many of the people who enable and benefit from this power, and (3) the value of de-centering them even in research 'about' them. I share this commitment to holding this tension, rather than seeking to resolve it.

What this dissertation is not

With these comments about positionality and ethics in mind, it is important to take a moment to clarify three things this dissertation does not do. First, it follows from my comments about positionality that I did not set out in this project to study Indigenous oil and gas workers or to study Wet'suwet'en views on the Coastal GasLink pipeline. It bears mentioning that while I did not preclude the possibility of Indigenous workers volunteering to participate in this project,

no interviewees self-identified as Indigenous and all presented as White. Other differently situated researchers have considered Indigenous oil and gas workers' perspectives on their work lives (Alook, 2016; Alook et al., 2021) and examined conflicts over resource extraction on Wet'suwet'en territory (Spice, 2018, 2022). As I have already explained, my choice not to do so, and to focus on politicians and the mainstream media, is a situated decision that reflects my own social location and my ethical commitments.

Second, this dissertation does not pretend to reflect the views of all oil and gas workers. The 14 workers I interviewed are not a representative sample of people who work in oil and gas (see Table 1 for demographic details). Several interviewees spoke of different 'sub-cultures' within the sector based on ones' trade, on whether one worked in camps or from home, and based on whether one worked on pipelines or directly in extraction. These differences are impossible to consider here given the broad range of occupations held by the people with whom I spoke. Perhaps even more importantly, about one third of interviewees spoke of being more "liberal" or "progressive" than their peers. One of these workers shared photographs of a "Fuck Trudeau" flag at a worksite. A potential interviewee asked me to meet him at the Trucker's Convoy rally in Ottawa, which I was physically unable to do because I was 8 months pregnant. Another asked me to share my views on Justin Trudeau's leadership and on the legitimacy of the Canadian Broadcasting Corporation before ultimately choosing not to speak with me. I share these details to flag that while at least half of the people with whom I spoke expressed some kind of alignment with Conservative politics and politicians in Canada, it is likely that those oil and gas workers most closely aligned with recent right-wing mobilizations in the country were the least likely to choose to speak with me. At the same time, interviewees *did* reflect considerable differences with respect to age, occupation, years in sector, political affiliation and, importantly, in their

discussions of the futures they wanted for themselves and of the future role they saw for oil and gas in Canada. A majority of them saw oil and gas playing an important role in Canada for decades to come. I have analyzed and written about my findings in a way that is sensitive both to this diversity and to the sampling bias inherent in the final list of interviewees. I have done so by reporting here on the one theme that came up almost universally among interviewees regardless of job, political affiliation, or age.

Finally, this is not a project centered on "following the money" or otherwise empirically tracing the material and financial constituents of world-making. These constituents appear here to only the extent that they appear in discourse and in the secondary literature I use to analyse and discuss my empirical findings. Others, equipped with theoretical and methodological tools better suited for a project that systematically attends to the material, have already offered substantial insight about how financial mechanisms and material infrastructures associated with oil and gas sustain settler-colonialism (Cowen, 2019; LaDuke and Cowen, 2020; Pasternak and Schabus, 2019; Stanley, 2019). I have drawn on this work throughout this dissertation, and my aim in bringing forward the present work is to add to it insights into how matters of epistemology, subjectivity, and imagination are co-constitutive parts of the kind of settler world-making it documents.

Methods: applying SKAD to situate oil and gas workers in sociotechnical imaginaries

To answer my research questions, I draw on the Sociology of Knowledge approach to Discourse Analysis (SKAD) as put forward by German sociologist Reiner Keller (Keller, 2011; Keller et al., 2018) to conduct a two-stream discourse analysis of representations of oil and gas workers within sociotechnical imaginaries circulating during the controversy over the Coastal

GasLink pipeline in the winter of 2020 (see Figure 1). SKAD provides a Foucauldian approach to discourse analysis consistent with (1) my overarching post-structuralist theoretical orientation and (2) with my interest in considering the ways discourse is materialized through "knowledge/power complexes that exist through and in practice(s) and dispositifs" (Keller et al., 2018: 4). The methodology is especially useful for considering institutional and physical mechanisms (dispositifs) associated with discourses of the sort described in relation to railways and pipelines. Most importantly, unlike more quantitative approaches to analysing speech and text such as content analysis, SKAD offers tools for moving from identifying themes within a dataset to drawing out the storylines and narrative structures that might never be made explicit in any given utterance or string of text but that emerge when looking at a dataset wholistically. This is important because sociotechnical imaginaries are rarely made explicit. By nature, they come through as much in what is not said or what is taken for granted in discourse as in what is said directly.

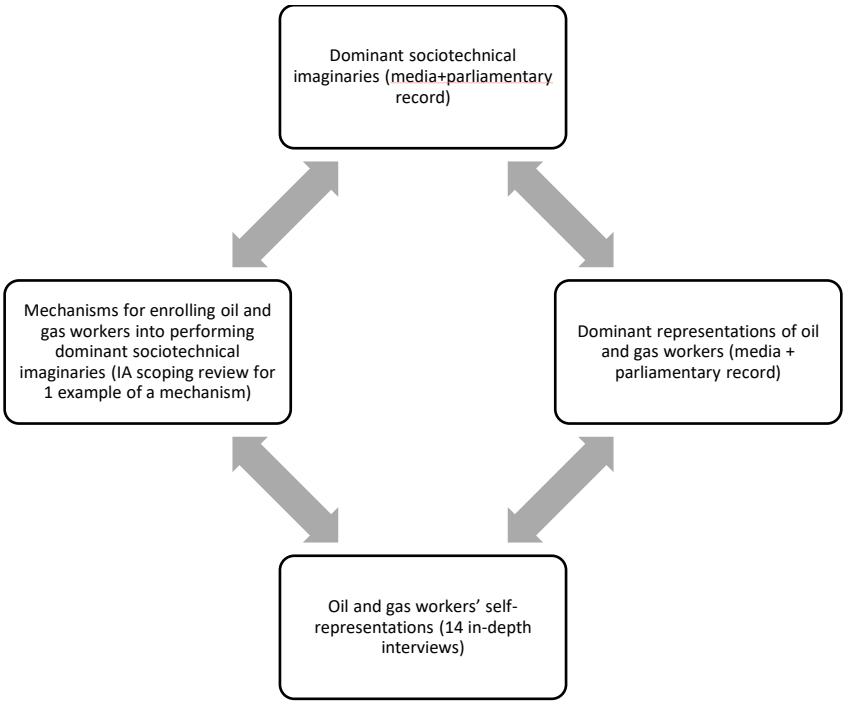

Figure 1: Visual representation of key elements of research methods

The first stream of my SKAD analysis examines representations of oil and gas workers in relation to the dominant sociotechnical imaginary for Canada circulating in the mainstream media and the Parliamentary record during and immediately following large-scale mobilizations against the Coastal GasLink pipeline in the winter of 2020. In choosing these data source for this analysis, I lean on the work of others who have already documented the critical role of mainstream media (Anderson, 2006; Callison and Young, 2019) and of political discourse (Hajer, 1995) in shaping society and stabilizing national imaginaries. I searched the mainstream media and the Canadian Parliamentary record to find and analyze 1732 news articles/columns as well as 599 speeches from Parliamentary debates and Parliamentary committee meetings from between December 1, 2019 and August 31, 2020. I did this to identify the visions of Canada's energy future that circulated over this period and to situate fossil fuel workers in them.[7] I began by

[7] For the media search I conducted a search of the *Canadian Major Dailies* database which includes full text access to more than 35 of Canada's top national and regional newspapers using the terms ("Coastal Gaslink" OR

extracting passages that reflected: (1) visions of the future (2) representations of fossil fuel workers (3) mechanisms through which workers might become enrolled into visions of the future. From there, I inductively sorted passages into themes and identified dominant narrative structures and argumentation clusters in relation to and across themes (see Appendix D). This allowed me to reconstruct the sociotechnical imaginaries that circulated over this period, the story lines about workers within these imaginaries, and the dominant identity templates for workers reflected in them.

In this stream, I also take a deep dive into one specific mechanism contributing to the construction of subject positions associated with discourses about oil and gas workers in the mainstream media and Parliamentary record. To do so, I draw on the results of a 'scoping review' (Arksey and O'Malley, 2005; Levac et al., 2010) I helped conduct that examined literature from around the world to assess how justice has been characterized in impact assessment scholarship published over the last two decades (Blue et al., 2021). For this review, we developed and refined keywords[8] on justice and impact assessments in collaboration with a university librarian at the University of Ottawa and in consultation with other IA scholars and practitioners before searching two databases (Scopus, Web of Science) for English-language peer-reviewed journal articles published between January 2000 and December 2019, ultimately analysing 249

"Wet'suwet'en" OR "hereditary chiefs" OR "TC Energy" OR "Unist'ot'en" OR "Wetsuweten" OR "Unistoten" OR "Gidmet'en" OR "Gidmeten") AND ("jobs" OR "job" OR "workers" OR "worker" OR "work" OR "employment" OR "unemployment"). For my keyword/tag search of parliamentary records at ourcommons.ca, this search string was too complex so I reviewed all portions of the Hansard, journals, and committee meetings tagged "Coastal Gaslink".

[8] Our initial search terms were: ("impact assessment" OR "environmental assessment") and ("justice") and ("inclusion" OR "participation" OR "fair" OR "fairness" OR "distribution" OR "equity" OR "culture" OR "epistemic justice" OR "cognitive justice" OR "traditional knowledge" OR "Indigenous knowledge" OR "lay knowledge" OR "local knowledge"). Based on results from these searches, we conducted a second search using the following terms: ("impact assessment" OR "environmental assessment") AND ("traditional knowledge" OR "Indigenous knowledge" OR "lay knowledge" OR "local knowledge" OR "Inuit Qaujimajatuqangit"). For a full discussion of the methodology of this project, see (Blue et al., 2020, 2021).

publications. In this dissertation, I pick up on the finding that the 41 peer-reviewed articles about Canada within this larger dataset overwhelmingly address issues pertaining to the inclusion of Indigenous knowledges in impact assessment processes. I place these articles in conversation with existing federal impact assessment legislation and governance structures to consider what this finding tells us about Canada's dominant sociotechnical imaginary and about workers within it. In so doing, and consistent with SKAD, I treat the articles about Canada from this dataset not only as scientific studies but also as expressions of a sociotechnical imaginary and as discursive interventions operating alongside written Acts, terms of reference, governance structures, and so on.

Given its genesis in STS scholarship interested in the authority of the state, research on sociotechnical imaginaries lends itself to studying official discourses and practices of the state or, less frequently, of other powerful actors. It does so by examining legal rulings, policy documents, the mainstream media, and the popular writing of prominent people (Jasanoff, 2015: 24–27). The first stream of my discourse analysis is consistent with this general tendency. Asking about how workers become enrolled in an imaginary, though, means following imaginaries outside elite discourse and practice into the lives of 'everyday' people. This is why I pair this first stream of analysis with 14 semi-structured in-depth interviews with individuals who self-identify as oil and gas workers. In this second stream of analysis, I turn my attention to how representations of oil and gas workers in the mainstream media and Parliamentary record relate to how these workers represent themselves. Following Saša Bosančić (2018, 2019), I draw on the alignment between SKAD and the interpretive paradigm in sociology, with its interest in "investigating action and the social worlds from the point of view of the actors themselves" (Keller and Clarke, 2018: 57), to understand this influence as simultaneously taking place in the

context of unequally circulating flows of power and as allowing for individual agency in relation to this power. These are questions that are rarely considered within Foucauldian approaches to discourse analysis. Bosančić's work therefore offers a helpful starting place from which to consider the dynamic relationship between the shaping of subject positions, on the one hand, and of subjectification, on the other.

To recruit interviewees, I developed a digital recruitment poster directing people to a project-specific website. I circulated the recruitment poster within my personal networks via email and on social media (Facebook and twitter) and shared recruitment materials in social media groups (Facebook and LinkedIn) aimed at people working in oil and gas in Canada. Over my recruitment period, I also volunteered with the NGO Iron and Earth, formed by oilsands workers with the aim of creating pathways to careers in the net-zero economy. There, I was part of a team of people interviewing workers about their views on the concept of "just transition". These interviews were meant to supports Iron & Earth's effort to develop a prosperous transition campaign (Iron & Earth, n.d.) and ensure fossil fuel workers contribute meaningfully to just transition plans in Canada. Information about my thesis research was shared with Iron and Earth interviewees at the end or their interviews. Of the 14 interviews I conducted, five heard of my project through this relationship with Iron & Earth. Four were recruited via immediate personal networks. Three were directed to me via another interviewee (see Table 1 in the following chapter for details on interviewees).

Interviews lasted an average of two hours, with the shortest lasting 84 minutes and the longest lasting three hours. In these interviews, I drew on participant- and researcher- generated photo elicitation (Harper, 2002a; Van Auken et al., 2010) to gain insights into how oil and gas workers position and represent themselves in relation to conflicts over fossil fuel projects and

different sociotechnical visions of Canada's energy future (see Appendix A for interview guide). In advance of the interviews, I invited interviewees to provide up to 9 photos that responded to three prompts (see Appendix B) and asked them to tell me about the photos they had shared. Others have already explained how the tangible stimuli involved in this kind of participant-driven photo elicitation helps produce "different and richer information than other techniques" (Van Auken et al., 2010: 373) while helping to achieve more equitable relations of power between researchers and research participants.

In the second part of each interview, I showed interviewees ten images and six passages that reflected (1) the dominant representations of oil and gas workers I had identified through my analysis of the media and Parliamentary record and (2) dominant visions of Canada's energy future I identified in this same analysis, asking interviewees to respond to them (see Appendix C). I selected passages from my analysis of media and parliamentary discourse. Given the text-heavy nature of the mainstream media and parliamentary record, in addition to images directly from these sources I drew from sources related to, but not immediately part of, my first dataset to secure images that reflected the major themes I had identified via textual analysis. Two images came directly from news stories captured in my dataset, two came from an 'alternative' media outlet not captured in my dataset, one came from a magazine not included in my dataset, two came from Government of Canada publications, two were screen shots of a popular short film about energy transition, one came from a report published by an NGO. Here again, researcher-provided images and passages helped "break the frame" (Harper, 2002b: 21) by presenting images of interviewees' world that were often unexpected, opening up more space for interviewees to teach the researcher more about their social world. As both researcher- and participant- generation photo-elicitation rely on what is seen, rather than what is not visible

(Harper, 2002b: 18), this technique aligns well with my effort not to uncover something hidden or essential about workers, but instead to consider precisely workers' visible self-positioning and self-representations in relation to dominant representations of them.

As with my analysis of the mainstream media and parliamentary record, I began coding 29 hours of transcribed video recordings and 91 photographs by extracting passages and images related to (1) visions of the future, (2) (self)-representations of fossil fuel workers, and (3) mechanisms through which workers become enrolled into particular visions of the future over others. I went on to inductively sort themes within each code, again identifying narrative structures and argumentation clusters in relation to and across themes (see Appendix D). This allowed me to construct an understanding of interviewees' self-positioning in face of positioning-pressure from politicians and the media. For validation purposes I presented these findings in two focus groups, attended by 8 interviewees.

Map: Overview of the three articles

The three articles included in the body of this thesis represent three different aspects of the findings that surfaced from my research. Some key findings are implicit throughout the articles that bear mention here. First, the identification of mechanisms of enrollment in all data sources yielded an unmanageable number of mechanisms that could not all be meaningfully followed within the scope of the present project (see Appendix D). My decision to focus on impact assessment as one mechanism of enrollment in Chapter 4 aligns with the emphasis in STS on how institutions of governance and legislation, especially those dealing with expert knowledge, help stabilize particular worlds and foreclose others. Discussion of other mechanisms throughout the media and Parliamentary record, though, did contribute to the broader picture painted in these sources of resource extraction in general, and oil and gas

extraction in particular, as central to Canadian society and to the Canadian economy. I engage with this dominant vision of Canada in all three articles.

Just as importantly, Indigenous workers are discussed about four times more often than workers not explicitly identified as Indigenous in the mainstream media and in Parliament. This emphasis on Indigenous involvement in oil and gas carries through to dominant visions of the future and to the main mechanisms identified as helping to arrive at this future. This finding explains my choice to focus on Indigenous oil and gas workers in Chapter 3. This emphasis on Indigenous workers in the media and Parliament exists alongside representations of oil and gas workers as industrious and socially mobile, on the one hand, and as dangerous or reactionary, on the other, which appear at about the same frequency. Importantly, though, about half of the instances of workers appearing as dangerous/reactionary surface in instances where someone is criticizing others for describing oil and gas workers in this way. I explore this finding in more detail in Chapter 2.

Finally, in interviews and focus groups with oil and gas workers, no themes pertaining to visions of the future appeared with enough frequency to approach saturation. Simply put, I did not achieve a level of data saturation with respect to workers' visions of the future comparable to the saturation achieved in the media and the parliamentary record. It is why I say relatively little in the pages that follow about workers' visions of desirable sociotechnical futures. Workers' dominant self-positioning, on the other hand, was shared virtually universally among all interviewees. This is why I zero in on this finding in Chapter 2.

The articles included here draw on these and other findings to examine how elite actors deploy their discursive resources to rearrange lands and lives in accordance with their sociotechnical vision of Canada as yoked to oil and gas such that this vision achieves hegemony

in the country. Each article traces a different aspect of the ways power circulates in Canada to naturalize this vision and to deliver its collective performance by, in part, making work in oil and gas the path of least resistance for many.

In my first article, I consider the Parliamentary record, the media, and interviews with workers to examine the influence of discourse in shaping oil and gas workers' self-representations. I document how politicians and columnists portrayed oil and gas workers as hard-working, socially mobile, nation-builders during the conflict over CGL. I also document workers' ambivalence to this portrayal. They end up with jobs in oil and gas even when they don't buy into the dominant national imaginary or into the representations of them within it. For many, enrolment into collectively performing Canada's dominant sociotechnical imaginary is a least-worst choice in the sense that they actively speak of, and sometimes even actively seek out, futures ill-aligned with the imaginary they help perform.

The second and third articles function together to illustrate the critical role of epistemology and ontology in securing settler-colonial futures and in creating paths of least resistance for Indigenous people to become oil and gas workers, joining the collective performing Canada's dominant sociotechnical imaginary. In the second article, I stay with the Parliamentary record and mainstream media to showcase the prominence of arguments over the course of mobilizations against CGL that Indigenous people/s could and should fit into Canada's dominant sociotechnical imaginary by getting jobs in oil and gas. The rhetorical moves politicians and the media used to do this implicitly mobilized big epistemological and ontological claims to eclipse questions of jurisdiction at the heart of CGL resistance – questions that, with more attention, might lead to arrangements of lands and lives that offer altogether different paths of least resistance for those Indigenous people/s currently imagined as having

bright futures in oil and gas. I draw attention to how the disciplinary power of the Canadian elite's dominant sociotechnical imaginary helps facilitate the normalization of the ontology and epistemology tied to dominant science, eclipsing questions of competing jurisdiction in the process. I also argue that defenders of the dominant imaginary were forced to do this precisely because Indigenous land defenders and water protectors, along with non-Indigenous allies, were actively and forcefully resisting participation in that imaginary's performance.

In the third and final article, I show how efforts to include Indigenous knowledges in state-led impact assessment also mobilize the ontologies and epistemologies associated with dominant science and I argue that these efforts amount to continued attempts at making Indigenous peoples subjects of the Canadian state.[9] This process does much to materially secure settler-colonial future by, among else, legitimizing oil and gas projects and enrolling Indigenous people as oil and gas workers. Here again, we see processes that will lead to Indigenous workers participating in performing Canada's dominant sociotechnical imaginary. As with the second article, the scope and scale of the resistance to CGL is but one example of the scope and scale of the resistance to this participation.

Looked at together, my articles reveal how discourse functions in the Canadian state to funnel Indigenous and non-Indigenous people into jobs in oil and gas in accordance with an elite's vision of Canada as necessarily linked to the sector. The articles show how oil and gas workers join the collective performance of this imaginary not out of a sense of affinity but as a response to disciplinary power. Combined, these articles also hint toward alternative possible collectives organized around dissimilar, even antagonistic, visions of the future (see Conclusion).

[9] The theoretical work throughout this dissertation, and especially in this final article, would not have been possible without ongoing engagement with Alex Paterson as he completed his MA (Paterson, 2018).

Chapter 2 - On being an oil “and gas worker”: Dominant discourse, self-representation, and Canada’s energy future

Alana Lajoie-O’Malley

Abstract

Political wrangling over the future of oil and gas in the context of climate change dominates national debates about Canada’s energy future. These debates frequently rhetorically center the needs and desires of oil and gas workers. Who, though, do politicians and pundits imagine these workers to be, how do they imagine these workers fitting into the visions for the future they put forward, and how do these imaginations and visions measure up against how these workers imagine themselves? In this paper, I consider these questions by juxtaposing representations of oil and gas workers in the mainstream media and among federal politicians with representations oil and gas workers make of themselves. I find that the way oil and gas workers represent themselves is considerably more versatile and adaptable to different visions of Canada and its energy futures than media and politicians’ representations of them. This points towards a broader range of possible futures that meet the needs and desires of oil and gas workers than those commonly assumed to do so.

Introduction

In the summer of 2023, Canada's Liberal Minister of Natural Resources introduced Bill C-50, colloquially called the "Sustainable Jobs Act" (*An Act respecting accountability, transparency and engagement to support the creation of sustainable jobs for workers and economic growth in a net-zero economy*, 2023). The Act, Canada's answer to global calls for a 'just transition', is meant to provide the mechanisms through which Canada's labour force will meet the needs of tomorrow's 'net-zero' economy. Implicit the act and discussion papers associated with it (Natural Resources Canada, 2023) is a particular vision of Canada's energy future and of the workforce and technologies required to build and maintain it. We can attribute the fact that neither the words "just" nor "transition" appear in the title of the new Act to ongoing political tensions about the place of oil and gas workers and technologies in this future. These tensions can be seen, among else, in the strained relationship between the federal government and political leaders in the oil-rich province of Alberta. Responding to the legislation, Alberta Premiere Danielle Smith made sure to make her governments' rejection of the language of transition clear: "Alberta will not recognize, co-operate with or enforce any attempt to phase out our province's oil and gas industry or its workforce" (Smith quoted in Aldrich, 2023). In response to this kind of rhetoric, the federal Government has been increasingly and visibly including Canadian oil and gas in its vision of the country's 'net zero' future. The interim Sustainable Jobs Plan associated with the Act, for instance, speaks of the importance of Canada's conventional energy sources and cites this as an important reason it refers to 'sustainable jobs' rather than 'just transition' in its new legislation: "the global energy transition presents an enormous economic, job-creating opportunity across the country – for those in both conventional and emerging energy and energy-related fields. The term 'sustainable jobs' is, in our minds, one

that is more inclusive and indeed more accurate for Canada than terms like 'just transition'" (Government of Canada, 2023: 9). Alberta Premier Danielle Smith has voiced her appreciation for this shift away from talk of "transition", emphasizing "we are going to be phasing out emissions, we are not going to be phasing out oil and natural gas jobs" (Rabson, 2023).

Amidst this political rhetoric are oil and gas workers – the people who rely on the sector to support themselves and their families. Presumably, these workers' interests are front-of-mind when politicians and pundits tussle about terms like "just transition" and "sustainable jobs". Or, perhaps more accurately, it is these people's allegiance for which politicians jockey when they argue that their visions of the future promise good jobs for today's oil and gas workers. Who, though, do politicians and pundits imagine these workers to be? How do these politicians and pundits imagine oil and gas workers fitting into the visions for the future they put forward? How do these imaginations and visions measure up against how these workers imagine themselves and their futures? In this paper, I draw on an analysis of media coverage, Canadian parliamentary debates, and interviews with oil and gas workers to answer these questions. I apply the sociology of knowledge approach to discourse analysis (Keller, 2011; Keller et al., 2018) to examine how the mainstream media and federal politicians in Canada represented the identities of fossil fuel workers during one period of significant debate about the future of the country's oil and gas industry, and to consider this representation in relation to how fossil fuel workers represented themselves during in-depth interviews and focus groups. I call the identity template that emerged for fossil fuel workers in the media and among politicians the *industrious self.* I go on to show that while some workers did indeed identify with the *industrious self* and with the vision of Canada attached to it*,* others did not. They did, though, nearly universally converge on a different identity. Regardless of age, work history, and political leanings, the oil and gas workers with

whom I spoke all emphasized the skill, craft, and care involved in their work. In this sense, they represented themselves as *skilled selves*. Based on this finding, I argue for the importance of not mistaking dominant representations of oil and gas workers for how these workers represent themselves and the futures they want. This matters because these representations yoke fossil fuel workers to a longstanding vision for Canada as a resource nation in ways that obscure and circumscribe their agency to continually affirm, adapt, ignore, or subvert the identity templates offered to them even when material circumstances and dominant discourses funnel them in specific directions. As struggles over the place of fossil fuels in Canada's energy future continue to intensify, disaggregating fossil fuel workers' agency and voice from the stories told about them helps clarify the extent to which their own self-representations are considerably more versatile and adaptable to different visions of Canada and its energy futures than dominant representations of them would have us believe.

Materials & Methods

There is a small but growing body of literature exploring the lives and identities of those who work in Canada's oil and gas sector. Katie Mazer (2019, 2022) interviewed thirteen workers from Prince Edward Island as well as six employment counsellors, two oilsands operators, and two industry association representatives, to consider how white resource workers come to be seen, and see themselves as, a "natural fit" for work in oil and gas. Sam Spady (2019) interviewed fifteen white oil and gas workers living in Fort McMurray – the urban service area in the middle of the Athabasca oil sands in Alberta - to understand how they understand their place in the region and how they make sense of the work they do in relation to Canada as a nation. Nishant Upadhyay's (2016) interviews with fourteen im/migrants of South Asian descent living and working in Fort McMurray inform their writing on the relationships between South Asian

diaspora and Indigenous peoples in Canada. Agele Alook (Alook, 2016; Alook et al., 2021) spoke with 15 Cree and 1 Métis oil and gas worker about their experience in the industry. Sara O'Shaunessy and Göze Doğu (2018) drew on interviews with over 170 people living and working in Fort McMurray to consider how oil and gas development in the region was impacting gender roles. Finally, with several colleagues, Sara Dorow has conducted ethnographic field work in work camps related to oil and gas projects as well as in Fort McMurray to examine the gender dynamics and mental health impacts of fly-in-fly-out work and of work in Canada's bitumen mines more generally (Dorow, 2015; Dorow et al., 2021; Dorow and Doğu, 2011; Dorow and Jean, 2022; Dorow and Mandizadza, 2018).

All these studies approach their questions through the intersecting lenses of race and gender. They highlight how the long hours and the dominance of fly-in/fly-out jobs make it difficult for women, often charged with more care responsibilities at home, to do many of the most lucrative jobs in oil and gas. Among several other factors, researchers draw out how this dynamic contributes to Alberta having the largest gender pay gap in Canada and argue that it leads to an especially masculine culture in oil and gas (Alook et al., 2021; Dorow, 2015; Dorow and Mandizadza, 2018; Mazer, 2022; O'Shaughnessy and Doğu, 2018). This is a theme that is explored more theoretically elsewhere (Daggett, 2018; Letourneau and Davidson, 2023; Williams, 2021). The authors of these studies also argue that white men are particularly advantaged in the sector. Alook et al. (2021) describe how they earn "significantly higher incomes in nearly every occupational field in comparison both to women and to visible minority and Indigenous men" (p. 335). Upadhyay points out that only one of the South Asian professionals with whom they spoke occupied a managerial position and attributes this fact to South Asians being "deemed not fit enough to hold positions of power" (2016: 259).

Unlike other literature on oil and gas workers, I am concerned with how dominant positioning of oil and gas workers as political subjects intersects with the ways these workers understand and position themselves. With Saša Bosančić (2018, 2019), I draw on the alignments between the sociology of knowledge approach to discourse analysis (SKAD) (Keller, 2011; Keller et al., 2018) and the interpretive paradigm in sociology to understand political subject formation as simultaneously taking place in the context of unequally circulating flows of power and as allowing for individual agency in relation to this power. On the one hand, I take the position that "identity templates and role expectations" (Bosančić, 2018: 190) for oil and gas workers are generated through discourse that align with, and help stabilize, dominant visions of what the world does and should look like – of particular interest to me are visions of future energy systems in face of a changed/ing climate and persistent conflicts over fossil fuel projects in Canada. On the other hand, I take the position that individual workers are "never just passive or reactionary forces" in face of these templates, expectations, and visions but are instead free to affirm, adapt, subvert, reinterpret, or ignore them. In this sense, workers engage in a process of self-positioning (Bosančić, 2019: 93). Without denying the importance of race and gender in shaping subjective experiences and identities, this research differs from earlier research in that I did not explicitly set out to consider these self-positioning processes through the frame of gender and race. Instead, I wanted to be guided by what frames and narratives about workers populate mainstream discourse about them and what narratives and frames these workers share in relation to themselves. As I explore in Chapter 3, and as will be seen in the pages that follow, this approach maintained room for questions about race and gender to surface even if they were not deployed as analyst's categories (Collins, 2008) from the outset.

Situated within other studies documenting the critical role of mainstream media (Anderson, 2006; Callison and Young, 2019) and of political discourse (Hajer, 1995) in shaping environmental politics and political subjectivity, I examine the social construction of knowledge about oil and gas workers specifically in relation to Canada's energy future. I examine a specific episode of controversy over an oil and gas project to bound the study: Mobilizations in the winter of 2020 in solidarity with Wet'suwet'en hereditary chiefs refusing the Coastal GasLink pipeline (CGL). These mobilizations represent just one segment of a longstanding conflict about CGL, and about the future of oil and gas in Canada more generally (APTN News, 2020; Bracken, 2021). This episode in 2020 was unique, though, in the scale of economic disruptions it achieved over the course of several weeks. At immediate issue were disagreements over who held jurisdiction to grant Coastal GasLink permission to undertake their project in this territory. As solidarity actions grew, disagreements over whether this project was appropriate in the context of Canada's international climate commitments and disagreements over the safety not only of the pipeline but of the fracked natural gas the pipeline would transport also received significant national attention. As the impact of actions began to influence the fate of other oil and gas projects in the country,[10] the debate shifted again to consider, among other things, the overall place of oil and gas in Canada's future. Journalists (Williams, 2020), columnists (Murphy, 2020), and politicians (Poilievre in Canada, 2020d: 1568) expressed anxiety about the fate of oil and

[10] Not quite a week before the federal government was meant to decide whether to approve Teck Resources' $20.6 billion Frontier Oil Sands Mine Project, and in the midst of blockades against CGL, Teck CEO Don Lindsay wrote to Environment and Climate Change Minister Jonathan Wilkinson withdrawing the project's application from the federal environmental assessment process. Politicians and the media attributed the controversy over Coastal GasLink if not of being *the* cause of Teck's decision, of at least being the final straw that pushed the company to cancel the project (c.f. *Calgary Herald (Online),* 2020). Over the course of the blockades, Warren Buffet's company also pulled its $4 billion investments from an LNG project in Port Saguenay, Quebec. Here again, the media blamed protests against CGL (c.f. *National Post (Online),* 2020a).

gas in the face of some of the largest-scale economic disruption ever seen in the country. This anxiety about workers is why this conflict is appropriate for this study.

I searched the mainstream media and the Canadian Parliamentary record to find and analyze 1730 news articles as well as 599 speeches from Parliamentary debates and Parliamentary committee meetings from between December 1, 2019 and August 31, 2020. For the media search, I conducted a search of the Canadian Major Dailies database which includes full text access to more than 35 of Canada's top national and regional newspapers using the terms ("Coastal Gaslink" OR "Wet'suwet'en" OR "hereditary chiefs" OR "TC Energy" OR "Unist'ot'en" OR "Wetsuweten" OR "Unistoten" OR "Gidmet'en" OR "Gidmeten") AND ("jobs" OR "job" OR "workers" OR "worker" OR "work" OR "employment" OR "unemployment"). For my keyword/tag search of parliamentary records at ourcommons.ca, this search string was too complex, so I reviewed all portions of the Hansard, journals, and committee meetings tagged "Coastal Gaslink". I did this to identify the visions of Canada's energy future that circulated during and immediately following the period of economic disruption and to situate fossil fuel workers in them. I began by deductively extracting passages that reflected: (1) visions of the future (2) representations of fossil fuel workers (3) mechanisms through which workers might become enrolled into visions of the future. I went on to inductively sort passages into themes and to identify dominant narrative structures and argumentation clusters in relation to and across themes. This allowed me to reconstruct the story lines about workers that circulated over this period and identify the dominant identity templates for workers within them.

From there, I turned my attention to the self-positioning of workers. I conducted 14 semi-structured online interviews with individuals who self-identified as oil and gas workers,

incorporating both researcher- and participant-driven photo elicitation (Harper, 2002a; Van Auken et al., 2010) into the interview process (see Table 1 for details on interviewees).

Table 1: Details on interviewees

#	Gender	Age	Years in sector	Occupation, "→" indicates recent change of sector
1	M	35-45	~15	Management of change, regulatory compliance
2	M	75-85	30+	Business development & tech innovation
3	M	35-45	~20	Operations foreman
4	M	35-45	less than 1	Labourer
5	M	55-65	30+	Oil and gas engineer
6	M	65-75	30+	Mechanical engineer/Project manager
7	M	35-45	~7	Geotechnical engineer
8	M	55-65	30+	Pipefitter/Project Manager
9	F	45-55	less than 1	Labourer
10	F	35-45	~10	Operational admin → Business innovation
11	M	35-45	~15	Apprentice welder, Journeyman electrician
12	M	55-65	~12	General construction
13	M	35-45	~15	Machinist → Mental health professional
14	M	25-35	~12	Machinist

Interviews lasted an average of two hours, with the shortest lasting 84 minutes and the longest lasting three hours. Interviews took place in two parts: in the first part, I invited interviewees to provide up to 9 photos that responded to three prompts and asked them to tell me about the photos they had shared. In the second part of each interview, I showed interviewees ten images and six passages that reflected (1) the dominant representations of oil and gas workers I had identified through my analysis of the media and Parliamentary record and (2) dominant visions of Canada's energy future I identified in this same analysis, asking interviewees to respond to them. As with my analysis of the mainstream media and parliamentary record, I began coding 29 hours of transcribed video recordings and 91 photographs by deductively extracting passages and images related to (1) visions of the future, (2) (self)-representations of fossil fuel

workers, and (3) mechanisms through which workers become enrolled into particular visions of the future over others. I went on to inductively sort themes within each code, again identifying narrative structures and argumentation clusters in relation to and across themes. This methodological approach allowed me to construct an understanding of interviewees' self-positioning in face of positioning-pressure from politicians and the media. For validation purposes I presented these findings in two focus groups, attended by 8 interviewees.

Results

Industrious selves and Canadian resource pride

Federal politicians, columnists, and the mainstream media primarily portrayed oil and gas workers as *industrious selves,* with Conservatives and politically aligned columnists doing the most to represent them in this way. Politicians and columnists with other ideological leanings in fact said very little about these workers. In this sense, Conservative representations of fossil fuel workers dominated public discourse. Still, these representations were made from inside a vision of Canada that was shared across the political spectrum – a vision rooted in the idea that the country is inseparable from natural resource extraction. In parliament, Green Party Member of Parliament Jenica Atwin said, "We have always been and will continue to be a resource-driven economy" (Canada, 2020f: 507). Right-wing National Post columnist Raymond de Souza echoed similar sentiments when he argued, "resource development […] has been the Canadian economy from the beginning" (de Souza, 2020). Parliamentary Secretary to the Minster of National Revenue Francesco Sorbara put it this way: "whether it is our agricultural sector, our forestry sector, hydro-electric power driven by our rivers and waterways, the mineral and energy wealth our country, Canada and its citizens are blessed and our potential when we work together is endless" (Canada, 2020a: 1861).

As these visions for the country circulated, Conservative politicians and politically conservative columnists advanced a story line that pitted non-Conservative politicians, pundits, and environmental activists against oil and gas workers. They did this by contrasting oil and gas workers with an out-of-touch urban activist elite, criticizing this elite for having uncharitable views of workers, and juxtaposing this uncharitable view with an understanding of them as hard-working, socially mobile, nation-builders. In a speech in Parliament, Pierre Poilievre characterised the Liberals' attitude towards oil and gas workers as indicative of a "war" (Canada, 2020e: 1568) on those who would be working on cancelled pipeline, bitumen extraction, and other oil and gas projects were it not for "the downtown, internationalist, globalist elite who look down their noses at the working people of our country". Poilievre's Conservative colleague Warren Steinley similarly argued that leaving the oil field for work elsewhere should be the choice of workers and "not the choice of a select few elite who think their jobs are not worth having anymore" (p. 1585). Along with other similarly aligned columnists (*National Post (Online)*, 2020b), Rex Murphy (2020) drew strong distinctions between elite urban politicians and activists, on the one hand, and fossil fuel workers, on the other. Blaming the federal government's "anti-oil and anti-Alberta policies" for embattled oil and gas projects, Murphy described how Canadians could look forward to "another dance of victory from the environmentalists and anti-oil professionals" who "put a blowtorch to the hopes and dreams of thousands of Canadian workers" while they "allow the amputation of our prospects, and leave unemployed people to worry their days away, while leaders head to Paris, or Davos, or even Senegal to chatter about transitioning'".

The urban elite were also described as unfairly viewing oil and gas workers as violent and dangerous. Referring to a speech Prime Minister Justin Trudeau made while "abroad at a

fancy conference" (Canada, 2020e: 1568), Poilievre expressed his anger that Trudeau said "that he thought construction workers brought negative gender impacts to rural communities". Steinley similarly lamented, "we had a group of people in this chamber saying our hard-working men and women in the oil and gas sector and in the construction sector are dangerous in small communities. They help build small communities. They are not dangerous people in those communities" (Canada, 2020e: 1585). Lawrence Solomon (2020) shared similar views in the National Post.

Those advancing this description of the 'urban elite' also argued that this elite's view of workers as violent and dangerous showed just how out of touch they were with average Canadians – Canadians who value getting ahead by working hard. John Brassard, Conservative MP for Barrie-Innifil, drew links between hard-work and Canadian identity: "Canadians do not ask for much. They really do not. We are honest, hard-working, polite people" (Canada, 2020c: 1314). Steinley commented that conflicts over fossil fuel projects are conflicts about whether Canadians believe "in the hard-working men and women who work in our oil and gas sector" (Canada, 2020e: 1585). Andrew Scheer, Conservative party leader, differentiated between those resisting the Coastal Gaslink pipeline and those who work hard, explaining that his party "stand[s] with everyday, hard-working Canadians" (Canada, 2020b: 1127) and not the "radical activists who will not rest until our oil and gas industry is entirely shut down" – activists who engage in activism because they "have the luxury of not having to go to work every day" (for another example from a Conservative, see Canada, 2020d: 1348).

The same politicians and columnists who advanced this representation of the urban elite spoke of the importance of hard work in oil and gas for enabling social mobility. A few minutes before he criticized the idea that work camps present risks to nearby communities, Steinley

provided an example of how work in oil and gas could lead to careers elsewhere: “One of my best friends worked in the energy sector during his time at university. He was a roughneck. He was a rig hand. Now he is an anesthesiologist” (Canada, 2020e: 1585). Conservative members of Parliament and columnists drew particular attention to the social mobility hard work in oil and gas promised Indigenous people. Scheer, for instance, described projects like the Coastal GasLink Pipeline as “the only way to lift first nation Canadians [sic] out of poverty, give them hope and opportunity, and give the next generation of indigenous Canadians the same quality of life that everyone else in this country enjoys” (Canada, 2020b: 1127). Columnists (de Souza, 2020; Kay, 2020c; McKenna, 2020; Solomon, 2020) similarly argued that social mobility through hard work in natural resources has been a fundamental right of passage for many families in Canada and should continue to be into the future, especially for Indigenous peoples (see Chapter 3 for more on this).

It was through these contrasting representations of oil and gas workers and the urban elite that the identity template of the *industrious self* surfaced. This *industrious self* was the hard-working, socially mobile, fossil fuel worker whose labour did more than just build communities and ensure personal prosperity – it also built the nation. After all, community-building natural resource projects were, as people from across the political spectrum agreed, at the heart of Canadian identity. Pierre Poilievre drove this point home, and highlighted the important role of private enterprise to this overarching vision, when he said:

> I believe we will have a renaissance of the working class in the country when we remove the government obstacles that stand in their way, unleash the unmatched power of free enterprise, remove the obstacles so that projects can go ahead and our industries and our

> energy sector can come roaring back to life to give those young people the opportunity to put their God-given talents to work (Canada, 2020e: 1568).

In this way, Poilievre linked support for the businesses driving large oil and gas projects with the celebration of, and advocacy for, hard work and the people who do it. Here and elsewhere, the *industrious self* as an identity template for oil and gas workers dominated.

Skilled selves: workers respond

My interviews with self-selected "oil and gas workers" revealed that while interviewees' self-positioning did converge on a shared identity, this identity was not the one that dominated in the mainstream media and politicians' discourse. To be sure, for some interviewees the idea that working hard in oil and gas offered social mobility rang true. An operations foreman in his early 40s who had started his career in the field put it this way: "There really isn't any other opportunity with this type of pay-scale. I'm just trying to make a better life for my family." For those who shared this perspective, achieving social mobility depended on personal initiative and drive. An entrepreneur in his early 80s saw the sector in Alberta as one in which "you are who you want to make yourself." An oil and gas engineer from a proud "oil family" with over 30 years in the sector described "guys that started off […] operating for a couple years" going on to pursue more education and gain more experience and over time becoming "president of a $50 million dollar a year company or a $100 million dollar a year company." For him "[a] lot of that comes down to the individual drive and ambition."

Those who shared this perspective also tended to agree with the vision that circulated among politicians and in the mainstream media of Canada as a resource nation. The operations foreman put it this way:

> What makes a country rich? It's their natural resources, and how you exploit those natural resources, I call it exploit or utilize, I guess. And it happened with the pioneers. The pioneers came, what were they doing? They're making people, which is a resource. Farming - making food. And then, next thing you know, we can sell lumber, oil and gas.

This worker went on to describe how royalties from oil and gas, forestry, and hydro could be used to pay for social programs. In his view "if that money was put towards a good cause, it could help build this country to be better."

Others did not share the view that natural resources in general, but especially oil and gas, should be so central to the country. A journeyman electrician and apprentice welder in his early 40s acknowledged a common argument among his peers that oil and gas produced in Canada was more ethical than oil and gas produced elsewhere, but argued that even if this was the case the vision of Canada as necessarily bound up with oil and gas lacked imagination:

> [T]o the extent that maybe our culture is slightly more open and possibly less generally misogynistic and sexist and controlling and maybe even dictatorial there's definitely advantages to supporting people who are doing the same bad thing but are nicer while they're doing it, but it's still the same bad thing. So, I can't get behind the huge pride and burning our planet and destroying yourself […] This is just a lack of imagination from people with vested interests.

In a similar vein, an office worker in her mid-30s who recently left oil and gas reflected on the effort and money that goes into amplifying the image of Canada as a resource nation and argued that it was time for this image to change:

> I think that our identity as a nation needs to evolve and needs to become just more modernized and more inclusive and more diverse because we're not reflecting what the

> nation is at the moment. Obviously that plaid, hardworking, oil and gas identity doesn't reflect a lot of the communities outside of Alberta. But there's also a huge amount of money, time and energy coming out of this province, particularly, keeping that image on the national stage.

Those who were more critical of the vision of Canada as a resource nation also tended to be more skeptical of the *industrious self* as a promising identity template. They spoke instead of wages in oil and gas trending downward and being unevenly distributed, as well as of expectations of work hours being unreasonably high. The office worker who spoke of the need for a new vision for Canada reflected,

> This upwardly-mobile thing – there's a binary there […] The money tends to collect at the field level and at the executive level and not be in the middle as much. And it depends generationally as to where you are. I was in a generation where I was severely under comped.

This kind of experience was not reserved for people working in administrative roles. The electrician and welder who spoke of the dominant vision of Canada as lacking imagination also spoke of wanting to transition to work in renewables and described how hourly rates for electricians went "from one of the best wages in the province to […] laughably […] low relative to all the other trades." He went on to elaborate that "all I've seen in my entire life is our supposedly really great blue-collar wages get pushed further and further and further down" all while being told that "working 60 to 70 hours a week is normal."

The idea of oil and gas workers as 'dangerous' also evoked disparate reactions. Some interviewees talked about witnessing substance abuse, mental health challenges, and violence in work camps. Some also described camps as presenting risks related to sexual violence for

women in nearby communities. Others expressed frustration or bemusement that work camps were associated with substance abuse and violence – especially given efforts within the industry to improve camp life over the past decade or more. Even those with more negative views of work camps described issues related to violence and substance use as having improved as compared to earlier years. A machinist in his early 30s whose father had spent his career in camps, and whose anti-capitalist vision for Canada was one reason he was an active volunteer with a local climate advocacy group, spoke of the need to distinguish between the structural problems associated with work camps, on the one hand, and people who work in them, on the other. He put it like this, "The man camps […] are a threat to people, but not all man camp attendants are […] perpetrating violence against women […] I think there's a lot of nuance to that that […] everyone is glossing over." For this reason, he saw Conservative politicians' invocation of this view of workers as political opportunism – a way to "exploit the lack of nuance" in discussions about work camps to provoke people to think "why would you say that about these really nice guys?" In contrast, according to the oil and gas engineer from a proud "oil family," it was those raising concerns about camps who were the political opportunists. For him, the negative "perception of the work camp was manufactured for political purposes" – namely to stall projects and generally advance negative stereotypes of the industry.

While not all interviewees shared the Conservative criticism of the 'urban activist elite,' the narrative did appear to tap into a broadly shared sense that those not involved in oil and gas do not understand what is involved in producing the energy and materials required to support the standard of living most Canadians expect. The same engineer who considered those raising concerns about work camps as politically opportunistic put it this way: "We find it so easy as a society to demean these people that are working out in the field […] yet they are busting their

asses working hard so that we can have our First World lifestyle, and I take great pride in that." The journeyman electrician-turned-apprentice welder described his workdays as "pointless and regressive" because they were contributing to the expansion of fossil fuel infrastructure in the country and spoke of regularly looking for work outside oil and gas. Despite this, he too described "a certain looking down on city people." For him, this came from an understanding of "what it actually takes to survive on the planet," especially because "our society […] goes out of its way to pretend that it's otherwise" and he was among "the people that are on the edge that are making civilization comfortable." This theme was also a major discussion topic during focus group conversations.

This similarity between workers with divergent political leanings points to where interviewees' views of themselves converged, regardless of age, job, or political ideology. With the sole exception of the office worker in her mid-30s who recently left oil and gas, every interviewee spoke of the skill, craft, and care involved in their work. In doing so, interviewees presented a narrative of themselves as *skilled selves* regardless of whether they took a positive view of the *industrious self*. For some, their self-positioning as a *skilled self* emphasized their artistry and creativity. A machinist in his early 40s who had recently changed sectors explained that he had "an artistic side" and so enjoyed the challenge of doing a "high-precision job" that required "mental prowess" to be able to "hit tolerances of a thousandth of an inch or less." Another machinist in his early 30s similarly explained how he "really love[s] the skill of it." A retired pipefitter and project planner reflected on passing this sense of pride down through the apprenticeship process:

> I remember one of my journeymen telling me when I was an apprentice that you want to be able to walk away from that job and not feel ashamed that anybody else is going to

look at it because it doesn't look 100% true and level and plum. So, I took that to heart. I made sure that anybody I trained did as well.

Others' narratives of skill centered on taking pride in being part of new, innovative, or challenging operations. An Engineer in his early 40s talked about getting "to witness some pretty cool shit" when working in the field. He described in detail what it was like to watch pieces of pipe get placed in the ground and the amount of precision that goes into the process – measurements "down to the millimeter" with people "acting like music directors." A retired engineer and project manager reflected on being involved in the construction of the "first cogeneration plant in North America" and how he enjoyed it because he "like[s] doing stuff that's new […] because it's more of a challenge." This enjoyment and pride in doing something new and challenging was not reserved for engineers. A labourer in her early 50s whose job on a pipeline project was her first in the sector shared a photograph of herself driving a roller for the first time and explained: "It was a big deal for me […] to get some time on that thing […] finally […] I'm doing more than administrative shit and wrangling these trucks and dealing with these drivers and I'm doing more than raking gravel."

For others, the narrative about skill came out in expressions of concern and care for colleagues, communities, and the environment. Working in management of change and regulatory compliance, one worker in his 30s spoke of his expertise "keeping my fellow co-workers safe. Keeping the community safe." The retired pipefitter/planner expressed similar pride in the fact that his involvement in project planning had resulted in safety improvements at his company and spoke of feeling frustrated when this concern is not matched by government regulation or company policy related to environmental protection and safety. As he put it: "We know what we're working with. We know the hazards. But there's a lot of limitations sometimes

on how much the workers can really do as far as controlling emissions [because of] regulations that we're forced to work with but aren't necessarily safe or constructive." A labourer and organic farmer in his early 40s with under one year in the sector spoke of being "impressed by […] the lengths that they've gone to protect the environment" on the pipeline he was helping to build. He described the care he was able to bring to this environmental protection as a point of solace as he wrestled with his decision to take a job building a pipeline he opposed. In these ways, and despite their frustrations, these workers shared a strong sense of personal pride and purpose in bringing their know-how to bear on protecting people and the environment.

Discussion

The *industrious self* appears in previous studies of oil and gas workers. Spady, for instance, speaks of her interviewees representing themselves as "responsible, pragmatic, and hard working" (2019: 76) and highlighting how oil and gas and the work they do in it are "foundational not only to the Canadian economy but also the Canadian imaginary" (p. 67). Mazer describes her interviewees as generally holding the view that "hard work leads to upward mobility, that extraction offers a pathway to certainty and security, or that remote resource work bolsters your social value" (2022: 1938). In each study, workers spoke positively of choosing to either migrate (Spady, 2019: 68–70) or commute (Mazer, 2022) from other provinces to achieve the kinds of financial stability and lifestyles they were unable to access at home. In a similar vein, and despite their own analysis that South Asians faced barriers to advancement in oil and gas, Upadhyay notes that their interviewees generally spoke of their faith in a colour- and gender-blind meritocracy in the sector and of the social mobility and financial stability available

to those who work hard enough to earn it.[11] Spady, Mazer and Upadhyay all draw out the ways their interviewees' self-positioning is sometimes at odds with their perception of these interviewees as analysts. All three are especially interested in drawing out self-representations shaped by the machinations of state and business interests. In this sense, the fact that the *industrious self* surfaced as the dominant identity template within the media and among politicians over the period of my study is consistent with these others' findings even if the self-representation of the workers with whom I spoke was more varied.

The pervasiveness of the *industrious self* highlights the extent to which the dominant vision of Canada reflected in the parliamentary record and media coverage of the CGL blockades aligns with a longstanding dominant imaginary of Canada as dependent on major technological infrastructure that facilitates the extraction and export of natural resources. Within this vision, this infrastructure facilitates national unity while providing the economic prosperity needed for families to thrive and for government to provide services to its citizens. This vision has circulated in Canada since the country came into being in the 19th Century, when Canada's first Prime Minister John A. Macdonald spoke of the newly constructed Canadian Pacific Railway (CPR) as the "spine of the nation" (Macdonald quoted in LaDuke and Cowen, 2020: 249). For Macdonald and the other architects of the CPR, the technological feat of physically connecting Eastern Canada to what became British Columbia would forge a sense of national unity in a still very young nation while also rendering natural resources and the fruits of fertile agricultural soils in the West accessible and, therefore, profitable. The success of this project relied on both government policies and private sector investments aimed at, in part, supporting the work of the

[11] Importantly, Alook's Cree and Métis interviewees did not share this experience, speaking instead of encountering career-limiting stereotypes that they were only suited for unskilled labour jobs (Alook et al., 2021: 339–342). I consider this point in detail in Chapter 3.

"willful pioneers" who worked in extracting resources and who built the railway, farms, and businesses along it (Aronczyk, 2017: 58; see also Cowen, 2019; LaDuke and Cowen, 2020). This vision of Canada is "now part of the standard history, replicated in museums, textbooks, archives (Library and Archives Canada), and in the study guide for Canadian citizenship applications" (Aronczyk, 2017: 69). It remains prominent today, especially among the political champions of oil and gas (Aronczyk, 2017; Barney, 2017; Jekanowski, 2018; Spady, 2019; Takach et al., 2014). Among these champions, the story of the CPR and the willful pioneers who helped get it built "is repeatedly invoked" (Cowen, 2019: 14; see also Aronczyk, 2017: 69–70) as an exemplar of the kind of nation-building project that the oil patch can deliver to the country today. By extension, those workers who build and maintain these projects occupy a particularly important place in the contemporary iteration of this longstanding vision of the country. Whether pioneers or fossil fuel workers, the prosperity of the upwardly mobile *industrious self* is yoked to the successful completion of nation-building technological projects.

The same interviewees whose self-positioning aligned with the *industrious self* tended to share a vision of Canada that was compatible with this national story – even invoking the image of pioneers unprompted. Interviewees who expressed skepticism about the promise of social mobility attached to the sector, on the other hand, also tended to distance themselves from this same story. Of course, this skepticism did not stop them from being enrolled into the story through their labour. This is indicative of how individuals become enrolled into subject-positions because of material conditions regardless of whether they fully accept the stories attached to them. In so doing, though, they exercise their agency to push back in a variety of ways. It was, after all, those who were skeptical of this national story and of the social mobility it promised who had recently left the sector, spoke of looking for opportunities to leave, and/or were

involved in activism that would shorten the life of the industry and, therefore, impact their career trajectories.

The fact that the dominant identity template of the *skilled self* advanced by interviewees was not reflected in dominant representations of them in the mainstream media and among politicians is also illustrative of this agency. Political and media discourse did not determine oil and gas workers' self-positioning, nor did the longstanding vision of Canada this discourse surfaced. Instead, interviewees shared something – something perhaps even resembling a habitus (Bourdieu, 1977, 2004) – that resulted in a collective sense that they possessed a particular kind of expertise in relation to questions about Canada's energy future. According to them, this expertise came from the very practical know-how that flowed from the daily labour they put into making oil and gas technologies work as well as from their ground-level experience of the scale and scope of existing energy infrastructures in the country. While they expressed this expertise as a point of pride, it came with frustration that it was too often dismissed or ignored. The absence of representations of the *skilled self* among even those columnists and politicians who claimed to be their champions is in its own way a testament to this dismissal and ignorance.

The dominance of the *skilled self* among interviewees points to the ways that these workers are not passive, reactionary forces in face of external pressure but are instead agents continually affirming, adapting, ignoring, or subverting the discourses that circulate about them even when material circumstances funnel them in specific directions. Interviewees saw themselves as *skilled selves* despite divergent political leanings, ages, and work experiences. This illustrates the template's versatility –it co-exists with the *industrious self* and the vision of Canada to which the *industrious self* is yoked, with disparate visions of how gender impacts those whose lives are influenced by oil and gas projects, and with visions for Canada that are

wholly incompatible with those that dominate political and media discourse. Dominant representations of oil and gas workers as *industrious selves,* on the other hand, were linked to a specific vision of Canada that stretches all the way back to its inception as a nation. The self-positioning of the fossil fuel workers with whom I spoke suggests that acceptance of this yoking of their identities with a vision of Canadian as a resource nation is far from universally accepted among them even if they find themselves implicated in it through their labour.

Conclusion

The way oil and gas workers represent themselves is considerably more versatile and adaptable to different visions of Canada and its energy futures than the dominant representations of these workers among federal politicians and the mainstream media. The *skilled self* - someone who brings care, creativity, and skill to what they do, who is eager for new challenges, and who brings these qualities forward to protect people and the environment – can thrive in a country whose identity remains deeply tied to natural resource extraction; however, this self can also thrive in a country that has chosen a different path. Given the broad range of political leanings among the oil and gas workers who represented themselves as *skilled selves* this makes sense. Some remained committed to Canada as a proud resource nation, some preferred a future in which Canada distanced itself from its longstanding relationship with resource extraction, and some preferred a future without capitalism and the competitive striving for social climbing that comes with it. The inverse, though, is not true. The *industrious self* is deeply reliant on resource extraction. The hard-working, socially mobile, nation-building *industrious self* is yoked to the successful completion of nation-building technological projects like railways, pipelines, and major bitumen mines. The gap between the dominant identity template for oil and gas workers among politicians and the mainstream media, on the one hand, and among workers, on the other,

is indicative of the ways individuals become enrolled into visions of the future that obscure or circumscribe their agency to continually affirm, adapt, ignore, or subvert the identity templates offered to them even when material circumstances and dominant discourses funnel them in specific directions. In the space between dominant discourses about oil and gas workers and those circulating among workers themselves are different futures ready to be brought to life. As political struggles over these futures rage on, oil and gas workers are eager to align themselves with futures in which they can take on new challenges while bringing care, creativity, and expertise to what they do.

Chapter 3 - A case study in rescuing settler normalcy: Canadian resource techno-nationalism, Indigenous oil and gas workers, and the Coastal GasLink pipeline

Alana Lajoie-O'Malley

Abstract

Canadian resource techno-nationalism - the linking of sovereignty and national identity to major technological infrastructure projects in support of resource extraction – has featured prominently in representations of Canada since the 19th Century. This discourse analysis of media coverage and federal political debates concerning mobilizations against the Coastal GasLink pipeline (CGL) in 2020 examines how those engaged in naturalizing Canadian resource techno-nationalism today use stories of Indigenous oil and gas workers to ensure a future compatible with the Canadian state. I illustrate how politicians and the media confronted criticism of Canada's colonial past and present during mobilizations against CGL by reframing oil and gas projects in terms of the benefits they offer Indigenous workers. I also highlight how doing so eclipsed the ways those rejecting CGL were resisting more than just a pipeline - they were also refusing to relate to land in a way that continued their subjugation to the Canadian settler state. I argue that it was the threat of this broader refusal that made invoking Indigenous oil and gas workers so important because stories about these workers helped rescue settler normalcy when it was under threat.

Introduction

For over a decade, struggles over Canadian fossil fuel and pipeline projects have simultaneously invoked concerns over water, environmental degradation, climate change, and Indigenous rights. Among Indigenous peoples, the intersection of environmental concerns with questions about how to interface with settler-colonial governments and the regulatory processes they oversee makes these struggles especially layered and complex. Some Indigenous rights holders choose to work with these governments and processes to pursue benefit agreements, jobs, and ownership stakes in resource projects (e.g. Bubar and Fontaine, 2021; Helin, 2008; Sankey, 2023; Smith, 2022). Others choose to assert their sovereignty and jurisdiction while refusing to consent to fossil fuel and pipeline projects on their land even – or especially – when the Canadian state claims the right to proceed without this consent (e.g. Goldtooth and Saldamando, 2021; Manuel and Derrickson, 2017; Tiny House Warriors, 2020; Unist'ot'en, 2017). Amidst this complexity, settler-dominated environmental groups consistently frame their participation in struggles against Canadian fossil fuel and pipeline projects in terms of standing in solidarity with the Indigenous people/s who oppose them (Helferty, 2020).

In the winter of 2020, one such struggle took over news cycles and political debate for several weeks. Canadians ushered in the year 2020 with images of Royal Canadian Mounted Police (RCMP) officers raiding the Unist'ot'en camp, "an indigenous re-occupation of Wet'suwet'en land in northern 'BC, Canada'" (Unist'ot'en, 2017), and arresting seven people in an effort to clear a path for the construction of the Coastal GasLink pipeline (CGL) (APTN News, 2020). If built, CGL would transport fracked natural gas from northeastern British Columbia to be liquified at the LNG Canada facility in Kitimat and shipped to Asia-Pacific markets. The LNG Canada project has been celebrated as "the biggest private investment in

Canada's history" (Crawford, 2018), and CGL is an important piece of infrastructure in support of this investment. Indigenous land defenders and water protectors, along with environmental groups and grassroots solidarity groups, mobilized in support of those arrested to oppose both the pipeline and the tactics used to make way for it. By early February, the movement's galvanizing hashtag, #ShutDownCanada, had taken on tangible meaning. Rail lines, highways, ports, bridges, and border crossings were blocked, bringing large portions of Canada's economy to a standstill.

While concerns about pipeline safety and the place of liquified natural gas in a 'climate safe' future certainly came up as these events unfolded, at immediate issue was a disagreement over who had the authority to grant Coastal GasLink permission to build the portion of the pipeline that traversed Wet'suwet'en territory. The project had received regulatory approval from the Province of British Columbia. CGL had also signed benefit agreements with 20 of the 22 elected First Nations band councils along the proposed pipeline route. The hereditary chiefs refusing the project, though, pointed out that these agreements had been signed with band councils created under the Indian Act - a piece of colonially imposed legislation that stipulated that band chiefs and councils were only responsible for lands within reserves, not for the traditional territories that extend well beyond their boundaries. These traditional territories remain the jurisdiction of the hereditary chiefs within the governance system that pre-dates colonization and settlement. This is a fact that has even been recognized by the Supreme Court of Canada and that points towards longstanding questions about settler-colonial Canada's jurisdictional claims over these lands (Gunn and McIvor, 2020; McIvor, 2020).

In this article, I examine how the mainstream media and federal politicians marshaled stories of Indigenous oil and gas workers in response to the broad reckoning with Canada's colonial roots that emerged during these mobilizations, promoting and naturalizing a vision of

the future compatible with the Canadian settler-colonial state in the process. I begin by situating the ongoing conflict over CGL within a dominant imaginary of Canada I call Canadian resource techno-nationalism – an imaginary that understands major technological infrastructure projects in support of resource extraction as critical to Canada's sovereignty and national identity. I draw attention to the ways this imaginary has historically gone together with Indigenous land theft and removal and, after briefly describing the approach to discourse analysis I used to examine mainstream media coverage and parliamentary debates during and immediately following the winter 2020 mobilizations against CGL, I show how this history of theft and removal surfaced over this period to place Canadian resource techno-nationalism on shaky ground. I go on to demonstrate how mainstream media and federal political debate rescued it by circulating stories of rational, industrious, pragmatic Indigenous workers who had, or were promised, jobs on oil and gas projects. I illustrate how these stories eclipsed the ways that those refusing CGL were refusing more than just a pipeline - they were also refusing to relate to land as something neutral and empty that should be standardized, simplified, and managed for the sole purposes of extracting value from it. In so doing, they were rejecting a future compatible with the existing settler state and refusing to be subjugated to it. I argue that it was the threat of these broader refusals that made Indigenous oil and gas workers such key actors in the CGL conflict. In face of large-scale mobilizations in support of a fundamental break from the status quo, stories of hard-working Indigenous oil and gas workers re-introduced continuity with it and helped foreclose the possibility of futures grounded in ontological and ethical differences that defy the territorial sovereignty of the settler state. In this sense, stories of Indigenous oil and gas workers offered a pathway to "rescuing settler normalcy" (Tuck and Yang, 2012: 35).

Canadian resource techno-nationalism

The conflict over the Coastal Gas Link Pipeline (CGL) offers another reminder that technoscience is entangled with power and often a source of controversy and struggle. Several overlapping and intersecting clusters of thought have already shown this to be the case: postcolonial and decolonial discussions of the co-constitution of dominant science, technology, and empire (Brockway, 1979; Harding, 2011; Liboiron, 2021; Prakash, 1999), feminist contributions to our understanding of objectivity (Barad, 2007; Haraway, 1988; Harding, 1995), and insights about the co-production of science and political order (Jasanoff, 2004b; Jasanoff and Kim, 2015).[12] These clusters of thought all share some genealogy with the discursive view of power/knowledge (Foucault, 1975), which holds that power is not strictly lodged inside institutions like 'the state' or 'the economy' but is instead dispersed and stabilized through the mutual reinforcement of discourse, on the one hand, and the bureaucratic, political, and technological mechanisms that simultaneously support and are supported by discourse, on the other.

From inside this view of power, stories about technoscience matter. This is especially so when they are mobilized by decision-makers to orient infrastructure investments and public policy decisions. In these cases, stories do more than just reflect the imagined social promise of technoscientific infrastructures and innovation, they also serve to bring this promise to life through the policies and investments they inform. Sheila Jasanoff and Sang-Hyun Kim call these

[12] Here, I draw on Max Liboiron's (2021: 20) use of the term *dominant science* to refer to modes of knowledge making often referred to as *Western.* Liboiron favours the term *dominant* because it draws attention to the role of power in sustaining one mode of knowing as more accepted than others. It also serves to acknowledge the fact that many knowledges produced in "the West" are not admitted into dominant forms of knowledge making. To these reasons, I add that the term *dominant science* avoids calling *Western* forms of knowledge-making that were historically, and remain, the results of global interactions and of the work of people from around the world, not just "the West".

kinds of stories *sociotechnical imaginaries,* "[c]ollectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff and Kim, 2015: 4). Pipelines like CGL and other fossil fuel technologies are examples of the kinds of technologies attached to sociotechnical imaginaries.

Others have already documented a long line of continuity from the 19th Century through to today in one dominant sociotechnical imaginary among the Canadian political elite. This is an imaginary that links sovereignty and national identity to major 'nation-building' technological infrastructure projects in support of resource extraction. It can be traced to the construction of the Canadian Pacific Railway (CPR), completed in 1885, which Canada's first Prime Minister John A. Macdonald described as the "spine of the nation" (Macdonald quoted in LaDuke and Cowen, 2020: 249). For Macdonald and the other architects of the CPR, the technological feat of physically connecting Eastern Canada to what became British Columbia would help forge a sense of national identity in a still very young nation while consolidating Canadian sovereignty and rendering natural resources and the fruits of fertile agricultural soils in the West accessible and, therefore, profitable (Aronczyk, 2017; Charland, 1986).

At the time, this was not necessarily an imaginary widely held by those living in what would become Canada; it was one held by those who drove the process of rearranging lands and lives in relation to the railway. These processes included the Government of Canada passing the Dominion Lands Act of 1870 to empower the CPR to survey new townsites along rail lines. Once surveyed, the company marketed this land to settlers via its *Department of Colonization*. As a result, towns and farms were erected along the route of the railway. The towns supported the construction, operation, and maintenance of the rail, while farms created goods to be

transported. Settlers recruited to build their lives along the tracks played key roles in protecting the railroad from both Indigenous resistance to settler incursions westward and from invasion from the United States. In this way, settlers supported the Government of Canada's effort to use the railway to forge national unity not only by forming communities in relation to the CPR but also by consolidating Canada's claims to sovereignty and jurisdiction over the lands the railway traversed. In this process, stories of "willful pioneers whose vision and tenacity carved the contours of territorial sovereignty" (Aronczyk, 2017: 58) were brought to life through public policy as well as through government and private investment. In this sense, Government policy and the infrastructures this policy made possible simultaneously relied on and created the settler communities that would connect East to West.

With the help of the North-West Mounted Police, the precursor to today's Royal Canadian Mounted Police (RCMP), Indigenous peoples were violently removed in this process (Butts, 2023; Carleton, 2023; Daschuk, 2013). Champions of the CPR did not imagine Indigenous people/s as active participants in the nation-building made possible through the railway's construction. Instead, they imagined them as belonging to the "excluded populations and practices whose presence might detract" (Aronczyk, 2017: 63) from the railway's social promise. These were the kinds of views that informed the civilizing mission in Canada, embodied in industrial and day schools that taught Indigenous people trades and farming and, later, the development of the infamous Indian Residential School system specifically designed to remove Indigenous children from the cultural influence of their families and communities and transform them in the image of white men (Milloy, 2011). From inside this logic, it was only once this transformation was accomplished that Indigenous people/s would be 'developmentally' ready to be contributing citizens because they would effectively be white.

This was reflective of a broader colonial perspective circulating in the 19th and 20th Centuries that Indigenous peoples were uninterested in, or unfit for, the kind of hard work required to profitably extract resources from land (Carter, 1990: 4; Lutz, 2009: 235). Those holding this perspective painted membership in Canadian society as a right to be earned once Indigenous people had demonstrated they had learned the ways of white society by engaging in hard work on land and giving up their distinct Aboriginal rights (Brownlie, 2006; Carter, 1990: 194–197). Taking the desirability of becoming white Canadian citizens for granted, government observers described those Indigenous people/s who rejected invitations to "earn" Canadian citizenship and give up their Aboriginal rights as "'lacking in intelligence'" (Carter, 1990: 197) and as being among the "'idle-good-for-nothing,' who rejected anything welcomed by the 'better class' of more industrious Indians".

Despite its association with Indigenous land theft and removal, this characterization of Canada as a country deeply tied to major technological infrastructure projects remains prominent today. This is especially the case among champions of oil and gas (Aronczyk, 2017; Barney, 2017; Spady, 2019), who pair it with the equally dominant staples thesis (Innis, 1999[1930]) to argue that contemporary investments in oil, gas, and pipeline projects are consistent with Canada's longtime reliance on the production and export of resource commodities ranging from fur to fish to wood and wheat. This argument was the backdrop for former Conservative Prime Ministers Stephen Harper's efforts to brand Canada as an "energy super power" (Taber, 2006) during his tenure. In the years following this branding effort, oil and gas champions have "repeatedly invoked" (Cowen, 2019: 14) the story of the CPR as an exemplar of a nation-building technological project. Columnist Frank McKenna even celebrated the imaginary's settler-colonial elements by invoking the "indominable will of … early railroad pioneers against

the rugged Canadian terrain" (quoted in Aronczyk, 2017: 77) while writing about the importance of pursuing oil and gas projects (for more examples of similar statements see LaDuke and Cowen, 2020: 249).

Beyond the rhetorical connections drawn between the CPR and contemporary oil and gas projects, researchers highlight continuities between the physical, institutional, and financial mechanisms used to arrange lands and people in relation to the railway and contemporary mechanisms used to deliver fossil fuel projects. These include approaches to financing projects that leverage corporate shareholding and pension fund capital to achieve a "set of strategic alignments" between the interests of workers and investors (Stanley, 2019: 1142), as well as strategies that nationalize and spread the risks associated with controversial projects (Pasternak and Schabus, 2019; Stanley, 2019: 1143–1147).

This kind of continuity between past and present is what leads Melissa Aronczyk (2017) to describe a longstanding Canadian "technological nationalism" (p. 66) that ties national identity to "technological prowess" (p. 79), celebrates "a nation whose core identity comes from the land" (p. 70), and views the effort of deploying technology to derive wealth from it as "a collective national obligation". Because this nationalism includes implicit visions of desirable forms of social life and order delivered through oil, gas, and pipeline technologies, I understand this technological nationalism as reflective of a specific sociotechnical imaginary. In contrast to earlier discussions of technological nationalism that include technologies not linked to resource extraction (Charland, 1986), I call this imaginary *Canadian resource techno-nationalism* to point specifically towards its links to technologies aimed at facilitating resource extraction. The ongoing conflict over CGL is unfolding in the context of this Canadian resource techno-nationalism.

Methods: following discourse to follow power

As mobilizations in support of Wet'suwet'en hereditary chief's refusing CGL unfolded in the winter of 2020, journalists (Williams, 2020), columnists (Murphy, 2020), and politicians (Poilievre in Canada, 2020d: 1568) expressed anxiety about the fate of oil and gas in the face of some of the largest-scale economic disruption ever seen in the country and worried about what these disruptions signaled about the future of other fossil fuel projects in the country. Noting this concern, and with the parallels between the CPR and fossil fuel projects in mind, I hypothesized concern for workers during the conflict over CGL to be reflective of a parallel between the role of settler pioneers in the 19th century sociotechnical imaginary for Canada and the role of workers in dominant imaginaries about the country circulating today. I set out to test this hypothesis and consider what the concern indicates about dominant visions of desirable sociotechnical futures for the country.

For this reason, I turned my attention to visions of desirable futures attainable through and supportive of deployments of technoscience as articulated within the discursive field (Keller et al., 2018: 37) surrounding oil and gas workers during and immediately following the mobilizations that took place against CGL in the winter of 2020. Situated within other studies documenting the critical role of mainstream media (Anderson, 2006; Callison and Young, 2019) and of political (Hajer, 1995) discourse in shaping society and stabilizing dominant national imaginaries, I examined these sources following the sociology of knowledge approach to discourse analysis (SKAD) (Keller, 2011; Keller et al., 2018). With its Foucauldian orientation, SKAD is consistent with understandings of technoscience as inseparable from politics and power.

I identified and analyzed 1730 news articles, columns, and letters to the editor as well as 599 speeches from Parliamentary debates and Parliamentary committee meetings from between December 1, 2019 and August 31, 2020.[13] I began by extracting passages that reflected: (1) visions of the future (2) representations of workers (3) mechanisms through which workers might become enrolled into visions of the future through the cultivation of affect and/or through the exercise of power. From there, I inductively sorted passages into themes and identified dominant narrative structures and argumentation clusters in relation to and across themes. This allowed me to reconstruct the sociotechnical imaginaries that circulated over this period, the story lines about workers within these imaginaries, and the representations of workers reflected in them. I address other elements of my findings in other chapters. Here, I focus on the marshalling of stories of Indigenous oil and gas workers as protagonists in a revised version of Canadian resource techno-nationalism that attempts to address the imaginary's colonial roots.

"Because of lawful crimes": imagining Canada in 2020

To understand the stakes involved in the revision of Canadian resource techno-nationalism during the winter of 2020, it is necessary to first illustrate how media and political discourse confronted critical questions about the imaginary over this period. To be sure, some elements of Canadian resource techno-nationalism remained firmly in place. Throughout the winter of 2020, an understanding of Canada as inseparable from natural resource extraction remained. In a parliamentary debate about the blockades, Green Party Member of Parliament

[13] For mainstream media, I searched the *Canadian Major Dailies* database which includes full text access to more than 35 of Canada's top national and regional newspapers using the terms ("Coastal Gaslink" OR "Wet'suwet'en" OR "hereditary chiefs" OR "TC Energy" OR "Unist'ot'en" OR "Wetsuweten" OR "Unistoten" OR "Gidmet'en" OR "Gidmeten") AND ("jobs" OR "job" OR "workers" OR "worker" OR "work" OR "employment" OR "unemployment"). For my keyword/tag search of parliamentary records at ourcommons.ca, this search string was too complex, so I reviewed all portions of the Hansard, journals, and committee meetings tagged "Coastal Gaslink".

Jenica Atwin said, “We have always been and will continue to be a resource-driven economy” (Canada, 2020f: 507). Right-wing *National Post* columnist Raymond de Souza echoed similar sentiments when he argued, “resource development […] has been the Canadian economy from the beginning” (de Souza, 2020). Liberal MP Jim Carr spoke about how his government’s “aim is to get our natural resources to foreign markets. That's the national objective” (Giovannetti, 2020).

Other elements of Canada’s longstanding sociotechnical imaginary were not necessarily as resilient. The celebratory tone in nationalist accounts of the construction of the CPR gave way to more ambivalence. Some commenters did repeat stories about the railway’s national importance. For instance, while criticizing the Ontario Provincial Police for not dismantling a Kanien’kehá꞉ka blockade near Belleville, Ontario columnist Chris Selley (2020) described the network as an “unbroken ribbon of steel from Halifax on the Atlantic to Prince Rupert and Vancouver on the Pacific.” A letter to the editor emphasized how “Sir John A. Macdonald promised British Columbia a national railroad, ‘from sea to sea,’ as a condition of their joining Confederation” (*Toronto Star*, 2020a) and lamented the disruptions to this railroad underway. More common, though, was a certain reckoning with this foundational piece of Canadian technological infrastructure. Liberal Member of Parliament Lenore Zann reflected that “For most Canadians, the railway has been a great boon” (Canada, 2020c: 1318). Zann went on, though, to describe how the government policies and actions that delivered the railroad had violently removed Indigenous peoples from their land. She argued that this was why it was not fair to “expect Indigenous people to see the story that way”. Amidst calls from Conservative politicians to enforce the ‘rule of law’ by clearing blockades, she drew on this more ambivalent understanding of the railway to call for restraint from politicians and police and to urge her

colleagues to “keep in mind that our country only exists because of the lawful crimes our government committed to get the railway built”.

Columns (Carleton, 2020; Paradkar, 2020) and news stories (Hayes, 2020; Quan, 2020; Saba, 2020) also pointed out the parallels between the RCMP actions on Wet’suwet’en territory and the role of the North-West Mounted Police in removing Indigenous peoples from their lands in the 19th Century to make way for the railway. Shree Paradkar, for instance, wrote about

> the Mounted police force, created almost 150 years ago to clear the plains and the Prairies of Indigenous peoples to make way for western settlement, now showing up with officers in tactical gear, helicopters, dog teams and drones, citing settler law on Wet'suwet'en lands and plucking off its people to plough the way for a private company.

Reflecting a similar sensitivity to these parallels, the Canadian Broadcasting Corporation published a news story (Saba, 2020) detailing a shift in the way media reports were referring to those resisting CGL. While many continued to refer to them in the terms used by Canadian law enforcement – namely as “protesters” or “demonstrators” - others had begun to refer to them as “land defenders”. Those refusing CGL preferred the latter because it better reflected how the RCMP was “illegally invading unceded Indigenous territory.” For them, the term protester “misrepresents the reality and the history of the situation, and the media's use of that language reinforces it”. In a column for the Globe and Mail, Toronto Metropolitan University professor Shiri Pasternak (2020b) offered several arguments in support of this view.

The kinds of critiques of Canadian law enforcement illustrated by Paradkar’s column buttressed several rearticulations of Zann’s caution towards appeals to ‘the rule of law’. Writing for the *Globe and Mail,* columnist Corey Shefman (2020) enumerated multiple instances in which the Canadian legal system has been used to discriminate against Indigenous people/s

through to the present day. Shefman argued that "until Canadians and our governments start seeing the rule of law through the lens of colonialism and recognize the lopsided, inequitable and hypocritical ways in which it has been deployed, there will be no justice for Indigenous peoples and no peace for Canadian's colonial institutions." Members of the New Democratic Party (Canada, 2020c: 1341, 2020h: 1152) and columnists (Shefman, 2020; Talaga, 2020) drew particular attention to the sitting Liberals' appeal of a Human Rights Tribunal ruling that First Nations children had been discriminated against because of federal underfunding of the on-reserve child welfare system as a contemporary example of this kind of hypocrisy.

"The only way to lift them out of poverty": the not-so-new pursuit of social unity as sameness

It was in the context of this kind of reckoning with Canada's violent colonial roots that some columnists criticized those drawing attention to the harms caused by settler colonialism, worrying that too many Canadians were becoming "obsessed with the narrative" that Canadian society is "an ugly scar on traditional Indigenous lands" (Gormley, 2020; see also Kay, 2020b), and too focused on a story that "declares that Canada is garbage, hoping that an attitude of self-abasement would somehow lead us to 'reconciliation'". One letter writer puzzled at the use of the term "colonial" as a "derogatory descriptor" (*Toronto Star*, 2020b). He preferred to describe settlers, pioneers, and explorers as the people who "laid the foundation of this great nation" and argued that it was because of "colonialism and the flood of immigrants it encouraged that Canada is truly multicultural today".

It was also in the context of this reckoning that politicians and columnists directed their attention to the promise oil and gas projects offered Indigenous workers. Despite important differences between the governing Liberals and the opposition Conservatives, the two dominant

political parties converged on directing the 'nation-building' ethos within Canadian resource techno-nationalism towards "economic reconciliation" by describing the promise of jobs for Indigenous oil and gas workers in contemporary fossil fuel projects as reflective of the critical role these projects could play in addressing the kinds of historic injustice being brought into the national conversation.

National Post columnist Jonathan Kay (2020c) wrote about how hard work in natural resources had been fundamental to social mobility in Canada for generations and should now offer the same social mobility to Indigenous oil and gas workers that settler families have enjoyed for generations. He wrote, "For generations, white Canadians built up their communities and supported their families with the fruits of industrial development," so that today the "children and grandchildren" of these workers could have "desk jobs." According to him, "Indigenous peoples are seeking the same path to socioeconomic advancement" through participation in fossil fuel projects. Other columnists (de Souza, 2020; McKenna, 2020; Solomon, 2020) shared similar views. Media coverage reinforced this perspective. News stories with headlines like *Pipeline at centre of B.C. conflict is creating jobs for First Nations: chief* (*The Vancouver Sun (Online)*, 2020) amplified the voices of Indigenous fossil fuel workers and business owners grateful for the opportunities afforded to them through CGL. Among those frequently interviewed in these stories was Troy Young, Wet'suwet'en from Hagwilet Village and General Manager of Kyah Resources. One frequently reprinted article explained that Young "has about 50 First Nations workers getting on-the-job experience, which he says will be crucial to them securing jobs when the pipeline is done in three to five years" (Carrigg, 2020). Journalists also highlighted comments from Crystal Smith, Chief Councillor of the Haisla Nation and chair of the First Nations LNG Alliance, who explained, "Our governance system has been managing

poverty" (*Edmonton Journal*, 2020; *The Vancouver Sun (Online)*, 2020) and argued that the "opportunities that are available for today's generation and future generations of First Nations people that participate in these projects are lifechanging. They're nation-changing". Columnists described Smith, Young, and other Indigenous leaders who supported the project as "the voices that matter" (Mason, 2020b) and as the voices of "pragmatism" (*Calgary Herald (Online)*, 2020c) while arguing that the pipeline should be built (see also Ivison, 2020a, 2020b; Urback, 2020).

Liberal (Canada, 2020c: 1293) and Conservative (Canada, 2020b: 1900, 2125, 2238) politicians also drew attention to Chief Smith and other Wet'suwet'en leaders and community members in support of the project. Conservative Party leader Andrew Scheer described oil and gas projects as "the only way to lift first nation Canadians [sic] out of poverty, give them hope and opportunity, and give the next generation of indigenous Canadians the same quality of life that everyone else in this country enjoys" (Canada, 2020b: 1127). Todd Doherty, Conservative MP for Cariboo-Prince George, expressed concern for the Indigenous workers whose lives were being disrupted by blockades doing "whatever they can to make a better living for their families and put a roof over their heads" (Canada, 2020c: 1289). Countering earlier descriptions of Indigenous people/s as resistant to hard work, Doherty quoted "Marion Tiljoe Shepherd, the descendant of a hereditary chief" as saying her "people want to work". Liberal Minister of Crown Indigenous Relations Carolyn Bennett's response to these invocations of Indigenous workers was to draw attention to how some "[w]omen leaders [among the Wet'suwet'en] have expressed an opinion that the [CGL] project can help eliminate poverty or provide meaningful work for their young men and reduce domestic violence and incarceration" (Canada, 2020c: 1293).

With the promise of oil and gas jobs as pathways for Indigenous people's full participation in Canadian economic and social life established in the media and in political discourse, conservative-leaning columnists and Conservative politicians argued that non-Indigenous pipeline opponents were robbing Indigenous workers of this promise by aligning with a minority Indigenous opinion and imposing colonial visions of Indigenous peoples as essentially different from white society. Writing for the Calgary Herald, Mike Smyth (2020) put it this way:

> The protesters have aligned themselves with five Wet'suwet'en hereditary chiefs opposed to the pipeline, and not the 13,000 Indigenous British Columbians represented by all the band councils that support it. It's an especially inconvenient fact for pipeline protesters who say they're blocking roads, bridges, highways, train tracks and public buildings in solidarity with Indigenous people. They sure aren't representing the Indigenous people working on the pipeline. Of the 1,000 people currently employed by the project, about one-third are estimated to be First Nations. If the blockaders get their way, they would throw hundreds of Indigenous people out of work. That's some 'solidarity'.

Jonathan Kay, for his part, focused his attention on the "self-mortifying 'progressive' urbanites" (Kay, 2020a) claiming to stand in solidarity with hereditary chiefs for treating Indigenous people as "shamanistic ewoks who must be shielded from modern society" and made to "revert to some vaguely imagined Avatar-inspired fantasy whereby they will subsist on the fruits of the earth." Kay hoped that these "ethnocentrists" would "recognize that Indigenous people are neither 'inferior' creatures nor exalted flesh-and-blood extrapolations of our own Rousseauian daydreams" but instead "human beings who deserve […] the same opportunities our own ancestors enjoyed."

Reflecting similar sentiments, Conservative MPs introduced a motion calling on members of the House of Commons to "stand in solidarity" with those Indigenous people "who support the Coastal GasLink project, and condemn the radical activists who are […] holding the Canadian economy hostage, and threatening jobs and opportunities in Indigenous communities" (Canada, 2020c: 1289). They did this while characterizing Indigenous traditions as sharing with white society a commitment to extracting value from land. As Pierre Poilievre put it, it was important "to give indigenous people the opportunity to trade again in commerce and to exploit natural resources again in our country" (Canada, 2020e: 1568) because exploiting natural resources "had been the tradition of first nations people for thousands of years before Europeans arrived on this continent". For Poilievre, the crime of the past was precisely that this tradition had been disrupted by the arrival of Europeans, and white people opposing pipelines were doing the same thing today.

Alongside this appeal to Indigenous tradition, Conservatives rejected the authority of hereditary chiefs and portrayed the hereditary governance system as a relic of the past. Conservative Garnet Genuis, for instance, said, "I believe in the rights of indigenous peoples and all peoples to democratically elect their own leaders. It must be the decisions of elected indigenous leaders that carry the day" (Canada, 2020c: 1339). He went on to describe the appropriate role of hereditary chiefs in relation to the role of the British monarchy in Canada: "There could certainly be a role for hereditary chiefs in a democratic system, just as our system has a role for hereditary leadership in the form of the Canadian Crown" (see Canada, 2020b: 1339 for another example). One columnist described hereditary chiefs as "overlords" (Solomon, 2020). Many others pointed out the fact that they were "unelected" (*Calgary Herald (Online)*,

2020b; *Chronicle - Herald*, 2020; Mason, 2020a; Morgan, 2020) as an argument for rejecting the legitimacy of their refusal of the pipeline.

Liberals did not share this view. Instead, they emphasized the democratic nature of Wet'suwet'en hereditary governance systems and pointed out the government's role in disrupting them by imposing the elected band council system. Minister of Indigenous Services Marc Miller pointed out how "the Indian Act-imposed band council system is viewed in many indigenous communities as colonialist and paternalistic. It has removed, and the Government of Canada has consciously contributed to removing, structures that existed well before the existence of Canada that are highly democratic in nature and have a very rich history" (Canada, 2020h: 1140). Given this history and what Liberal Minister of Crown-Indigenous Relations Carolyn Bennett described as the "damage done by colonization and residential schools that has led to sometimes different interpretations of traditional legal practices and customs" (Canada, 2020c: 1293), Liberals argued that it was important to "work with both the elected chiefs in council and the hereditary chiefs". They also envisioned a future in which traditional legal systems would have a role in Canadian jurisprudence. Bennet, for instance, hoped that "one day, Canada will be able to integrate indigenous law into Canada's legislative process, just as it did with common law and civil law". In this sense, Liberals criticized Conservatives' imagined pathway to Indigenous people's full participation in the Canadian state; however, they agreed that participation within existing – if adapted – state structures was the goal.[14]

In a similar vein, Liberal politicians criticized Conservative condemnations of "radical activists" while holding steady the idea that oil and gas projects promise Indigenous oil and gas

[14] We can note a parallel approach from the New Democratic Party government in British Columbia, which adopted its Declaration on the Rights of Indigenous Peoples Act a few weeks before the conflict over CGL erupted (Ministry of Indigenous Relations and Reconciliation, 2019).

workers full participation in Canadian economic and social life. Bennett emphasized her "extreme disappointment" at the "rhetoric and divisive tactics" reflected in the Conservatives' motion and spoke of meeting "the young indigenous people" (Canada, 2020c: 1293) involved in solidarity actions. According to her, they "were not radical activists. They were sensitive, young Indigenous people expressing the importance of the land, water and air". Despite this difference with Conservatives, she went on to link Indigenous traditions of care for land, water and air with proceeding with LNG, explaining that according to some members of affected communities "in an Indigenous world view", the natural gas that was destined to travel through the CGL pipeline "will reduce China's reliance on coal," which "is good for Mother Earth".

With their Conservative counterparts, Liberal politicians also made clear their assumption that the goal was to find a way for resource projects to proceed. For them, jobs for Indigenous workers were part of this, as was the work of addressing outstanding questions of rights, title, and governance. According to Bennett, when these questions were sorted out "good projects receive a green light, bad projects a red light, and mediocre projects are sent back to the drawing board to improve their environmental stewardship or cultural protection or employment" (Canada, 2020b: 2102). Importantly, in cases when Indigenous peoples refuse projects altogether, Bennett pointed out that their decisions could still be overridden at the federal level. The government should and would pursue consent for resource development projects; however, in her words, "[c]onsent is not a veto" (Canada, 2020b: 2102). Consent, in other words, was not the same as being able to refuse a project. If anything, addressing unsettled matters of rights and title would protect against more project delays by providing legal clarity and certainty on this point. Minister of Indigenous Services Marc Miller added to this analysis that "when self-determination is achieved, indigenous peoples are driving resource development in many communities"

(Canada, 2020h: 1204). Miller even invoked the longstanding narrative that technological infrastructure projects help build the nation, describing Indigenous-led resource projects as "key to the development of our country". In this sense, he agreed with Conservative Parliamentarians who repeatedly characterized resource development projects as "nation-building" (Canada, 2020e: 1585, 2020g: 1760) and portrayed resource development partnerships with Indigenous peoples as creating opportunities "for people in remote northern communities to fully participate in the economic well-being in Canada as a whole" (Canada, 2020b: 2140).

Rescuing settler normalcy

During mobilizations against CGL in the winter of 2020, the governing Liberals, the opposition Conservatives, columnists, and journalists all brought Indigenous oil and gas workers as protagonists into Canada's national story to argue in support of a sociotechnical imaginary that envisioned major fossil fuel infrastructure projects as consolidating national unity and sovereignty. In the 19th Century version of this imaginary, national unity and identity was forged by mobilizing government and private resources in support of willful pioneers carving out the contours of territorial sovereignty, dispossessing Indigenous peoples in the process and admitting them into settler society only once they had adopted the ways of white settlers. In 2020, Indigenous people/s were no longer imagined as being among the excluded populations who might hinder the materialization of the imaginary. Instead, the story line that surfaced in 2020 portrayed Indigenous oil and gas workers as the primary beneficiaries of Canadian resource techno-nationalism. It was by ensuring that the economic and social benefits of resource projects flowed to them that the political gridlocks that had become all too familiar in the country could make way for a sense of shared national unity and purpose in a socially, economically, and technologically unified nation.

With its focus on the potential such oil and gas projects offered to Indigenous workers, this version of Canadian resource techno-nationalism offered a pathway to compatibility with the existing Canadian state in a moment when the prospect of a fundamental break with its core commitments made its way into the national conversation. The scope and scale of mobilization against CGL, evidenced by the blockades and other solidarity actions that took place over this period, are indicative of the lack of consensus that existed around this dominant imaginary not only among the Wet'suwet'en but also among other Indigenous and non-Indigenous people. Journalists, politicians, and columnists reflected this lack of consensus in their discussions of the imaginary's links to colonial violence and land dispossession.

As blockades persisted, stories about Indigenous oil and gas workers helped decouple Canadian resource techno-nationalism from this colonial violence. One way they did this was by shifting attention away from fundamental ontological and ethical questions about land at the heart of the resistance to CGL and to Canadian fossil fuel projects more broadly. Inherent in Canadian resource techno-nationalism is idea that land exists to extract value from it through labour. This idea reflects a series of ethical and ontological commitments with cultural roots that can be traced to the Scientific Revolution and the Enlightenment. These commitment are informed as much by the biblical injunction in Genesis to "subdue the earth" as by the Baconian view, reflected in Enlightenment thought more broadly, that nature should be molded with science and technology in order to "establish and extend the power and dominion of the human race" (Bacon quoted in Merchant 1990). These commitments help account for the deep ties between European imperialism and colonialism, on the one had, and the development of dominant science, on the other (Brockway, 1979; Edney, 2009; Mohawk, 2000; Prakash, 1999; Schiebinger, 2011; Turnbull, 2003). They are also at the heart of modes of governance aimed at

facilitating the standardization and management of land for the purposes of resource extraction (Scott, 1999). They rest on an ontological orientation towards land as something neutral and empty that can be standardized, simplified, and managed through the rational application of technoscience as well as on the ethical commitment that these processes of standardization, simplification, and management are right and good (Liboiron, 2021: 39–79; see also Deloria, 2003).

A corollary of the idea that applying technoscience to manage land is rational and good is that the work that goes into this transformation is also rational and good. John Locke famously centered his theory of private property around this belief when he argued that that land should belong to those who transform it through labour (Liboiron, 2021: 70; Palmer, 2020: 796–797; Tuck and Yang, 2012: 30). His theory of liberalism was oriented around the idea that property should belong to "the industrious and rational" (Locke, 1986 [1689]: 22 sec. 22) who transformed land with the work of their hands. On both sides of the border between what are now Canada and the United States, this Lockean expression of the relationship between labour, property, and rationality, coupled with the argument that Indigenous people/s are neither industrious nor rational, has resourced settler claims to land in face of Indigenous resistance (Palmer, 2020; Tully, 1995a). As Conservatives alluded to during debates about CGL, assumptions of Indigenous difference have indeed been offered as reasons for land theft.

In the winter of 2020, though, the story was not one of difference but of a sameness that promised social cohesion without disrupting the Canadian status quo. This sameness offered "the promise of integration" (Tuck and Yang, 2012: 7) and of "a share of settler-appropriated wealth" for those Indigenous peoples who aligned with the authority of the Canadian state by negotiating and collaborating with it on resource projects. That securing the sovereignty of the Canadian

state was a core – if only ever implied – element of this process is confirmed by what is already known about how resource partnerships between First Nations, federal and provincial governments today consistently help secure the ultimate decision-making authority of the Canadian state (Pasternak, 2020a; see also Manuel and Derrickson, 2017; Pasternak 2014). In this sense, we can observe remarkable continuity between this promise and similar promises made in the 18th and 19th Centuries that traded land rights for citizenship.

Importantly, neither stories from the 19th and 20th Centuries, nor the one circulating in 2020, left room for the prospect of difference without subjugation– a prospect that would compromise Canadian territorial sovereignty by opening space for ontological and ethical orientations towards land that are irreconcilable with the settler state. Difference without dispossession was precisely what those refusing CGL in the winter of 2020 were pursuing. In asserting the right to refuse pipelines on their territories, those among the Wet'suwet'en refusing CGL were also refusing to relate to land as something neutral and empty that can be standardized, simplified, and managed for the purposes of extracting value from it. Freda Huson, Unisto'ot'en Hereditary Spokesperson, has spoken of Wet'suwet'en hereditary chiefs' refusal of pipelines on their territory by explaining: "Our people's belief is that we are part of the land. The land is not separate from us. The land sustains us. And if we don't take care of her, she won't be able to sustain us, and we as a generation of people will die" (Unist'ot'en Camp, 2017). Here, we see an expression of grounded normativity (Coulthard, 2014; Simpson, 2011) or Indigenous place-thought (Watts, 2013) guiding what Glen Coulthard (2014) describes as a form "of resistance against other rationalizations of the world" (p. 61) including, or perhaps especially, those involving the dominant ontology of land operating in the Canadian state today. This resistance is premised on the idea that far from being neutral and standardizable, "land is alive

and thinking and that humans and non-humans derive agency through the extensions of these thoughts" (Watts, 2013: 21). It pursues the resurgence of political, legal and knowledge traditions consistent with this orientation towards land without concern for their compatibility with existing settler society. In this sense, those among the Wet'suwet'en refusing CGL pursue an "ethic of incommensurability" (Tuck and Yang, 2012: 35; see also LB Simpson, 2016; Simpson, 2020) that is "accountable to Indigenous sovereignty and futurity" rather than to "rescuing settler normalcy".

Of course, Indigenous traditions within Canada are diverse. Just as importantly, these are traditions that continue to change and adapt to new circumstances, including circumstances arising from settler colonialism. Communities continue to decide whether and how to seek out, subvert, or refuse full participation in Canadian governance and legal processes, and they continue to adapt their traditions accordingly. The case of CGL underscores that these decisions have the potential to generate significant intra-community differences and that at times, these differences make their way into mainstream Canadian discourse. We can and should refuse to make the intra-community discussions and processes arising out of these differences the stuff of settler scholarship and conversation (Rotz et al., 2020; Simpson, 2007) while still recognizing how their ontological and ethical dimensions map onto settler discourse and settler desire for land. Doing so helps clarify the factors helping to forge alliances between Indigenous and non-Indigenous people/s involved in conflicts over resource extraction in Canada.

On the one hand, we can reasonably conclude that those standing alongside Wet'suwet'en hereditary chiefs shared with Wet'suwet'en opponents of CGL a rejection of an orientation towards land that considers dominating, managing and extracting value from it to be a desirable foundation for social life. Bringing together 50 interviews with Indigenous and non-Indigenous

people involved in a range of anti-pipeline campaigns in Canada, Jen Gobby and Kristian Gareau (2018; see also Gobby, 2020) describe a unifying perspective among them that "capitalism and colonialism have separated us from one another and from the land and that to create a more just and viable world, we need to reconnect with each other and reconnect with the land" (p. 458). These findings indicate that while alliances between Indigenous land-defenders and non-Indigenous people involved in pipeline resistance remain fraught (Helferty, 2020), one thing that holds them together is a commitment to pursuing rationalizations of the world that differ from the rationalization that dominates in Canada and many other places today.

On the other hand, those most consistently amplifying the voices of Indigenous oil and gas champions and workers throughout the winter of 2020 were those who also expressed the strongest support for the idea that social life should indeed revolve around managing land and extracting resource wealth from it. In this view, those Indigenous people participating in resource projects were pragmatic, the voices to which one ought to listen. Those expressing more relational orientations towards land, in contrast, were naïve radicals deluded by "Avatar-inspired" fantasies. The media, politicians and columnists in 2020 may not have described those Indigenous people pushing back against Canadian resource techno-nationalism as lacking intelligence or lacking in industriousness as they did in the 19th Century; however, they offered more scaffolding to the idea that any departure from the dominant sociotechnical imaginary on offer was fundamentally irrational. In this sense, we should notice that media representations of Indigenous people/s over the period were consistent with a long history of newspapers helping to uphold the rationalities of the settler-colonial state (Anderson and Robertson, 2011). On this point, we can also observe parallels with other conflicts between proponents of major

technoscientific infrastructure projects and those Indigenous people refusing them, such at the Thirty Meter Telescope (c.f. Casumbal-Salazar, 2017).

Conclusion

Just as stories of willful pioneers existed alongside government programs and private investments aimed at attracting settlers to build lives in relation to the CPR, stories of industrious oil and gas workers exist alongside government and industry mechanisms aimed at integrating Indigenous people/s into Canada's fossil fuel economy. These include provisions exempting oil and gas projects with Indigenous participation from new restrictions on federal oil and gas subsidies (Beer, 2023), the development of special mechanisms for encouraging the sale of the federally-owned Trans Mountain pipeline to Indigenous groups (Mundie, 2023), and employment training programs targeting Indigenous people for jobs in oil and gas (Coastal GasLink, 2023; TC Energy, 2023) that are often requirements flowing out of impact assessment processes. Scaffolded by the imaginary of Canadian resource techno-nationalism, these mechanisms stand alongside those that help align the interests of workers and investors and that nationalize project risks to get projects built, naturalizing the land ontologies and ethics they reflect in the process.

In the winter of 2020, thousands of people mobilized for a future centered around a different set of ontological and ethical commitments. Amidst claims from both settler pipeline opponents and supporters that their position on CGL was about standing in solidarity with Indigenous people/s, stories about Indigenous oil and gas workers forced the question: Which Indigenous people/s exactly? They forced this question on the backdrop of over two centuries of government-sponsored policies, investments, infrastructure projects, laws, policing, and industry partnerships aimed at rearranging lands and people to make the world much more hospitable to

one answer to this question over any other. Standing in solidarity with the Wet'suwet'en chiefs refusing CGL also meant standing for ways of arranging lands and lives that many had yet to fully imagine, for which many had few if any reference points or bearings in their day-to-day lives. Standing in solidarity with Indigenous oil and gas workers, on the other hand, meant standing for a future that was easily discernible from the present – for an imaginary already carved onto the land, an imaginary made ordinary, natural, even intuitive in its ubiquity. This is power, circulating through the mutual reinforcement of discourse and of the bureaucratic, political, and technological mechanisms that support and are supported by discourse. This does more than just enroll Indigenous workers into Canadian resource techno-nationalism; it also helps eclipse the fact that the rearranging of land and life underway is the product of imagination and, as such, can always be imagined – and materialized - otherwise.

Chapter 4 – 'Consent' as epistemic recognition: Indigenous knowledges, Canadian impact assessment, and the colonial liberal democratic order

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Abstract

This article unpacks the logic of the equivalence invoked by the Government of Canada between Indigenous *consent* and the inclusion of Indigenous peoples and knowledges in impact assessment. We situate the logic within the politics of recognition in Canada—a politics that aims to shore up national unity in the face of regular challenges to it. We use the Canadian results from a recent scoping review on conceptions of environmental justice in impact assessment to highlight the challenges of invoking recognition, and we provide a theoretical analysis of these challenges. To do this, we highlight the ways in which 'we-making' is 'knowledge-making' and 'knowledge-making' is 'we-making'. In this sense, recognizing Indigenous knowledges is part of Canada's answer to the challenge of constructing and stabilizing a political 'we': a community of political subjects with shared connection to a nation state via the institutional, social, and cultural apparatuses that generate the kind of publicly visible legal and technical knowledge upon which the state's authority depends. We show how this project relies on actively obscuring the relationship between 'we-making' and 'knowledge-making' by treating 'knowledge-making' as neutral and un-situated, putting into practice a universalist logic. This logic shores up power because obscuring the situatedness of dominant knowledges also obscures the situatedness of the dominant political orders with which they are intertwined. We ultimately argue that Canada's approach to recognizing Indigenous knowledges helps consolidate power by sidestepping ongoing jurisdictional struggles with Indigenous peoples.

Introduction

In the winter of 2020, rail lines, highways, and ports across Canada were shut down and large demonstrations were held across the country by people acting in solidarity with Wet'suwet'en hereditary chiefs and supporters. These chiefs and supporters had been arrested by officers of the Royal Canadian Mounted Police (RCMP) when they refused to vacate the camp and healing centre they had built on Wet'suwet'en territory directly on the construction route of the Coastal Gaslink Pipeline (APTN News, 2020; Bracken, 2021; UnistotenCamp, 2020). At immediate issue were disagreements over who had jurisdiction to grant Coastal GasLink permission to undertake their pipeline project. Wet'suwet'en hereditary chiefs had been clear in their refusal of the project; however, it had received regulatory approval from the Province of British Columbia, and Coastal GasLink (CGL) had signed agreements with 20 of the 22 elected First Nations band councils along the pipeline route.

During an emergency Parliamentary debate about these events, Canadian politicians argued about how the principles of the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) might apply to this and similar ongoing conflicts in Canada. Of particular concern was how to understand the notion of free, prior, and informed consent (FPIC) within UNDRIP. For some, the conflict over Coastal Gaslink was a prime example of the risks of endorsing the consent standard. This was a re-hashing of a long-standing debate (for a short timeline on this debate see Borrows et al., 2020: 4). Conservative Party politicians had resisted signing on to the UNDRIP over concerns that FPIC implied that Indigenous peoples[15] held veto powers over projects on their territories. Indeed, when a Conservative government was at the

[15] Both the UN (UN Permanent Forum on Indigenous Issues, n.d.) and the Government of Canada (2009) propose specific understandings of the term 'Indigenous peoples'. Both can be read in the context of Todd's (2021) discussion of Storfjell's (2021) understanding of Indigeneity not as a fixed or essential identity, but as an analytic that "describes a certain set of relationships to colonialism, anticolonialism and specific lands and places".

helm in 2007, Canada was one of four countries to vote against the adoption of UNDRIP (Imai, 2017: 377). More recently, under a Liberal Party government, Canada adopted the UNDRIP Implementation Act (Government of Canada, 2021). Despite the adoption of this act, the interpretation of FPIC remains a matter of debate and political struggle. There is a general consensus that FPIC represents a departure from the *duty to consult and accommodate* framework developed by the Supreme Court of Canada over the last several decades (Beaton, 2018; Hamilton, 2018; Imai, 2017; Leydet, 2019; Mitchell et al., 2019); however, opinions about the nature and extent of this departure vary considerably.

It was in the context of this ongoing struggle that Minister of Crown–Indigenous Relations, Carolyn Bennett, took the debate over resistance to the Coastal GasLink pipeline as another opportunity to counter the worries of Conservative Members of Parliament that supporting FPIC means supporting the right of Indigenous peoples to refuse projects on their territories. Bennett repeated her government's position that "[c]onsent is not a veto" (Canada, 2020d: 2100). Instead, according to her, consent "means that Indigenous peoples and Indigenous knowledge will be mandatory at the very beginning of a proposal for any major project". It is about "striving to achieve consensus as parties work together in good faith on decisions that impact Indigenous rights and interests". Her statement drew an equivalence between the inclusion of Indigenous knowledges (IKs), on the one hand, and consent for resource development projects, on the other. This comment was not just made to get Bennett out of a political mess. Rather, it was a nod to her government's painstaking and controversial effort to overhaul the impact assessment processes that govern decision-making about federally regulated resource extraction projects (see Impact Assessment Act, 2019). A key aim of this overhaul has been to achieve greater consensus from members of the public and Indigenous peoples.

Reforming the ways in which IKs are included in assessments is an important part of this legislative change.

Here we unpack the logic operating in Bennett's statement and draw out its political stakes. How is it that the inclusion of IKs comes to stand in for Indigenous consent? To consider this question, we begin by detailing the Canadian government's efforts related to IKs in impact assessment (IA). We characterize these efforts as attempts at epistemic recognition and situate them within a broader Canadian political culture shaped by the politics of recognition more broadly. We then draw on the results of a recent scoping review of literature on conceptions of environmental justice in impact assessment (Blue et al, 2021) to highlight the ways in which this effort at epistemic recognition comes up short in practice. From there, we provide a theoretical analysis of the roots of these shortcomings, starting from the premise that the construction of knowledge and the construction of legal and governance institutions go hand in hand. We illustrate the ways in which 'we-making' is 'knowledge-making' and 'knowledge-making' is 'we-making,' not only within liberal democracies like Canada's, but also in several Indigenous knowledge and political traditions. Finally, we contrast this account of 'we-making' and 'knowledge-making' with the approach to 'we-making' that is embedded in Canada's efforts at epistemic recognition. Epistemic recognition is part of Canada's answer to the challenge of constructing and stabilizing a political 'we': a community of political subjects with shared connection to a nation state via the institutional, social, and cultural apparatuses that generate the kind of publicly visible legal and technical knowledge upon which the state's authority depends. We demonstrate how epistemic recognition relies on actively obscuring the inseparability of 'knowledge-making' and 'we-making' by treating 'knowledge-making' as neutral and un-situated. We ultimately argue that this obscuring further consolidates the power of the Canadian

state and of the dominant[16] knowledge systems with which it is co-produced. We show how the logic implicit in the idea that consent is about the inclusion of Indigenous peoples and knowledges is a universalist logic that acts against fundamental insights from STS scholarship.

Impact assessment and Canadian politics of recognition

Recent efforts to formalize the inclusion of Indigenous knowledges in impact assessment are efforts to extend the Canadian politics of recognition to epistemic matters. The relevance of IKs in technical decision-making has been referenced in Canadian legislation since 1999 (McGregor, 2021); however, in the day-to-day operations of the Federal government these knowledges "were 'dealt with' on an ad-hoc basis at the discretion of managers, scientists, and others from the relevant agencies" (p. 6). Formal processes for recognizing IKs were established more recently. In 2017, the *Aboriginal Traditional Knowledge: Process and Protocols Guidelines* document was created under the *Species at Risk Act.* In 2019, these priorities were also formally established with respect to impact assessment when the Liberal government successfully overhauled the existing legislative framework for reviewing resource extraction projects in the country.

In so doing, the Liberals delivered on a major election promise. Environmental assessment (EA) was a key election issue during the 2015 federal election campaign in Canada. Re-orienting the legislation from environmental assessment to the broader and more holistic impact assessment was one of many strategies aimed at restoring faith in the assessment process

[16] We draw on Liboiron's (2021: 20) use of the term *dominant science* to refer to modes of knowledge making often referred to as *Western.* Liboiron favours the term *dominant* because it draws attention to the role of power in sustaining one mode of knowing as more accepted than others. It also serves to acknowledge the fact that many knowledges produced in 'the West' are not admitted into dominant forms of knowledge making. To these reasons, we would add that the term *dominant science* avoids calling *Western* forms of knowledge-making that were historically, and remain, the results of global interactions and of the work of people from around the world, not just 'the West'.

across the board (see Doelle, 2018; Doelle and Sinclair, 2019). The Liberals had support for an environmentally ambitious impact assessment tool from those angered by how the prior Conservative government had scaled back environmental overview of development as part of a general "gutting" (NDP, 2012; see also May, 2012; The Narwhal, 2012) of environmental legislation in the country. At the same time, many Canadians were equally upset that development projects were stalling, mired in legal challenges and resistance from Indigenous peoples and environmental groups. The Minister of Environment and Climate Change even subjected the proposed bill to a series of cross-Canada public "roundtable" conversations and accepted submissions from academics and non-governmental groups that were intended to weigh into the legislation as it was being written. Despite the ambition to account for a broad review of social, rather than just technical, considerations, the legislation was highly controversial. It faced multiple hurdles while moving through the legislative process. The controversy did not end once the new Act was adopted. While many certainly do see it as a significant improvement, it continues to attract criticism. Pierre Poilievre, the popular new leader of the Conservative Party, has promised to, if elected, "scrap 'anti-energy' laws" such as the new Impact Assessment Act (Quon, 2022). At the same time, others argue that the Act retains too many pathways for environmentally harmful projects to get approved (Johnson et al., 2021) and fails to recognize Indigenous jurisdiction (King and Pasternak, 2018).

Criticisms of the Impact Assessment Act related to Indigenous jurisdiction speak to the importance of this legislation for ongoing struggles over Indigenous rights. Through adjudicating disputes over projects subject to federal assessments, the Supreme Court of Canada has developed its jurisprudence related to the *duty to consult and accommodate* framework (Imai, 2017). Under this framework, the final decision on whether the government's duty to respect

Indigenous rights has been met is assumed to rest with the Supreme Court of Canada. The framework takes for granted the Crown's exclusive jurisdiction and assumes that Indigenous peoples are in a subject-to-sovereign relationship with the Crown (Nichols, 2018). This understanding goes against a vision of shared jurisdiction and legal pluralism in Canada (Borrows, 2010) which several Indigenous law scholars see as being aligned with the UNDRIP (Borrows et al., 2019, 2020; Craft et al., 2018). This is a vision that rejects the "doctrinal unilateralism" (Hamilton, 2018: 107) that characterizes the *duty to consult and accommodate* framework and affirms a strong interpretation of Indigenous jurisdiction—one that includes respecting Indigenous peoples' right to withhold consent. It is precisely the rejection of unilateralism involved in many interpretations of the UNDRIP that Conservative analysis views as dangerous (Christie, 2018).[17] While the Liberals have affirmed their desire for a less unilateral approach, they have been criticized by Indigenous rights advocates for advancing a narrow vision of Indigenous jurisdiction that does not actually do away with unilateralism (Diabo, 2019; King and Pasternak, 2018).

Indeed, within the new impact assessment legislation, the official legal and policy justification given for including IKs does not mention jurisdiction. Rather, including IKs is justified on the basis that it will enhance prediction and deliver credible data in service of evidence-based decision-making. Impact assessments are expected to "look at both positive and negative environmental, economic, social, and health impacts of potential projects" (Impact Assessment Agency, 2020) in order to "contribute to informed decision making on major projects in support of sustainable development in Canada". IKs are expected to contribute to this process.

[17] For examples of conservative critiques, see: Coates & Favel (2016); Favel & Coates (2016); Isaac & Hoekstra (2018); Newman & Coates (2017), Swain & Baillie (2018).

The Impact Assessment Act specifies that IK "enhances the understanding of the potential environmental, social, health and economic impacts of" and is meant to support "determining the effects that are likely to be caused by the carrying out" (Government of Canada, 2019: 3.1) of a proposed project.[18] This understanding of the role of IKs in IA is echoed in the *Draft Indigenous Knowledge Policy Framework for Project Reviews and Regulatory Decisions* (Impact Assessment Agency of Canada, 2021: 6).

The implementation of this new formal role for IKs is supported by an Indigenous Advisory Committee made up of First Nations, Inuit and Métis people with a mandate to "provide the [Impact Assessment] Agency [of Canada] non-political advice reflecting the interests and concerns of the Indigenous peoples of Canada for the development of key policy and guidance" and to "advise on approaches for collaboration and engagement with Indigenous peoples on policy and guidance products" (Impact Assessment Agency of Canada, 2020b). Early on in the Committee's mandate, IKs were identified as one of the "[p]riority areas for policy development and guidance" (Impact Assessment Agency of Canada, 2019: 4). This mandate related to IKs is "distinct from that of the Technical Advisory Committee on Science and Knowledge" (Impact Assessment Agency of Canada, 2020b). Instead, there is a Sub-Committee of the Indigenous Advisory Committee established to "inform the development of the Interdepartmental Indigenous Knowledge Policy Framework" (Impact Assessment Agency of Canada, 2020a) that applies to the *Impact Assessment Act*, *Canadian Energy Regulator Act*, *Canadian Navigable Waters Act,* and to fish and fish habitat provisions in the *Fisheries Act*. The

[18] More specifically, these effects include changes to fish and fish habitat, to aquatic species, to migratory birds or "any other component of the environment" (sec. 2), as well as impacts on the "physical and cultural heritage" of Indigenous peoples, to "the current use of lands and resources for traditional purposes" and to "any structure, site or thing that is of historical, archaeological, paleontological or architectural significance" (*Impact Assessment Act*, 2019).

principles for developing this framework were made available in August 2020, and a draft framework was released in July, 2021 (Impact Assessment Agency of Canada, 2021).

This framework includes the principle that "both Indigenous knowledge and western scientific knowledge systems should be equally valued and used in tandem" (p. 4) during IA processes. While the meaning of "equally valued" is never spelled out, this is clearly a project aimed at remedying the systemic exclusion of IKs within IA. This move could be fruitfully analyzed through the lens of epistemic justice (Fricker, 2007) or by picking up certain threads of feminist and postcolonial STS (Harding, 1998, 2008, 2011; Seth, 2009). In this article, though, we are especially interested in how this effort to "equally value" Indigenous and dominant knowledges can be understood as part of a politics of recognition, and in how this politics relates to the exercise of political power. The stated aim of "equally valuing" Indigenous and dominant knowledges represents an attempt to address status-based inequities that incur due the knowledges of Indigenous peoples being accorded less esteem and prestige than dominant knowledges. This aligns with Nancy Fraser's (2008) formulation of recognition. For Fraser, overcoming these kinds of status-based inequities addresses the cultural dimensions of decision-making, helping to achieve participatory parity in political processes by "dismantling institutional obstacles that prevent some people from participating on par with others" (p.405, see Blue et al., 2021 for a longer discussion). Owing to the specifically epistemological nature of the aim of 'equally valuing' Indigenous and dominant knowledges in IA, we refer to this specific project as one of epistemic recognition.

This effort at epistemic recognition is reflective of a broader orientation towards recognition in Canada. If elsewhere political struggles for justice have often been struggles for inclusion into a common 'we', in Canada these struggles have just as often been struggles against

incorporation or assimilation into such a 'we'. These include struggles for sovereignty and against violent assimilation by Indigenous peoples (Manuel & Derrickson, 2021; Obomsawin, 1993; Simpson, 2017), struggles among francophone Quebeckers to assert their own distinct nationhood (Dagenais, 2020; Hébert and Lapierre, 2015), struggles among French-speaking and English-speaking minority groups in different provinces to resist assimilation into the social world of the dominant colonizing group (Blay, 1987; O'Donnell, 2021), and struggles among different cultural and ethnic groups in the country to retain rights to maintain their own cultural practices and legal traditions (Janzen, 1990; Korteweg and Selby, 2012; Moon, 2009). The paradigm of recognition has offered tools for the federal government to overcome these challenges since at least the late 1980s, after the Canadian constitution and its *Charter of Rights and Freedoms* were enacted, and as controversies about this process and its implications played out over the years that followed with respect to group and minority rights[19] as well as the law.[20]

[19] Alongside the work of Fraser (1989, 2008, 2009), whose framing of recognition in terms of participatory parity in democratic processes is particularly relevant to this paper, several Canadian philosophers (Day, 2000; Kymlicka, 1991, 2001, 2007; Taylor, 1994a, 1994b; Tully, 1995b) developed theories of recognition that include formulations of group and minority rights. While this is not the place to discuss the nuances of these different theorists' formulations in detail, elements of their thinking can be read into parts of Canada's Charter of Rights and Freedoms. The Charter recognizes and protects the cultures of those not belonging dominant groups in at least three ways. First, it enshrines multiculturalism, stipulating that Canada's Constitution is meant to "be interpreted in a manner consistent with the preservation and enhancement of the multicultural heritage of Canadians" (Section 27). Second, centering Canada's two colonizing nations (England and France), it protects minority language rights by confirming that children in English or French minority groups in Canada have the right to be educated in their maternal language (Charter Section 23(1.a)). Third, it affirms Indigenous rights by acknowledging Aboriginal and Treaty rights (section 35) and stating that the Charter shall not "abrogate or derogate from any aboriginal, treaty or other rights or freedoms that pertain to the aboriginal peoples of Canada" recognized by the Royal Proclamation of 1763 or established in land claims agreements (section 25).

[20]The years of prolific debates about group rights in Canada also witnessed struggles for a rebalancing of power in Canadian law. As a results of these struggles, "legal duality [common and civil law] is now considered to be an essential feature of the implementation of federal law, requiring a constant dialogue between traditions" (Allard, 2001: 25; see also Gaudreault, 2006). This relates to the practice of civil law in Quebec and common law in other provinces and territories. Achieving this understanding of legal duality involved lengthy political struggle. Building off this perspective, Indigenous legal scholar John Borrows (2010) argued over a decade ago that understanding Canada as multi-juridical would be more accurate since "it draws on many sources of law to sustain order" (p. 23). This is because, he argues, Indigenous legal traditions, common law, and civil law began co-existing in what is now called Canada long before Canada itself was created. Here and elsewhere (2017), Borrows has emphasized the impact of the multiple Indigenous legal orders that have been operating since long before colonization on Canada's present-day legal systems. He draws a parallel between the way civil law "increasingly emerged from the shadow of

Epistemic recognition in Canadian impact assessment

The results of a scoping review we recently conducted further confirm the influence of the paradigm of recognition in Canada. In this review, we typologized definitions and operationalizations of 'environmental justice' in international English-language peer-reviewed journal articles about impact assessment published between 2000 and 2020, drawing on a tri-valent understanding of environmental justice as consisting of distribution, representation, and recognition (see Fraser's framework refined by Schlosberg, 2009, 2013). The 249 articles we reviewed often addressed representational justice (85%), relatively frequently (41%) addressed distributional justice, and less frequently (30%) addressed recognitional justice. Viewed geographically, though, this broad picture became much more nuanced. Figure 1 illustrates how articles about the US strongly emphasized distributional justice, while articles dealing with cases in Canada, Mexico, Central & South America[21] were most concerned with issues of recognition—so much so that they appear as significant outliers in comparison to the other geographic regions represented in the literature.

In this review, we found 41 peer-reviewed articles about Canada that address recognition, overwhelmingly in terms of positively recognizing Indigenous knowledges' contributions to formal impact assessment processes.[22] As with the stated aims of Canada's new IA legislation,

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common law" (2010: 113) in the last decades of the 20th Century and the way that "Indigenous legal traditions may follow the same course if appropriate measures are taken". Borrows and others have much to criticize in how the Canadian Government and the Supreme Court of Canada have adopted the concept of legal pluralism (the literature on this subject is vast. For a sampling, see: Borrows et al., 2019b; Canada, 2008; Hunt, 2014; Macklem & Sanderson, 2016); nevertheless, Supreme Court case law has indeed adopted it (Allard, 2001).

[21] An important limitation of this finding is that we reviewed only English-language literature. For this reason, while results related to Mexico, Central, and South America are important, further study of especially Spanish and Portuguese IA literature and of associated political cultures would be required to paint a more complete picture of trends in these parts of the world and consider them alongside the findings about Canada.

[22] It is important to emphasize that this set of articles represents only a sub-set of literature published about Canada that addresses questions related to IKs and governance; what is specific to this sub-set is that it surfaced during a scoping review that drew on specific search terms used in databases that would yield scholarly articles about formal impact assessment. Even from our limited knowledge of the broader scholarly work on IKs, particularly work

many of the most recent articles describe or propose approaches specifically aimed at dismantling any hierarchy between Indigenous and dominant knowledges. For instance, Matyka-Pringle et al. (2017) draw on the concept of two-eyed seeing described by Elder Dr. Albert Marshall (Bartlett et al., 2012) to propose "blending" knowledge about ecosystem health. Another team (Abu et al., 2019) similarly proposes a two-eyed seeing approach "to bridge Western science and Indigenous knowledge systems" (p. 757). Despite these aspirations, the body of literature paints a picture of attempts at epistemic recognition in IA consistently coming up short. "Blending" and "bridging" are meant to address status-based inequities such as those documented by Usher (2000) over 20 years ago. Usher argues that claims generated from IKs must be "comprehensible and testable as a knowledge claim in public reviews" (p. 183) in terms primarily determined by non-Indigenous people drawing on non-Indigenous understandings of what constitutes credible knowledge. Rather than demonstrating success at overcoming status-based inequities, however, more recent literature highlights the extent to which IKs remain unequally valued in Canadian IA. Arsenault at al. (2019) document an ongoing "tendency to use Western science to 'validate' traditional knowledge before it is accepted as a legitimate way of knowing" (p. 120) and describe how "the assessment process to date has focused on 'extracting data' from Indigenous peoples and inserting 'palatable' information into externally driven and motivated environmental regimes" (p.122). Others note how even these processes of extracting data from IKs are limited by prejudice against the reliability of the information they yield. This is manifest through substantial asymmetries between the funding allocated to studies based on dominant knowledge as opposed to IKs (Galbraith et al., 2007: 34; O'Faircheallaigh, 2007: 334)

authored by Indigenous scholars, the absences of particular authors and themes within these results was noteworthy and could form the foundation of a further study.

and through a lack of engagement with the empirical observations of Indigenous knowledge holders by non-Indigenous participants in IA processes (Haalboom, 2016: 1010). This is a trend also noted in a systematic review of IKs in federal environmental assessments in Canada. Eckert et al. (2020) find that 70% of the papers they reviewed document "perceived hierarchies of knowledge—namely, the problematic perception that scientific knowledge is superior to IK, as a barrier to engaging IK in federal EAs" (p. 74).

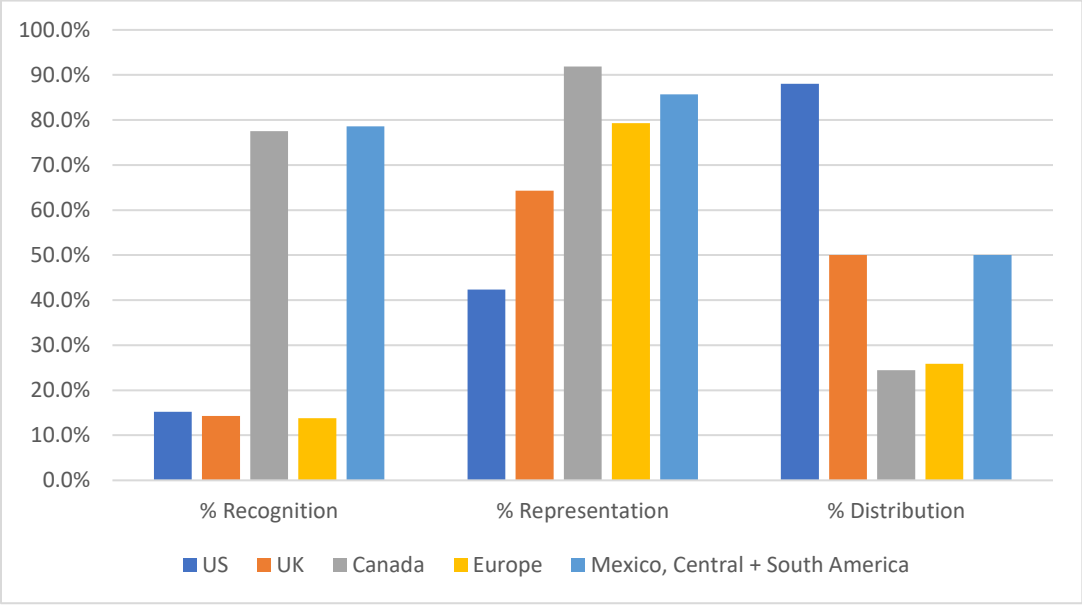

Figure 2: Comparison of prevalence of discussion of different dimensions of justice in case studies from four geographical regions (y axis [vertical]: % of studies mentioning each dimension of justice; X-axis [horizontal]: dimension of justice described. Colors indicate geographic area (US is dark blue, UK is orange, Canada is grey, Europe is yellow, Mexico, Central & South America is light blue).

"Blending" and "bridging" knowledges are also understood as increasing the accuracy of evidence. In this sense, the scholarly literature aligns with the reasoning found in the updated Canadian Impact Assessment legislation—it portrays recognizing and including IKs in impact assessment as increasing the accuracy of the evidence collected and considered. Abu et al. (2019), for instance, speak of the potential of IKs to "enhance environmental assessment and planning by providing a more accurate and coherent narrative of long-term social-ecological

change" (p.757). Roué and Nakashima (2002) emphasize IKs' "predictive capacity" (p. 337). Gondor (2016) posits that IKs are most useful when they provide "factual observations, and past and current uses of land" that "complement modern science" (p. 1153).

In these instances, IKs are indeed recognized as being as valuable as dominant knowledges; however, this treatment of IKs as data faces significant criticism. Arsenault et al. (2019) are critical of how applications of IKs "by dominant government agencies often reduce complex Indigenous knowledge to facts, observations, and singular practices" (p. 122). Here, the problem is not so much that the empirical evidence delivered via IKs is not treated as authoritative, but instead that the IA process forces IKs to be, or become, something different from what they are outside the context of IAs. Eckert et al. (2020) identify this type of challenge as being the most frequently cited in their literature review, with 80% of the papers they reviewed documenting how the dominant worldviews held by those designing and executing IAs are inconsistent with the worldviews, knowledges, and understandings of the environment held by Indigenous knowledge-holders and many Indigenous peoples more broadly. They identify "fundamental knowledge incompatibilities" (p. 74) that stem from the fact that "values that inform Indigenous and western knowledge systems are oftentimes at odds with each other" (p.75). They illustrate this dynamic with a representative example about perceptions of fish presented by the Tsilhqot'in Nation during the Prosperity Mine proposal and following federal environmental assessment:

> The distance between Indigenous epistemologies of fish and the quantification of trout matters here greatly. For the Tsilhqot'in, fish represent much more than 'a limbless coldblooded vertebrate animal with gills and fins living wholly in water' as defined by the Oxford English Dictionary. It would seem this definition, however, fits within the

> biological renderings supposed in mining feasibility studies (Hoogeveen, 2016, p. 363, cited in Eckert et al.. 2020, p. 75).

Eckert et al. find that throughout the IA literature "[t]his fundamental disconnect, shaped by divergent worldviews and cultures in which western and IK systems are embedded, comprises a fundamental hurdle in the exercise of invoking IK in federal EAs" (p. 75).

One disconnect between Indigenous worldviews and the worldviews in which IA is embedded stems from the insistence within the IA legislative process of separating facts from questions of values and ethics. McCreary and Milligan (2014) document how those managing the IA for the (now cancelled) Northern Gateway pipeline project refused to consider issues of ethics and values in treatments of IK, directing particular attention to the distinctions drawn in evidentiary hearings between "evidence" and "arguments":

> In procedural directions for the oral evidentiary hearings, the panel clearly indicated that these hearings were for oral traditional knowledge, not 'recommendations to the Panel on whether or not to approve the Project or terms and conditions that should be applied if the Project were to proceed', which it considers argument not evidence (p. 120).

They go on to argue that "recognition of traditional knowledge only as evidence dismisses the relevance of Indigenous jurisdictions and traditions as frameworks for decisions". This can be contrasted with Gondor's (2016) argument that Indigenous "strategies for management, ethics, values and spiritual relationships are not directly applicable to project impacts" (p. 1153). In this sense, the literature documents fundamental differences between what qualifies as reliable and authoritative knowledge within impact assessment processes, on the one hand, and what constitutes reliable and authoritative knowledge from the perspective of those mobilizing IKs, on the other.

What emerges from looking at the IA literature centered on issues of justice is a tension—between IA frameworks that understand *knowledge* as statements of fact used to improve the accuracy of predicted project impacts, on the one hand, and an understanding of *knowledge* that is more closely entwined with governance, ethics, and values on the other. It is with this in mind that we should understand Nadasdy's (2003b) observation that the "integration of science and traditional knowledge" generally involves "translating First Nation people's life experiences into forms compatible with state wildlife management" (p. 367) and other forms of state-organized management practices, rather than involving substantive re-thinking of government process and practice to reflect the core commitments that undergird IKs. More recently, in a paper published after we completed our review, McGregor (2021) recounts her experience participating in a research initiative organized by the new Impact Assessment Agency aimed at finding "better ways to consider Indigenous knowledges in Impact Assessment" (p. 7). McGregor says of this experience: "The question posed concerned (yet again) how to 'integrate' IK into these non-Indigenous public review and regulatory processes" despite the fact that Indigenous peoples repeatedly raise concerns about the absences of respect for the broader IK systems. Fundamentally different understandings of what it means to include IKs in IA continue to vex efforts at epistemic recognition. IA is designed to deal in evidence, facts, and data, which are implicitly assumed to be separate from political context; however, reducing IKs to evidence, facts, and data misses something fundamental about what IKs are. Reducing IKs to evidence, facts, and data also misses something fundamental about the relationship between these knowledges and Indigenous legal and governance systems. In this sense, the project of epistemic recognition in IA is stuck in a loop of incommensurability.

‘Knowledge-making’ = ‘we-making’ = ‘knowledge-making’

Analytical tools from STS offer one way of making sense of this persistent incommensurability between Indigenous and dominant knowledges by clarifying the dynamic between ‘knowledge-making’ and ‘we-making’ in societies and by illustrating how this dynamic is currently operating in Canada. To say that ‘knowledge-making’ is ‘we-making’ and that ‘we-making’ is ‘knowledge-making’ is to rearticulate insights already expressed in much of the STS literature, especially literature that starts with an understanding of co-constitution (Haraway, 1988; TallBear, 2013: 23) or co-production (Jasanoff, 2004b). When we refer to ‘knowledge-making’, we mean the process of coming to a collective interpretive understanding of facts. This is a social process requiring that an interpretive framework be shared by enough people that a set of facts come to be collectively regarded as true and established. ‘Knowledge-making’ *is* ‘we-making’ in the sense that those who share an interpretive framework become a ‘we’ as they engage in the process of stabilizing the knowledge in question. As Latour (1987) famously put it, the settlement of a scientific controversy through the determination of facts “is the *cause* of Society’s stability” (p.258), that is, it is the cause for the consolidation of a ‘we’. This is easily seen in studies of scientific communities. For instance, in her field studies of molecular biology and high energy physics laboratories, Knorr Cetina (1999) describes the “different architectures of empirical approaches, specific constructions of the referent, particular ontologies of instruments, and different social machines” (p.3) in each field. She calls the different machineries of knowledge production in scientific fields “epistemic cultures”—cultures which involve different logics of evidence, different relationships between observation and theory, different ways of arriving at scientific knowledge—and describes how shared group identities are stabilized within these cultures through the process of making knowledge.

The relationship between knowledge-making and we-making also operates more generally in society. Whether considering different interpretations of the science of climate change, the safety of Covid vaccines, or a whole host of other questions, group identities are stabilized around shared understandings of facts informed by shared interpretive frameworks. We lament the social fissures that come from the apparent breakdown of these shared understandings precisely because they represent a breakdown of a commonly agreed upon reality, and the associated knowledge-making processes meant to hold us together as public citizens. STS scholars continue to actively debate these dynamics and the role of our field in generating them (c.f. Collins et al., 2017; Fuller, 2016; Jasanoff & Simmet, 2017; Latour, 2004; Lynch, 2017; Sismondo, 2017). These are the kinds of dynamics we have in mind in this article when we refer to 'we-making', by which we mean the process through which individuals come to see themselves as belonging to a larger collective. This can take place on multiple and overlapping scales—from families and groups of people with a shared profession to transnational groups with shared experiences of oppression or shared histories of domination and everything in between. The type of 'we' that primarily interests us in this article is the one that comes to exist around a nation or polity, that is one that comes from a shared sense of belonging to an imagined community (Anderson, 2006) associated not only with territorial borders, but more importantly with institutions of governance and law that are generally treated as legitimate by enough of the right[23] members of a society that it is rendered stable. We-making of this kind is knowledge-making because when people form a sense of 'we' around shared institutions of governance and

[23] We take for granted that not all members of a society will exercise the same power in the processes through which this stabilization takes place. Indeed, this paper describes one instance in which this inequality plays out in Canada today.

law, they also form a sense of 'we' around the accepted modes of knowledge-making required for these institutions to carry out their day-to-day functions.

The processes involved in stabilizing accepted modes of knowledge-making rely on the coalescing, through some combination of coercive power and implicit or explicit consent, of a political 'we' capable of granting legitimacy to them. Jasanoff (2005) observes that different societies have different "shared understandings about what credible [knowledge] claims should look like and how they ought to be articulated, represented, and defended" (p. 249). According to her, different societies have different *civic epistemologies*, meaning different "institutionalized practices by which members of a given society test and deploy knowledge claims used as a basis for making collective choices … tacit knowledge-ways through which they assess the rationality and robustness of claims that seek to order their lives" (p. 255). Here again, knowledge ways are stabilized when they are granted legitimacy by enough of the right members of a given society for them to be recognized as leading to just and legitimate decisions. The concept of *civic epistemologies* points towards the ways in which different societies—different configurations of 'we'—influence knowledge-making and vice-versa. In this way, it draws attention to how authoritative knowledge and authoritative decision-making are co-produced. It is in this sense that we say that we-making is knowledge-making and knowledge-making is we-making.

Ezrahi (1990) has described the co-production of knowledge-making and we-making in the broad liberal democratic tradition as a product of the "Enlightenment's *synthesis* of knowledge and politics" (p. 255, emphasis added). Through this synthesis, value-free, depersonalized knowledge came to be understood as a foundation of legitimate power. Enlightenment knowledge and politics were synthesized in that political power had no authority without depersonalized knowledge to support it. This premise remains central to liberal

democracy in all its variations because through it, "the power of public knowledge [can] both discipline and democratize the uses of political power and authority" (p. 288; see also Shapin & Schaffer, 1985). This Enlightenment synthesis relies on a "belief in the universality and neutrality of factual reality, in the existence of a 'neutral cosmos'" (p. 282). It is only if this is the case that it is possible and desirable for facts and values to be held separate and for knowledge to be conceived of separately from governance. From this perspective, authoritative knowledge as well as authoritative decision-making rely on a clear separation between *is* and *ought.* Science provides the *is,* while political and legal institutions shape shared decisions about the *ought.* Of course, the specific civic epistemologies of different political communities differ (Jasanoff, 2005), and decades of STS scholarship illustrate the extent to which this ideal of separation will always remain unattainable in practice. Nevertheless, liberal democracies broadly hold this commitment to pursuing the separation of *is* and *ought* in common. Their legal and governance structures are designed to reflect understandings of knowledge that conform to this pursuit—that is, to reflect the view that knowledge should be depersonalised and universal.

These are the epistemic commitments on display when the IA literature we reviewed discusses the Canadian government's insistence on maintaining the distinction between arguments and evidence in IA. Knowledge, understood as universal and depersonalized, is considered evidence. "Equally valuing" Indigenous and dominant knowledges means treating IKs *as* depersonalized, universal, and removed from governance contexts since it is knowledge that is perceived as bearing these qualities which is the most valued inside liberal thought. Recognizing IKs as possessing these qualities amounts to affording these knowledges equal status to those dominant knowledges. From within a liberal democratic tradition—where publicly visible, depersonalize, universal knowledge is central to disciplining and democratizing the use

of political power—recognizing non-dominant knowledges as capable of contributing to this process is meant to broaden the political 'we'. It does so by bringing into the fold of the state those who will be more likely to accept decisions informed by the authority of these non-dominant knowledges. To the extent that the literature we reviewed in the scoping review documents prejudice against the reliability of the empirical data IKs yield, the project of recognizing IKs as contributing to this liberal democratic ideal remains incomplete. From inside the frame of epistemic recognition, though, the remedies to this problem are relatively straightforward: ensuring parity in funding, addressing instances of empirical observations by Indigenous knowledge holders not being taken seriously, among else.

As we have seen, though, several scholars have argued that thinking of IKs as *only* empirical data reflects a more fundamental misunderstanding. This is where it is useful to note how the dynamic between the construction of knowledge and the construction of shared political identity exists not only within the liberal democracies that have traditionally been interpreted via analytical concepts such as *civic epistemology*, but also in the IKs and political traditions relevant to this paper. Take, for instance, a proposal from McGregor et al. (2020) to "enrich the theoretical grounding and practice of environmental justice" (p. 36) via a vision of Indigenous environmental justice as "grounded in Indigenous philosophies, ontologies, and epistemologies in order to reflect Indigenous conceptions of what constitutes justice" (p. 43). This formulation draws on "anti-colonial critiques and insights" of Indigenous environmental and climate change declarations from the international, national, and local levels. It involves a "set of logics that recognizes the agency of non-human beings as well as the Earth itself" (p. 36) and understands humans and non-humans as having kinship responsibilities towards each other. McGregor et al. point to Whyte's (2018, 2020) articulation of environmental justice as an example. Whyte

proposes that "environmental injustice is an assault on kinship relationships" (2020: 270)—an assault that plays a critical role in "strategically undermining Indigenous collective continuance" (2018: 126).[24]

McGregor et al. and Whyte also link just and legitimate decision-making based on kinship between animate, agential humans and non-humans with specific approaches to knowledge-making. From the perspective of the legal and political philosophies embedded in these approaches, and in contrast to those embedded in liberalism, knowledges must be visibly entangled with values, beliefs, and ethics to be authoritative (McGregor, 2000, 2005; Whyte, in Parthasarathy & Stilgoe, 2022). Knowledge "must be *lived*" (McGregor, 2005: 104) and in being lived must reflect ongoing demonstrations of good relations with human and other-than human members of a given community. From this perspective, legitimate decision making as well as authoritative knowledge require attention to extended webs of kinship responsibilities. Shobita Parthasarathy, in conversation with Kyle Whyte, summarizes the difference between liberal democratic traditions and these traditions in this way: "In the context of Indigenous knowledge traditions, there is no … division between evidence and policy, [while] of course in the Western traditions … trust in evidence and trust in policy … both ensure and assert their authority *by* there being a distinction between the two" (Parthasarathy, in Parthasarathy & Stilgoe, 2022, 34:00).

Watts' (2013) influential description of Indigenous Place-Thought as well as the concept of grounded normativity described by Coulthard (2014) and Simpson (2011, 2017) offer other avenues for understanding this difference. Informed by Haudenosaunee and Anishnaabe

[24] For more on what is meant by 'collective continuance', see (Davis and Todd, 2017: 774–775; Whyte, 2017, 2018).

cosmologies, Watts explains that Indigenous Place-Thought provides a "theoretical understanding of the world via physical embodiment" (p. 21). This understanding is "based upon the premise that land is alive and thinking and that humans and non-humans derive agency through the extensions of these thoughts". She outlines how dominant knowledge relies on the separation of ontology and epistemology, removing "the *how* and *why* out of the *what*" (p. 24). In Indigenous Place-Thought, on the other hand, there is no such separation—authoritative knowledge should be entangled with, rather than purified from, the *ought.* This also has implications for we-making: Non-humans are part of the collective that creates and authorizes knowledge. Watts explains:

> [H]abitats and ecosystems are better understood as societies from an Indigenous point of view; meaning that they have ethical structures, inter-species treaties and agreements, and further their ability to interpret, understand and implement. Non-human beings are active members of society. Not only are they active, they also directly influence how humans organize themselves into that society.

Simpson (2011) similarly describes "diplomatic agreements between human and animal nations" (p. 110) within her Nishnaabeg traditions. These agreements are part of Nishnaabewin, that is "all of the associated practices, knowledges, and ethics that make us Nishnaabeg and construct the Nishnaabeg world" (p. 23). According to Simpson, Nishnaabewin is an example of *grounded normativity,* the "ethical framework provided by … place-based practices and associated forms of knowledge" (Coulthard, 2014: 60). As with Indigenous Place-Thought, grounded normativity is based on the premise that Indigenous peoples' societies and knowledges are deeply situated. Coulthard explains, "Place is a way of knowing, of experiencing and relating to the world and with others" (p. 61). He also draws attention to how "sometimes these relational practices and

forms of knowledge guide forms of resistance against other rationalizations of the world that threaten to erase of destroy our sense of place".

From the Indigenous perspectives discussed here, different animals, and the places in which they live, cannot be reduced to data points by wildlife biologists as these animals are not merely subjects to be studied. Instead, they are active participants in the construction of society ('we') as well as in the creation of knowledge. They cannot be sequestered into the domain of an *is* separate from broader normative questions.[25] This points towards more general divergences between these visions; each reflects its own process of political we-making co-produced with knowledge-making. One relies on an understanding of the world as agential, emphasizes how knowledge and values are always connected to place and knit together through relationship, and is characterized by legal and political communities that reflect this. The other views the world as neutral and inanimate, sets out to create universal knowledge (that is, knowledge disconnected from place), draws firm boundaries between knowledge and values, and institutionalizes these boundaries through its political and legal institutions.

Therefore, when the literature in our scoping review highlights fundamental differences in values between Indigenous and dominant knowledges, when it refers to the different ontological status accorded to fish in Indigenous and dominant knowledge systems as a representative example of a commonly cited challenge, when it criticizes the reduction of IKs to mere data, we see it aligning with the perspectives on Indigenous 'we-making' and 'knowledge-making' practices outlined above. For those who share this general orientation, liberal commitment to 'equally valuing' Indigenous and dominant knowledges by treating IKs as

[25] More recent theorists rooted in dominant traditions have begun to consider what it might mean to broaden the sense of the political 'we' beyond humans (e.g. Boyd, 2005; Donaldson & Kymlicka, 2011; Latour, 2004a). As Todd (2016) points out, these efforts have to date largely neglected to meaningfully engage with those Indigenous traditions that have well-established theoretical foundations for this kind of project.

depersonalized and universal misses the fundamental nature of IKs. In this sense, *recognizing* IKs in impact assessment relies on their being aligned with visions of authoritative knowledge compatible with liberal democratic institutions. To achieve this, these knowledges must be severed from any ontological and epistemological commitments as well as legal and political traditions that are incompatible with the de-personal and universal values that characterize liberal we-making and knowledge-making. This means that "equally valuing" Indigenous knowledge from inside the liberal frame ends up lending further power to the frame itself, marginalizing those Indigenous approaches to knowledge and governance that do not fit within it. As TallBear (2017; see also 2015; 2011) puts it:

> Nonindigenous society has put much effort into erecting a barrier between what it is thought humans can *know* through their materialistic, empirical investigations and what (some) humans *believe* to exist beyond the knowable material world. This knowing/belief divide, as Paul Nadasdy (2003) points out, is a form of discrediting language used, for example, by even sympathetic anthropologists when explaining indigenous subjects' cosmologies (p. 192).

TallBear goes on to remark how this divide is "upheld by institutions to govern [Indigenous peoples] lives, the land, and the lives of nonhumans who have been savaged by Western analytical frameworks, animacy hierarchies, and the institutions they produce" (p. 194).

Of course, while the literature we reviewed points us towards this analysis we cannot assume that it is shared by all members of all Indigenous communities. Indigenous traditions within Canada are diverse. Just as importantly, these are traditions that continue to change in response to new circumstances, including circumstances arising from colonialism. Communities continue to decide whether and how to seek out, subvert, or resist full participation in Canadian

governance and legal processes, and they continue to adapt their traditions accordingly. These are not easy decisions. They have the potential to involve significant intra-community political struggle. If we take seriously the idea that stabilizing modes of knowledge-making relies on the coalescing of a political 'we', then we must understand intra-community debates over these questions as pertaining not only to questions of governance but also to questions of knowledge. We can refuse (Simpson, 2007, 2016) to get into the weeds of these debates while still recognizing this relationship between struggles over knowledge and struggles over governance.

The failed promise of epistemic recognition

The institutional practices and policies of Canadian IA appear to lack the conceptual 'vocabulary' to treat as *knowledge* anything coupled with ethics, values, and worldviews that reflect epistemological and ontological commitments different from those built into the existing structure of the liberal democratic state. The result of this absence is that the very body charged with the act of recognizing Indigenous knowledges is incapable of doing so if they retain any sense of entanglement with relational values and governance structures. Success at recognizing any such knowledges would require major changes to the institutions that sustain the boundary between fact and value, the boundary between knowledge and governance, which rests at the heart of liberal democracy. The results from our literature review as well as the current policy landscape illustrate that the fact/value distinction remains central to IA in Canada. In this sense, the promise of epistemic recognition in the new IA legislation is hamstrung by the requirements of Canadian institutions of governance.

The failure of epistemic recognition in IA is consistent with challenges with the paradigm of recognition along other axes. Coulthard (2014) questions the value of recognition as theorized by Fraser, drawing attention to the fact that Fraser herself "admits that her status model may not

be as suited to situations where claims for recognition contest a current distribution of state sovereignty" (p. 36), as continues to be the case in Canada. In such a context, according to Coulthard, recognition means that people can only be esteemed, seen, and respected from within the existing state apparatus, rendering invisible or *unrecognizable* anything about them that is unintelligible within it or that poses a threat to it. As Coulthard puts it, "colonial powers will only recognize the collective rights and identities of Indigenous peoples insofar as this recognition does not throw into question the background legal, political, and economic framework of the colonial relationship itself" (p. 41). Based on what we have said in the preceding pages, we add to Coulthard's argument the assertion that colonial powers will also only recognize the knowledges of Indigenous peoples insofar as this recognition does not throw into question the background frameworks for authoritative knowledge and associated legal and political institutions that help sustain the colonial relationship.

The colonial relationship is stabilized through the ongoing mobilization of visions of authoritative knowledge that position the epistemological and ontological commitments of dominant science as universal. This practice serves to actively obscure the inseparability of knowledge-making and we-making by treating credible knowledge-making as necessarily neutral and un-situated. To see what we mean, we veer briefly into the international arena. Martello and Jasanoff (2004) observe that in efforts to include Indigenous and local knowledges in international environmental management,[26] "international regimes have continued to invoke, and so to reinforce, the boundary between science and other forms of knowledge; only knowledge that cannot and does not aspire to the status of science is labeled local or indigenous" (p. 13). In

[26] Provisions for including IKs into international environmental regulatory regimes have been in place since at least 1992 (Martello and Jasanoff, 2004: 10–11).

processes geared towards recognizing these knowledges in international regimes, new group rights, and new forms of representation based on group identities, become linked to those who do not "do science" while "science itself … remains putatively universal and free from local coloration" (p. 13). This approach hinges on the presumption of essential differences between IKs and universal "science" and, by extension, between those who do science and those who do not. While there are certainly important differences between approaches to IKs in international arenas and in Canada, this active demarcation between science (universal, neutral) and IKs (local, contingent, culturally specific) is present in both. The substantial focus on recognizing IKs in the impact assessment literature about Canada—always assumed to be distinct from science— speaks to this fact. So does the institutional organization of efforts to include IKs in regulatory processes: Issues related to IKs belong to the Indigenous Advisory Committee while it is left to the Technical Advisory Committee on Science and Knowledge to consider matters of science.

The treatment of science as universal shores up power because obscuring the situatedness of dominant knowledges also obscures the situatedness of the dominant political orders with which they are intertwined. This serves to normalize the dominant political order. In contrast, treating dominant knowledges as situated opens pathways for de-normalizing not only the ethical commitments implicit in these knowledges, but also their associated political orders. TallBear and Kolopenuk, for instance, "reject the idea that science and Indigenous knowledges exist as a binary, foreground Indigenous ethics, and challenge non-Indigenous science to do better" (TallBear, 2021). This is a perspective also reflected in TallBear's (2014) ethnography of Indigenous bioscientists in the US, which is "not mainly concerned with assessing Native American social or cultural difference" (p. 173) but instead with "how Indigenous participation

in bioscience can help make Western bioscience more multi-cultural and democratic". Liboiron (2021) similarly rejects the binary drawn between Indigenous knowledges and science by describing how Indigenous researchers may "use their own diverse knowledges to get scientific work done" (p. 53). As with TallBear and Kolopenuk, Liboiron emphasizes the ethical dimensions of knowledge and draws on Indigenous perspectives on relationality to transform the methodological and ethical orientations of scientific practice. This work involves drawing close attention to how the same epistemological and ontological commitments that inform the liberal-democratic 'we-making' we have discussed in this paper are linked with the ethics and values that figure into purportedly neutral and universal scientific practice today.

This adds epistemic and ontological dimensions to existing critiques of the politics of recognition. Recall Coulthard's comment that "colonial powers will only recognize the collective rights and identities of Indigenous peoples insofar as this recognition does not throw into question the background legal, political, and economic framework of the colonial relationship itself" (p. 41). The kinds of critical examination of the basic commitments of dominant science offered by TallBear, Kolopenuk, and Liboiron require exactly that which Coulthard says the politics of recognition does not allow—they draw out the values implicit in dominant modes of knowledge-making and propose new approaches to knowledge-making informed by Indigenous worldviews. Given the inseparability of knowledge-making and we-making we have outlined here, these approaches must ultimately pose challenges to dominant modes of governance as well—challenges *recognition,* in its current formulation, is not equipped to meet.

Conclusion

To conclude, we can return to Carolyn Bennett's comments that consent "means that Indigenous peoples and Indigenous knowledge will be mandatory at the very beginning of a

proposal for any major project" (Canada, 2020d: 2100). Taken at face value, Bennett's comments amount to a statement that consent means representation and the recognition of IKs in IA processes. This understanding of consent stands in stark contrast to the understanding of consent expressed by those refusing the project. Hereditary chiefs answered a BC Supreme Court injunction ordering them to vacate their land with an eviction notice of their own presented to Coastal GasLink. The chiefs' notice stated that CGL had violated the Wet'suwet'en law of trespass—that CGL did not have their consent to be on their land (Unist'ot'en Camp, 2020). Consent in this sense did not equate to participation and the inclusion of Indigenous knowledges in federal decision-making processes. No amount of empirical data derived from IKs, stripped of its relational and ethical elements, and fed into a federal impact assessment process, would change the clear difference in understandings.

STS scholarship makes clear that knowledge is always embedded in historical, social, and technical contexts, and is always infused with normative, ontological, and epistemological commitments. In this article, we have highlighted how multiple political and legal structures in liberal democratic societies decontextualize knowledge as much as possible. Liberal democracy depends on this decontextualization to facilitate the ongoing separation between knowledge and politics, fact and value; from within liberal democratic logic, both knowledge and political power rely on such a separation for their authority. We have also drawn attention to how this approach to knowledge is a matter of choice and tradition. Societies determine and develop their political and legal institutions in conjunction with their understandings of authoritative knowledge. The two can never be separate.

Our literature review of impact assessment scholarship drew attention to the ways that epistemic recognition in impact assessments comes up short—only those elements of IKs that

can be viewed as neutral data about impacts are admissible into federal IA processes. This is because impact assessment is part of a set of political and legal structures operating from a different set of epistemological and ontological commitments from those in which IKs are produced. Rather than pursing pathways to shed light on these epistemological and ontological commitments impact assessment processes continue to treat science as universal. This has the effect of naturalizing the basic legal and political institutions of the Canadian state and ends up lending further power to them.

If diverse knowledges are to be 'equally valued' in impact assessment, as the federal government claims it wants, then diverse approaches to governance and politics, not to mention diverse ontological and epistemological commitments, must be welcome. In other words, the current structure of the settler colonial liberal democratic state, existing distributions of power, and the ontologies and epistemologies with which they are linked, must be up for negotiation and rearrangement. This is an argument that has been repeatedly made by scholars in Indigenous studies, who consistently emphasize the importance of Indigenous sovereignty and of thinking critically about the sovereignty claims of settler-colonial states (Bauder and Mueller, 2021; Deloria, 1996; Gaudry and Lorenz, 2018; Moreton-Robinson, 2015; Tuck and Yang, 2012; Yellowhead Institute, 2019). From this perspective, valuing Indigenous and dominant knowledges equally requires the very rearrangement and redistribution of power that existing efforts at recognition seem to be designed to avoid.

Understanding Bennett's statement with any measure of generosity involves unpacking its implicit logic. This is a logic that situates consent in terms of *consenting* to participate in a process of de-personalized data gathering to determine the impacts of a project and to make decisions in the 'public interest' informed by these data. From this logic, the effort of recognizing

IKs means better including Indigenous peoples into the 'we' of the state while retaining the basic frameworks that underpin its co-produced political, legal, and knowledge orders. This is the Enlightenment synthesis of knowledge and politics in action. The political, ontological, and epistemological commitments of this synthesis are treated as universal rather than as the products of a culturally specific process of co-production. This synthesis shifts the meaning of consent away from questions of jurisdiction and into the domain of 'universal' knowledge. This shift, reliant as it is on its universalist claims, does major work in buttressing the sovereignty claims of the Canadian state and bringing Indigenous peoples living within the borders Canada claims into the 'we' of that state. As Liboiron (2021) writes, however, the "[t]he universal is never universal, but rather an argument to imperialistically expand a particular worldview as *the* worldview" (p. 52). Ultimately, these universalizing moves reflected in the Canadian impact assessment literature, and made evident in legislation and policy, distract from ongoing struggles over jurisdiction.

Chapter 5 – Conclusion

To close, I return to Caleb Behn's response to George Marshall at ClimaCon2016. Marshall's story about Albertans continuing a long, proud history of resource extraction by directing their grit and technological innovation to climate-friendly horizons was another iteration of Canadian resource techno-nationalism. Behn summarized in one rhetorical question the relationship between the dominant sociotechnical imaginary for Canada and the circulation of settler colonial power I have described in this dissertation. In 2016, my mostly white, professional colleagues and I heard in Behn's question a seemingly impossible problem. We wanted a story that would help enroll oil and gas workers into the collective of people working to accelerate action on climate change; however, Behn's question made clear that Marshall's was not a story we ought to use. Together, the articles in this dissertation offer an alternative narrative and direction by pointing towards the potential for more alignment between land defenders, water protectors, and oil and gas workers than Marshall's story implied. They do so while contributing to scholarship in STS on sociotechnical imaginaries.

Limitations

It is worth repeating that this dissertation did not set out to study Indigenous oil and gas workers or to study Wet'suwet'en views on the Coastal GasLink pipeline. I focused on a moment of mass mobilization against CGL to situate oil and gas workers in the sociotechnical imaginaries circulating among federal politicians' and the mainstream media. I have contrasted the representations of oil and gas workers circulating among politicians and the media through these imaginaries with the representations non-Indigenous oil and gas workers make of themselves. This is also not a project centered on empirically tracing the material and financial

constituents of world-making but instead is a project interested in how discourse and representation contribute to the world-making process.

This dissertation also does not reflect a representative sample of oil and gas workers. Ambivalence towards Canadian resource techno-nationalism and the *industrious self*, on the one hand, and articulations of the *skilled self*, on the other, came up so frequently among interviewees that I can comfortably say that on these themes I achieved data saturation with my sample size. Nevertheless, the relatively small sample size and the likelihood that those oil and gas workers most closely aligned with recent right-wing mobilizations in the country were the least likely to choose to speak with me suggest future directions for scholarship: extending this work by testing my findings among a larger group of workers to clarify the extent to which conclusions can be generalized.

The key argument: collectives are disciplined into being

At the beginning of this dissertation, I asked: *How is enough alignment achieved between state-level and on-the-ground imagination and enactment of oil and gas workers' identity to enroll these workers into the work of stabilizing and bringing dominant sociotechnical imaginaries in Canada to life?* Across my three articles one can see that alignment between elites' imagination of oil and gas workers and workers' imagination of themselves is not necessary for workers to participate in the collective performance of Canadian resource techno-nationalism. Elite actors deploy the resources at their disposal to make it easier for workers to live the lives imagined for them. This is made evident by the fact that the oil and gas workers with whom I spoke ended up enrolled into Canadian resource techno-nationalism regardless of their affinity to the imaginary and regardless of whether they represented themselves as the *industrious selves* powerful elites imagined them to be. By virtue of living in Canada and

needing to make a living, these workers ended up as part of a national collective performing Canadian resource techno-nationalism. The political and media discourse that circulated during the 2020 mobilizations against Coastal GasLink is illustrative of the Canadian elite's efforts to confront challenges to this longstanding dominant sociotechnical imaginary stemming from assertions of Indigenous sovereignty by incorporating Indigenous people into it as *industrious selves*.

The Government of Canada's efforts to incorporate Indigenous knowledges in state-led impact assessment are illustrative of one institutional contribution to this process of assimilation. As with politicians' and media discourse about the benefits of oil and gas projects for Indigenous people/s, these are efforts that take for granted the idea that land is something neutral and empty that should be standardized, simplified, and managed through the rational application of dominant technoscience. Only those Indigenous individuals and only those elements of Indigenous knowledges that align with this view fit into the settler state and capitalist economy. Even if – or perhaps more accurately precisely because – this is the case, the state mobilizes its considerable discursive and material resources to rearrange lands and lives in ways that funnel Indigenous people/s into participating in these processes of standardization, simplification and management via jobs in oil and gas. It is through this labour that they too end up part of the collective performance of Canadian resource techno-nationalism.

If democracy is visible anywhere in the processes of enrollment into Canadian resource techno-nationalism which I document in the preceding articles, it can be seen in the mobilization of thousands of people resisting it in the winter of 2020. In striking continuities with the past, those doing so by physically blocking pipeline construction and transportation corridors faced arrest. Along with those who participated in solidarity rallies and actions, they were also

characterized in the media and by politicians as naïve radicals while industrious Indigenous oil and gas workers were celebrated as model citizens. By characterizing those fighting for lives incompatible with an understanding of land as something neutral and empty to be managed and profited from in this way, elite actors deployed their discursive resources in ways that helped rearrange lands and lives in accordance with their dominant sociotechnical vision of Canada as yoked to oil and gas. They helped enroll workers into the work of bringing Canadian resource techno-nationalism to life by helping to discursively foreclose the world for which those resisting CGL were fighting. This foreclosing had the effect of making participation in Canadian resource techno-nationalism a rational response to the coercion of elite power in Canada.

Contributions & further questions

Through my dissertation I set out to bring to conversations in STS about the critical role that imagination plays in shaping sociotechnical futures empirical insights on how imagination gives way to the disciplining effects of power. I also intended my empirical interventions to offer case studies documenting how the ontologies and epistemologies associated with dominant science serve the process of materially securing settler-colonial futures. Specifically, I have contributed to two ongoing conversations in STS and hopefully opened some directions for future research.

1) Hegemonic influence on collective formation warrants close attention

In the first instance, I bring to research on sociotechnical imaginaries empirical insights that help "probe the nature of structure-agency relationships through inquiries into meaning making" (Jasanoff, 2015: 24). Specifically, the articles in this dissertation draw attention to how some peoples' imagination *matter* more than others', in the sense that some peoples' imagination becomes more material than others. The collective sharing visions of desirable futures is smaller

– likely much smaller – than the collective enrolled into performing these visions through the disciplining effect of discourse, public policy, institutions of governance, physical infrastructures, and so on. It follows that those with the greatest ability to direct these mechanisms have the greatest ability to imagine in ways that materially contribute to world-making. This includes the ability to enroll people into collectives and into imaginaries not of their deliberate choosing or imagining by shaping the variety and kinds of opportunities available to them. This kind of disciplinary enrollment is an example of how imaginaries gain "traction through blatant exercises of power" (Jasanoff, 2015: 4). This kind of enrollment also invites important questions about what is meant by "collective" when scholars in STS write of collective meaning-making and the collective performance of imaginaries. Put simply, we must not confuse participation in a collective with individual or democratic consent.

The long history of Canadian resource techno-nationalism I have described in these articles also calls on scholars to consider how the cumulative *mattering* of an imaginary resources responses to social struggles against it. The mobilizations against the Coastal GasLink pipeline in the winter of 2020 are indicative of the powerful resistance that has punctuated longstanding refusals of Canadian resource techno-nationalism. We can assume that this resistance helps account for the shift from descriptions of Indigenous people/s as essentially unfit and unwilling to work in the 19th Century to descriptions of them as industrious today. We can equally assume that the resistance helps account for the increasing necessity of Indigenous ownership stakes in Canadian resource projects if they are to see the light of day. Here we see adaptations of the elite's dominant sociotechnical imaginary in response to shows of power against it.

At the same time, the discourse circulating over the winter of 2020, and especially the way this discourse helped shift attention from the larger ontological and jurisdictional questions at play, offers insight into how exercises of power against the elite's dominant sociotechnical imaginaries are confronted in ways that shore up and protect their core features. The case of the inclusion of Indigenous knowledges in impact assessment offers an example of how this discursive shoring up is paired with tweaks to institutions of governance that help accomplish the same. On both counts, the cumulative effect of 200 years of re-arranging lands and lives in Canada helped hold firm, both materially and discursively, the primary goal of deploying technology to extract resources from lands over which the Canadian state claims exclusive sovereignty. It did so simply by being the existing imaginative and material ground upon which land and life had to organize itself, towards which it was forced to refer. Any show of resistance took place inside a set of material and discursive conditions that substantially shaped its outcome.

In the winter of 2020, adapting visions of who counts as belonging to the collective and how they come to do so was a critical means by which the hegemony of the imaginary was maintained. Imagining and creating Indigenous oil and gas workers was critical to responding to a show of power centering Indigenous needs and desires – doing so served to situate these needs and desires inside discourse and mechanisms that hold the status quo in place. Here again, we see how those with the most resources at their disposal have the greatest ability to make their imagination material. Here again, the process of shaping the variety and kinds of opportunities available to individuals is crucial to the effort of enrolling them into a collective that performs specific imaginaries regardless of whether the individuals that comprise it are invested in them.

The case of Canadian resource techno-nationalism serves as an example of how the discursive power and material interests of elites circumscribe the freedom of citizens by enrolling those subjugated individuals into the labour of carving settler meaning onto land. The case of oil and gas workers identifying as *skilled selves* is indicative of how they retained their agency despite being enrolled into performing the elites' desired *industrious self*, as does the fact that more than one was actively involved in social movements resisting the very imaginary they performed every day through their labour. The case of Canadian politicians, journalists, and columnists leveraging Indigenous oil and gas workers to stabilize Canadian resource techno-nationalism is indicative of how the circumscribed agency of some can be put in service of a broader meaning-making process by representing it as an indication of broader consent to participation in the collective. This was, after all, what the media and politicians accomplished by pointing towards the existence of Indigenous oil gas workers and by speaking about those who supported the possibility of creating more such workers, even as thousands mobilized against this very proposition and against 200 years of rearranging lands and life to make this possibility appear to be the most rational and pragmatic of available options.

Overall, these observations draw attention to how collective-formation (what I call "we-making" in Chapter 4) is a fraught process punctuated by ongoing resistance and held together not only through the affect that comes with shared imagination but also – and even more - through the disciplinary power that circulates through the policies, laws, institutions, and infrastructures that bring people into the process of performing imaginaries even when they are not fully invested in – or even actively involved in resisting - them. If this is the case, one cannot help but ask about the scope and limitations of thinking that there is indeed a "collective" that shares a civic epistemology or that performs a sociotechnical imaginary. Questions that come to

mind include: What, precisely, does it mean for an imaginary to be *collectively* held? Who belongs to the collectives involved in holding and performing imaginaries? How are they held together? Where does technoscience fit into the process of holding not only an imaginary, but also a collective, together?

2) Power is sustained by normalizing nature/culture as a universal duality

Alongside these contributions and questions about the nature of the collectives involved in collectively performing imaginaries, my research also points towards a second set of overarching contributions and questions about the relationship between power, ontology, and epistemology. Both in the case of including Indigenous knowledges in impact assessment and in the case of discourses about Indigenous oil and gas workers, eclipsing ontological difference helped normalize a sociotechnical imaginary that strengthened the authority of the Canadian settler state. Denying the possibility of ontological difference was a pre-requisite to funneling Indigenous knowledges and Indigenous people/s into regulatory processes over which the settler state retained control and final decision-making authority. Doing so also helped discursively marginalize those Indigenous peoples and their allies challenging the status quo in the winter of 2020. In the case of impact assessment as well as in the case of media and political discourse, this erasure contributed to materializing a vision of Canadian identity by enrolling Indigenous workers, and Indigenous people/s more broadly, into the dominant collective. This shored up the state's claims to have the authority to override any efforts among Indigenous people/s to refuse participation in resource extraction and to work towards the resurgence of ways of living that are incompatible with the Canadian state.

The developmentalist overtones of this erasure are hard to miss. Conservative politicians and politically aligned columnists were especially direct in representing those Indigenous leaders

asserting ontologies incompatible with the existing Canadian state as underdeveloped relics from the past. Nevertheless, the process of recognizing Indigenous knowledges in Canadian impact assessment is indicative of this sentiment existing well beyond a few Conservatives. In impact assessment, after all, Indigenous knowledges are recognized as knowledge only when they are described as capable of delivering data and empirical predictions aligned with the Enlightenment dualisms of politics/knowledge, fact/value, knowledge/religion. The background assumption here is that adopting these dualisms represents a moment of fundamental, universal human progress through which all peoples pass in their process of developing into knowledgeable peoples. This understanding runs parallel to the idea that circulated among politicians and the media that the settler state's past sins were to deny Indigenous peoples' modernity by ignoring the compatibility of Indigenous people/s and traditions with hard work in resource extraction. In the case of Indigenous knowledges, the past sin was to deny that they too had traditions that had "already" successfully separated science from politics and religion. In both cases, the remedy was simple: it was to admit Indigenous people/s into existing settler economies, institutions, and governance processes because, the logic went, these are not *settler* economies, institutions, and governance processes at all but, instead, reflect a universal ontology, epistemology, and ethic. This erased the possibility of worlds constituted via ontologies, epistemologies, and ethics incompatible with those of Canadian resource techno-nationalism.

To be fair, it is a lot to ask of politicians, journalists, and commenters to interrogate the fundamental categories and demarcations that order their world – categories and demarcations that remain so dominant for those embedded within in them that they can seem invisible. This invisibility is a testament to the power that circulates through the coproduced discursive and material processes that order the world in the first place. Even scholars who dedicate their lives

to asking how this ordering occurs and how it is entangled with power cannot fully extricate themselves from it – to do so would be to perform the impossible "god trick of seeing everything from nowhere" (Haraway, 1988: 581). This means that power circulates through this scholarship too. For instance, alongside all the conceptual tools Donna Haraway has offered to help thinkers attend to questions of power in the production of technoscience, several scholars note how her work "remains within the orbit of Eurocentric epistemologies and ontologies" (Sundberg 2014:35; see also Willey 2016) because it "continuously refers to a foundational ontological split between nature and culture *as if it is universal*" (emphasis in original). Much the same can be said of Sheila Jasanoff's focus on "modernity" and on the "modern" (2005: 248, 251, 255, 262, 267; Jasanoff and Kim, 2015) societies defined by this same foundational split in theorising *sociotechnical imaginaries* and the broader idiom of co-production to which the concept is attached.

In a settler state like Canada where the split between nature and culture serves Indigenous erasure and settler power, it is necessary for those among us who have inherited it to remain aware of the situatedness of our knowledge while still stretching beyond Eurocentric epistemologies and ontologies. I hope that this point has been reinforced in this dissertation. It is with it in mind that I have attempted to stretch scholarship about the co-production of knowledge and social orders outside its traditional 'comfort zone' by shifting the site of comparative analysis. Co-productionist STS has generally helped researchers examine the definition and stabilization of the boundary between science and politics in societies that take the necessity of holding this boundary for granted. Here I have used it to frame comparisons between a Canadian state that defines itself in terms of this boundary, on the one hand, and those actively resisting it, on the other. Doing so has, I hope, illustrated the value of avoiding the same developmentalist

trap reflected in the media and by politicians in the winter of 2020 by taking seriously the possibility of desirable visions of the future shaped by something other than longstanding efforts to hold nature and culture apart.

Taking this possibility seriously, I suggest here, also means pursuing STS research that sets aside nature/culture as a foundational duality and instead asks questions like: What are the fundamental boundaries that order different societies? What ontologies, epistemologies, and ethics do these fundamental boundaries reflect? What are the consequences of these fundamental boundaries for understandings of authoritative knowledge and authoritative power? What are their consequences for the formation and holding together of collectives? How do such collectives engage in conversation and connection across incommensurability?

Back to ClimaCon2016 & future collectives

Regardless of what future research might find about the collectives involved in performing sociotechnical imaginaries and about the fundamental boundaries within different societies, what my articles taken together underscore is that the Canadian state's role in actively constructing and protecting the boundary between knowledge and politics helps maintain settler colonial power. This is accomplished, in part, because protecting this boundary helps enroll Indigenous people/s into the collective performing Canadian resource techno-nationalism.

My work also underscores that Indigenous people/s are not alone in being enrolled into this collective even when they share no affinity for the imaginary it helps bring to life. Oil and gas workers end up performing as *industrious selves* even when they actively work against this identity and the imaginary it helps materialize. This ambivalence towards Canadian resource techno-nationalism among oil and gas workers has implications for those seeking to grow

coalitions in support of more aggressive climate action. Most importantly, it suggests that Marshall's imaginary didn't only celebrate colonial violence – it also likely did little to enroll skeptical oil and gas workers into the cause. On the one hand, this or any imaginary is of consequence only to the extent that it helps mobilize the resources needed to rearrange lands and lives in accordance with it. With few such resources at their disposal, oil and gas workers' receptivity to Marshall's imaginary is of relatively little consequence. What matters more is how Marshall's iteration of Canadian resource techno-nationalism did or did not influence the decisions of those making policy and large-scale spending decisions that would help shape the paths of least resistance for those currently working in oil and gas. On the other hand, to the limited extent that affinity to an imaginary may make a difference, an imaginary that included oil and gas workers as *skilled selves*, rather than *industrious selves*, would be more in line with how the oil and gas workers with whom I spoke represent themselves.

That an imaginary including *skilled selves* would be more in line with how workers represent themselves matters for those seeking to grow movements for Indigenous resurgence and climate justice. An imaginary that includes *skilled selves* suggests greater possibilities for alignment between the needs and desires of oil and gas workers and those involved in these movements than might otherwise be assumed. *Industrious selves* are inseparable from Canadian resource techno-nationalism and the settler colonial logic that goes with it. *Skilled selves* do not necessarily need either. This suggests the possibility of broader collectives including land defenders, water protectors, oil and gas workers, and non-Indigenous movement builders marshaling the discursive and material power at their disposal to disrupt the elite's dominant imaginary and everything that comes with it. That so much goes into enrolling workers into this

dominant imaginary is indicative of just how threatening to the status quo such an alliance could be.

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Appendices

Appendix A: Interview guide for in-depth interviews with oil and gas workers

1. What is your job title?
2. What background in terms of education or training did you need to do your job? (follow up: Do you have other education or training in addition to the training you have for this job?)
3. How did you end up working in the oil and gas industry?
4. Can you describe a typical day at work?
5. I asked you to take photos to share. [interviewer to pull them up on the screen] Can you walk me through them? Why did you choose to take these photos in particular?
    a. Follow-up questions TBD based on the discussion. Examples could be: What, if anything, is "in the way" of getting to what you want for yourself in the photos representing what you want in 5-10-15 years? In the future you want, does your family life and social life look very different from the way it does today? Which specific energy technologies do you envision working with 5-10-15 years from now?
6. If no photos:
    a. What are you most proud about in the work that you do today? Why do you do it?
    b. What kind of work would you like to be doing in the next 5, 10, and 15 years?
    c. Follow up questions as above.
7. Over the last year, I've been going through media coverage and parliamentary debates about your sector. I'd like to share some of my results with you and ask you for your reactions and thoughts. But first: Do you have any guesses about how people in your industry are represented in the media and by politicians? Follow-up:
        i. How does this compare to how you would describe yourself?
        ii. How does this compare to how you would describe your colleagues?
    b. These are some quotes I found about people who work in your sector in the news and in debates that took place in parliament.
        i. Do you have any reactions to these quotes?
    c. Now, I'd like to share with you some images that represent some of the key themes I have found and ask you for your reaction to them.
        i. Do these quotes represent you?
        ii. Where/do you see yourself in these pictures?
        iii. Are there any of these you really feel reflect what you want for yourself and your family? Which one(s) and why? If not, how would you change them?
8. If you had the power to change Canada to look however you wanted it to over the next 10-20 years, what would it look like?
9. Is there anything else you'd like to share?

Appendix B: Photo prompts shared with interviewees

A picture is worth a thousand words. That is why I am asking you to take some photos before we meet for your interview. You do not have to go out of your way to take these photos. In fact, it is probably most interesting if you *do not* go out of your way, and instead take photos of things around you in your day-to-day life.

Here is what I hope you will share with me:

a. 1-3 photos that represent things that you are proud about in your current work. If you *can* take photos of your physical place of work, these are very welcome; however, photos taken elsewhere that fit with the prompt are also perfectly fine.
b. 1-3 photos that represent why you do the work you do.
c. 1-3 photos that represent the work you hope to be doing in the next 5 and/or 10 and/or 15 years.

That means that I am asking you to take between 3 and 9 photos. Ideally, you will take these photos and send them to me via email before your interview. I will ask you to tell me more about them during the interview. Any photos you provide me that include identifiable people will not be used in any presentations or publications.

Appendix C: Passages shared with interviewees

Images shared with interviewees were taken from media sources and cannot be reproduced here due to copyright.

The passages shown to interviewees are below. When presented to interviewees, they were anonymized.

1. “We had a group of people in this chamber saying our hard-working men and women in the oil and gas sector and in the construction sector are dangerous in small communities. They help build small communities. They are not dangerous people in those communities” (Conservative MP Warren Steinley in Canada, 2020: 1585).
2. “People do leave the oil field and get different careers. That should be their choice, not the choice of a select few elite who think their jobs are not worth having anymore” (Conservative MP Warren Steinley in Canada, 2020: 1585).
3. “There is a war on the working men and women of this country. If people do not believe me, just ask the 7,000 would-be workers at the now cancelled Teck Frontier mine in northern Alberta. If people do not believe me, ask the thousands of workers who would be on site now, finishing the construction of the northern gateway pipeline. If people do not believe me, can ask the 200,000 out-of-work Canadian energy employees who sit staring at their phones, waiting for it to ring with a job offer across northern Alberta. If people do not believe me, ask the more than 20% of young males in the province of Alberta, who are unemployed and desperate for opportunity” (Conservative MP Pierre Poilievre in Canada, 2020e: 1568).
4. “Workers in the natural resource sectors helped build this country. These same workers will build our low-carbon future. It is their skills, determination and ingenuity that will get us to zero and ensure continued prosperity. They won’t be left behind – they will lead the way” (Liberal MP Seamus O'Regan in Canada, 2021).
5. “I would like to express my thanks to all of Canada's energy and mineral mining sector workers, whether it be those in the oil sands sector, those working in the western Canadian sedimentary basin, those mining uranium, those maintaining our nuclear plants in Ontario and those working on the TMX pipeline or on the Coastal GasLink, which will supply LNG to the Asian markets, displacing coal and thus reducing the world's global greenhouse gas emissions. We speak about climate change. We speak about saving our planet. We speak about moving forward. One of those aspects is displacing coal through LNG and that needs to happen so we can get to where we need to be” (Liberal MP Francesco Sorbara, Canada, 2020a: 1861).
6. “We have always been and will continue to be a resource-driven economy. Just look at the bounty of the resources we have to offer toward renewable energy: our long sunny summer days; powerful river systems across the country; beautiful forests […] This new economy brings with it the promise of new jobs for electricians, mechanics, manufacturers, truck operators and the list goes on […] One solar company in Fredericton has already trained 200 people in solar panel installation work, half of which has come from the Alberta oil sands. [Translation]This is an opportunity that will help

reunite New Brunswick families. At the same time, this will allow workers to participate in the economy of the future”(Green MP Jenica Atwin in Canada, 2020f).

Appendix D: Code book summaries

The following charts provide summaries of the codebooks used for analysing the media, parliamentary record, and interviews.

Media and Parliamentary record

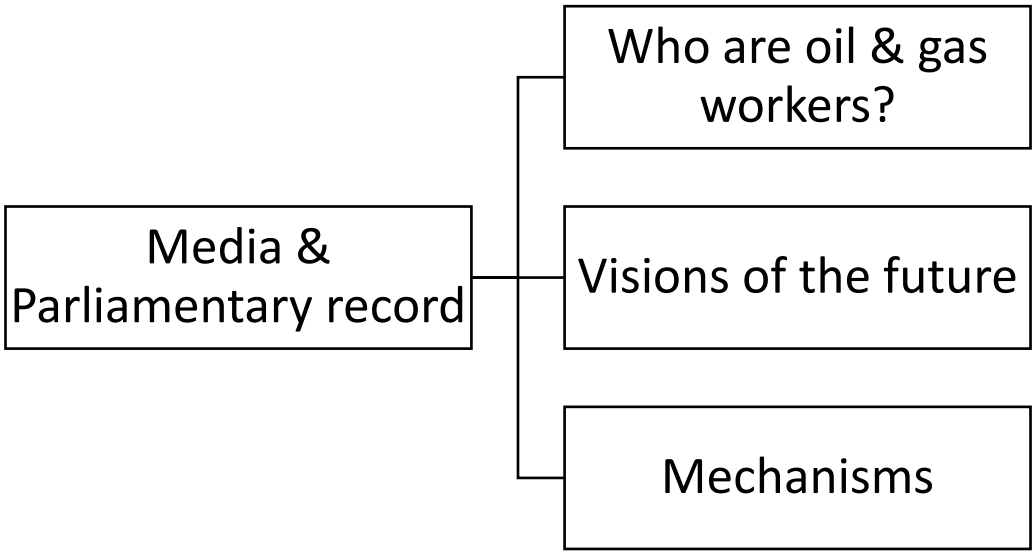

Figure 3: Deductive codes for initial round of coding mainstream media and parliamentary record

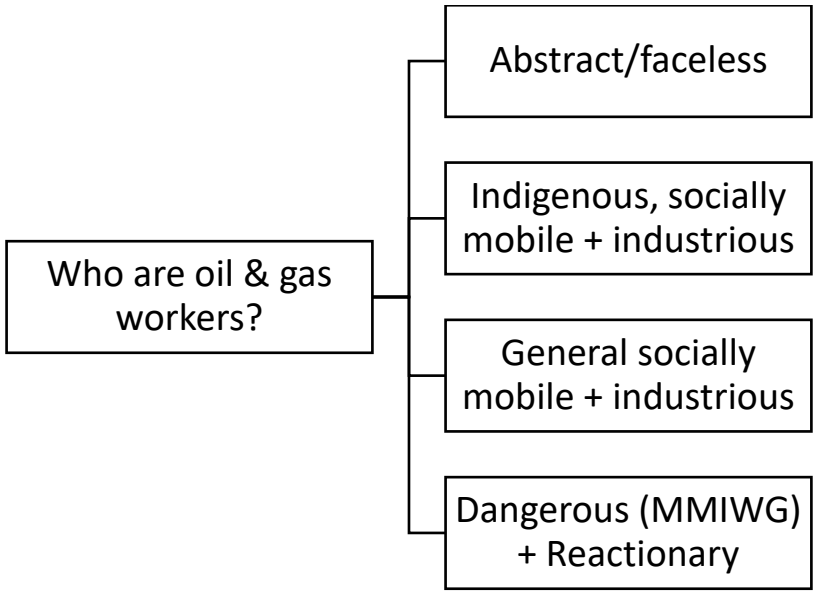

Figure 4: Inductively derived themes pertaining to oil and gas workers in the mainstream media and parliamentary record

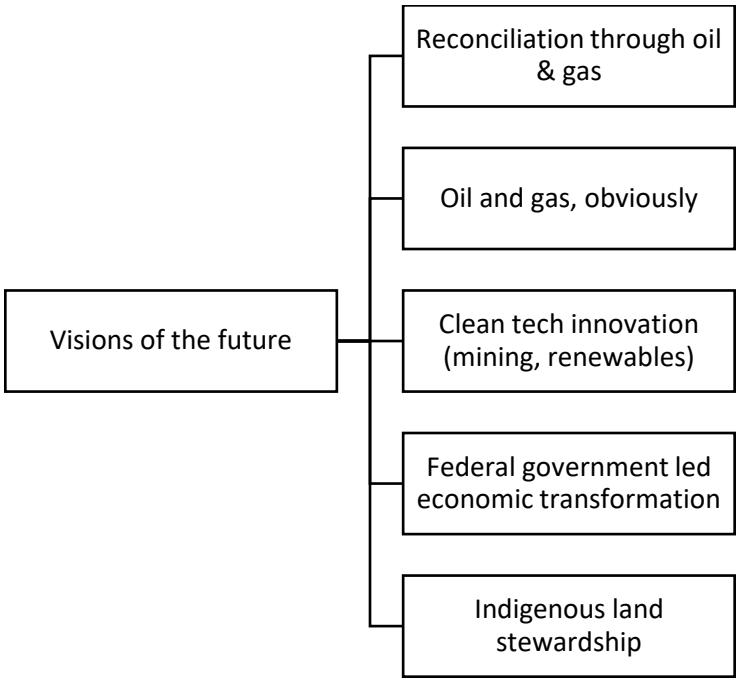

Figure 5: Inductively derived themes pertaining to visions of the future in the mainstream media and parliamentary record

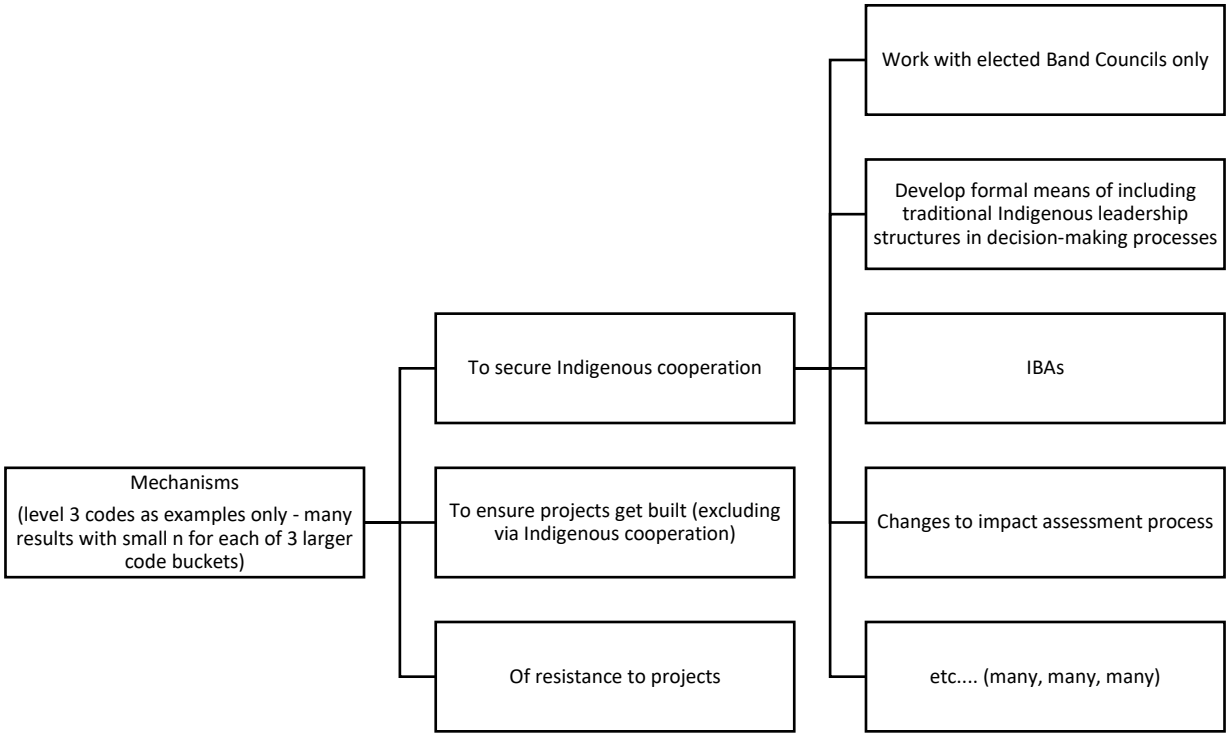

Figure 6: Inductively derived themes pertaining to mechanisms in the mainstream media and parliamentary record

Interviews

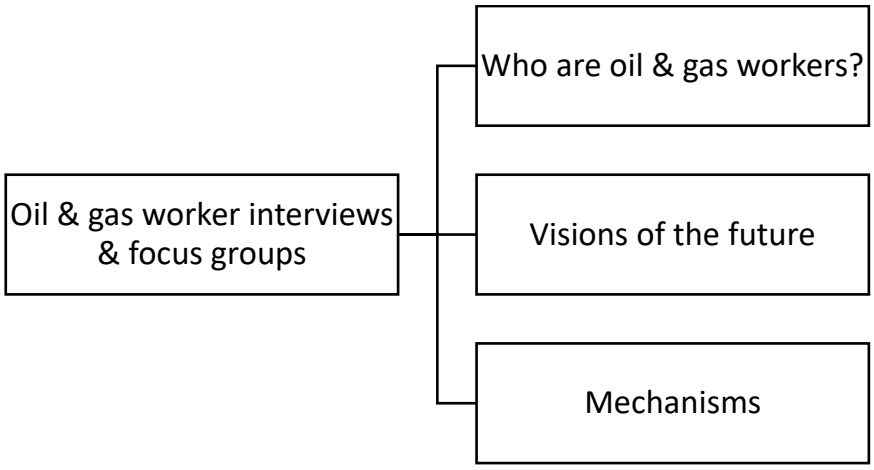

Figure 7: Deductive codes for initial round of coding oil and gas worker interviews and focus groups

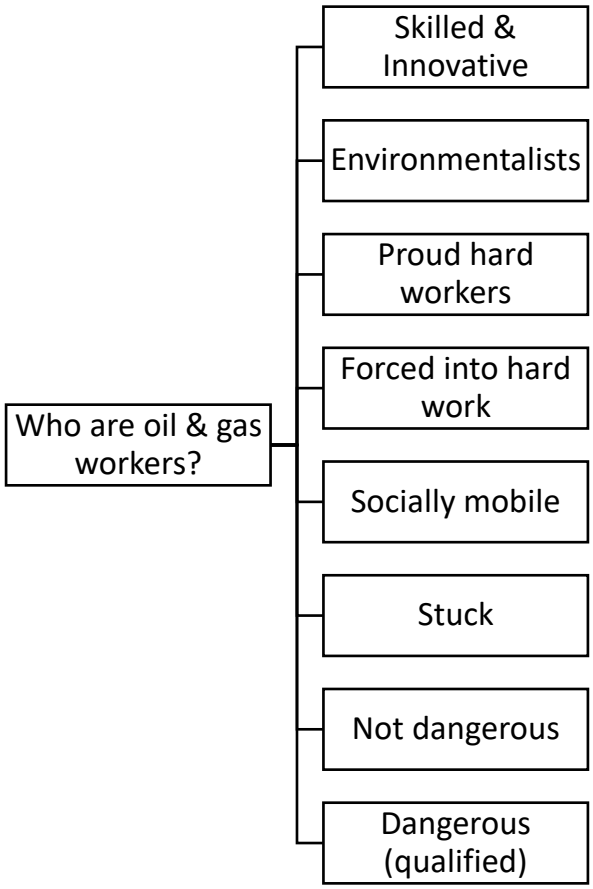

Figure 8: Inductively derived themes pertaining to oil and gas workers in oil and gas worker interviews and focus groups

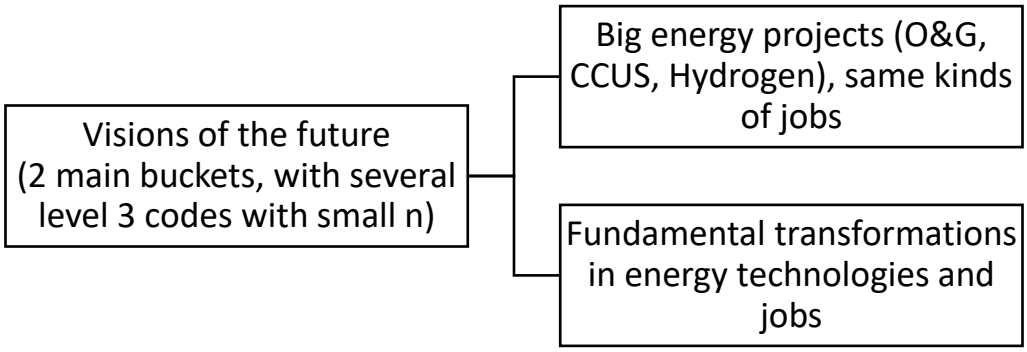

Figure 9: Inductively derived themes pertaining to visions of the future in oil and gas worker interviews and focus groups

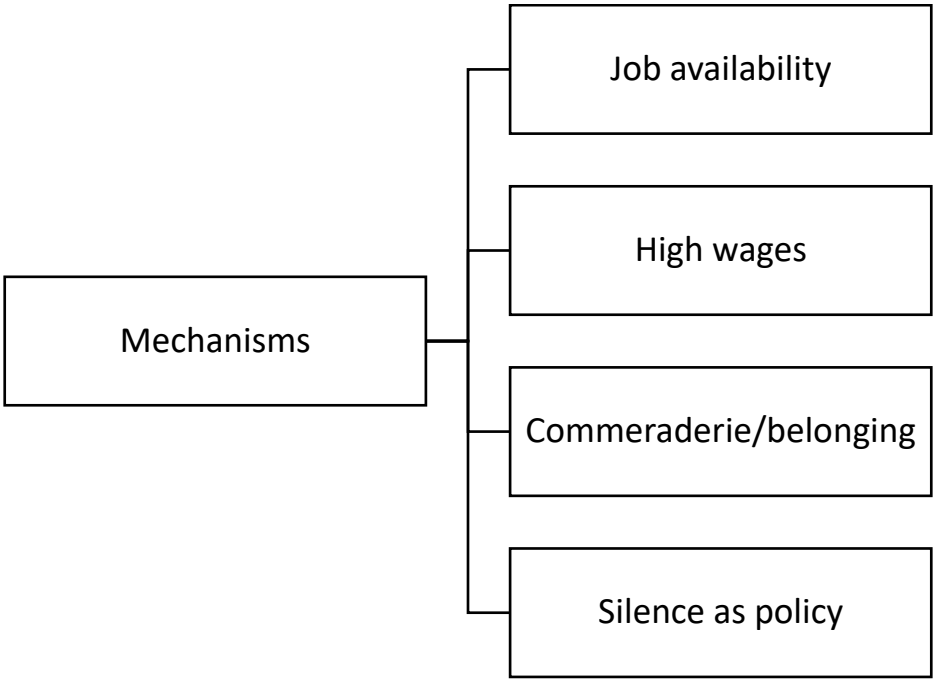

Figure 10: Inductively derived themes pertaining to mechanisms in oil and gas worker interviews and focus groups

Appendix E: List of scholarly articles from scoping review analysed for Chapter 4

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